

General GIS Instruction Package

**A Step-By-Step Guide to Create, Edit, and Maintain
GIS Products.**



June 2023

Southern African Wildlife College

Prepared by students of Sir Sanford Fleming
College in partial fulfilment of academic
requirements



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Chapter 1

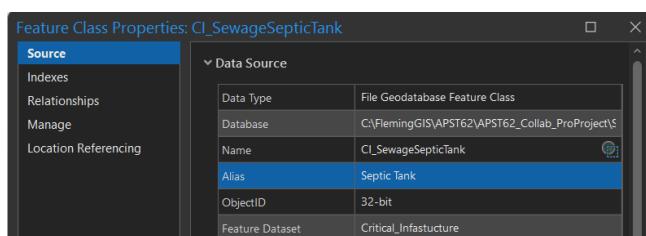
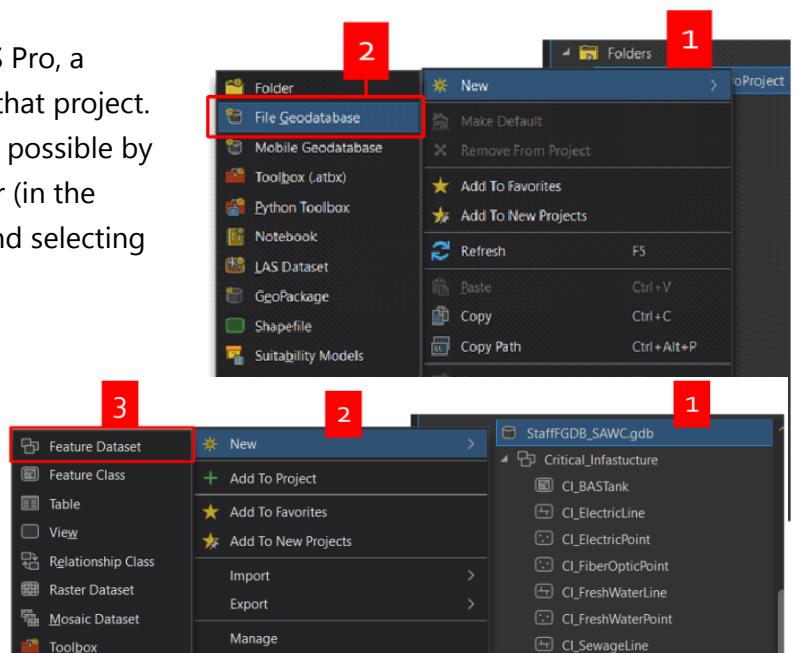
Basics

1.1 File Geodatabase Creation and Standardization

A file geodatabase (FGDB) is an ESRI-specific file management system for storing and managing spatial and non-spatial data. FGDBs are useful for keeping all the data relating to a specific project in a single organized location. The FGDB can store vector data, raster data, tables, views, relationship classes between data, and feature datasets. Below describes the most common best practices for setting up a FGDB to ensure the standardization, consistency, and accuracy of data.

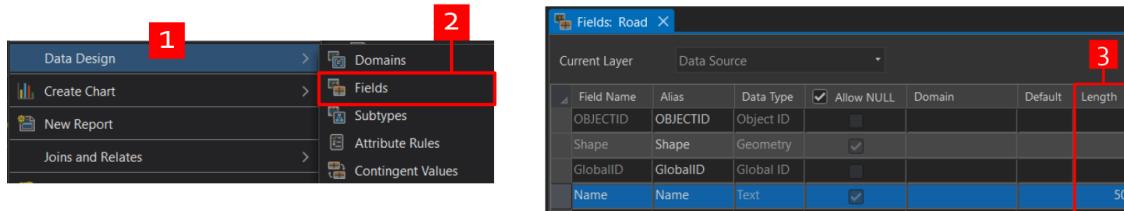
Instructions

- Once a project is created in ArcGIS Pro, a FGDB is automatically created for that project. However, **creating a new FGDB** is possible by right-clicking on the desired folder (in the Catalog pane) to host the FGDB and selecting New -> File Geodatabase.
- Feature datasets** are useful for further organization and to allow additional operations, such as topology rules and network datasets. To create a feature dataset, right-click on the FGDB and select New -> Feature Dataset.
- There are a few best practices when it comes to **naming conventions** of FGDBs, layers, fields, domains, etc. The most important is to not include any spaces or periods in a name. Instead, use an underscore. Others include not starting the name with a number and not using any special characters. It is recommended to keep names singular instead of plural i.e., "Road" instead of "Roads". The layer and field alias allow for a cleaner display in the legend and pop-ups. For example, a layer name should be something that is

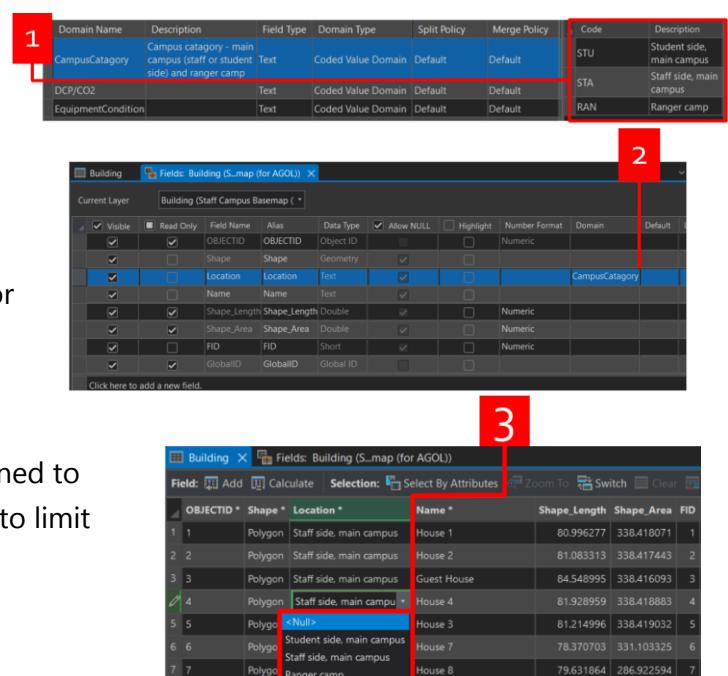


intuitive to the data, such as "CI_SewageSepticTank", whereas the alias should simply be "Septic Tank". This can be updated in the properties of the layer under Source.

- Field names and field aliases follow the same best practices. These can be updated in the Field view of a layer in the Data Design menu, either by right clicking the layer in the Contents pane, or navigating to the Data tab on the main ribbon. **Field lengths** are also important to set while creating a new field, as this ensures the most efficient storage possible. The default length for fields of Text type is 255 characters, however, it is more common to use much less than this limit. For example, we know that road names will likely not reach 255 characters, so ensure our file sizes are not larger than necessary, we set the field length to a maximum of 50 characters.



- Domains** are often built for a FGDB to limit the values accepted in certain attributes. A domain can be created by right-clicking the FGDB and selecting Domains. Start by assigning a domain name, the field type, and the possible values of either a coded value or a range domain type. This domain can then be assigned to a specific field with the same field type. For example, the domain "CampusCategory" can be assigned to the field "Location" in the Building layer to limit users from inputting only three possible locations of a building.



Domain Name	Description	Field Type	Domain Type	Split Policy	Merge Policy	Code	Description
CampusCategory	Campus category - main campus (staff or student side) and ranger camp	Text	Coded Value Domain	Default	Default	STU	Student side, main campus
DCP/CO2		Text	Coded Value Domain	Default	Default	STA	Staff side, main campus
EquipmentCondition		Text	Coded Value Domain	Default	Default	RAN	Ranger camp

Field	Add	Calculate	Selection:	Select By Attributes	Zoom To	Switch	Clear
OBJECTID *	Shape *	Location *	Name *	Shape Length	Shape Area	FID	
1	Polygon	Staff side, main campus	House 1	80.996277	338.418071	1	
2	Polygon	Staff side, main campus	House 2	81.083313	338.417443	2	
3	Polygon	Staff side, main campus	Guest House	84.546995	338.416093	3	
4	Polygon	Staff side, main campus	House 4	81.928959	338.418883	4	
5	Polygon	<Null>	House 3	81.214996	338.419032	5	
6	Polygon	Student side, main campus	House 7	78.370703	331.103325	6	
7	Polygon	Staff side, main campus	House 8	79.631864	368.922594	7	
		Ranger camp					

Relevant Tutorials

ArcGIS Online Documentation: [Getting Started with the Geodatabase](#)

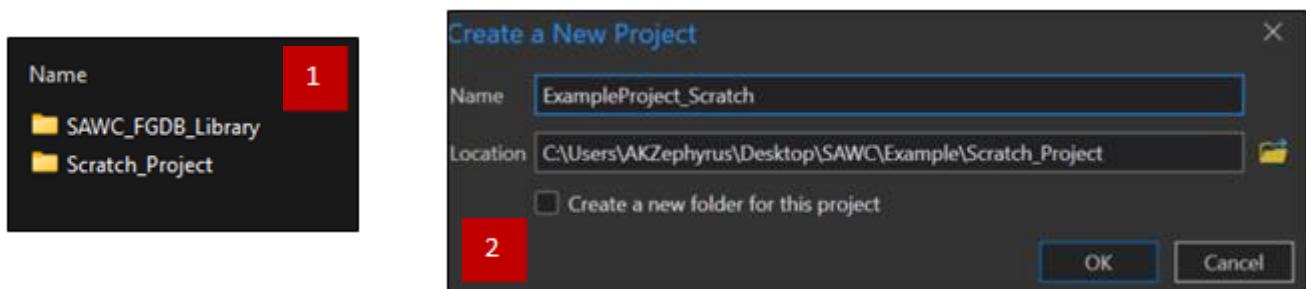
1.2 Preserving Data through Local Projects

When using data from the file geodatabase, it is important to uphold the databases integrity and ensure that the true data is not unintentionally changed. Please follow the instructions below when:

- You are working with the SAWC FGDB Library, but you are not intending to update it,
- You are using data for a project when you are not the data owner, or
- You are experimenting with potential changes before making updates.

Instructions

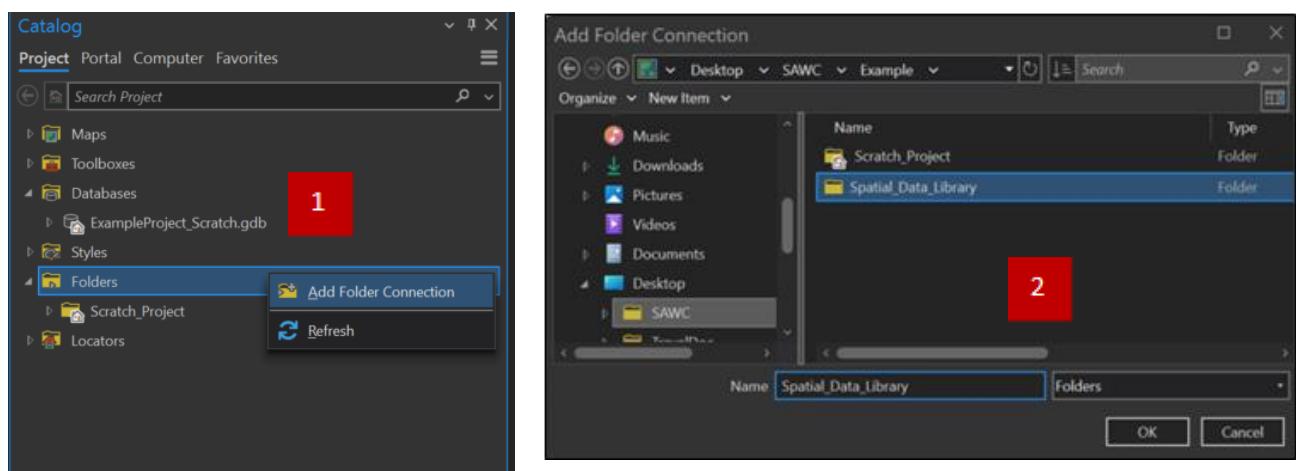
1. Set up a **Local Project Environment** by setting up a new folder to hold your project, that is separate from the SAWC FGDB Library. Then, create a New Project in ArcGIS Pro, and save to your Project Folder.

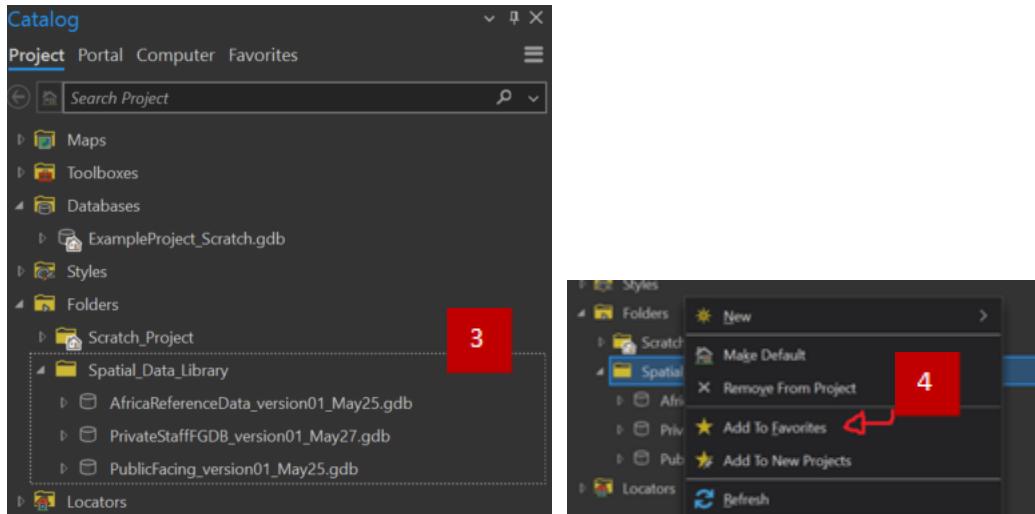


To import layers from the SAWC FGDB Library,

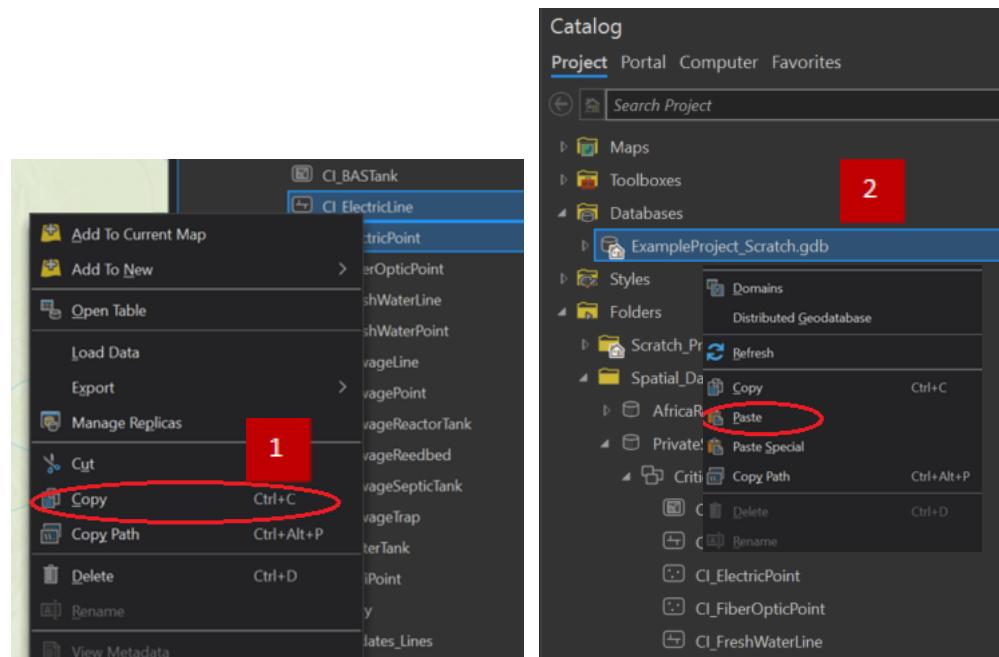
1. Right click on the Folders section in the Catalog Pane and select Add a Folder Connection. Find and select the SAWC File Geodatabase Library.

Optional: Right click on this new folder and Add to Favorites. Moving forward, you can quickly select this library path in the Favorites tab of the Catalog pane.





2. Select, left click, and copy the data you would like to use in your project. Then, right click on the local project file geodatabase and paste the files.



3. Right click on the applicable data in your local project database and select Add to Current Map to work with the data.

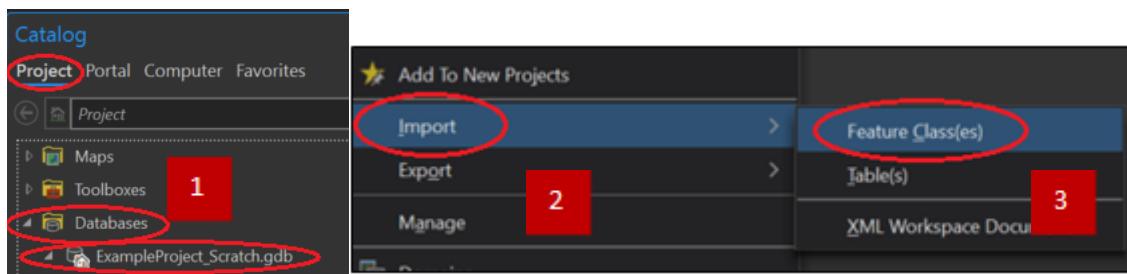
Note: The same process as above can be used to import data back into the SAWC FGDB Library and overwrite the official data source. As files cannot share the same name in the file geodatabase, you will need to temporarily rename the original file with a naming convention such as '[old name]_old' before importing the new file and deleting the original.

To import layers and web maps from ArcGIS Online,

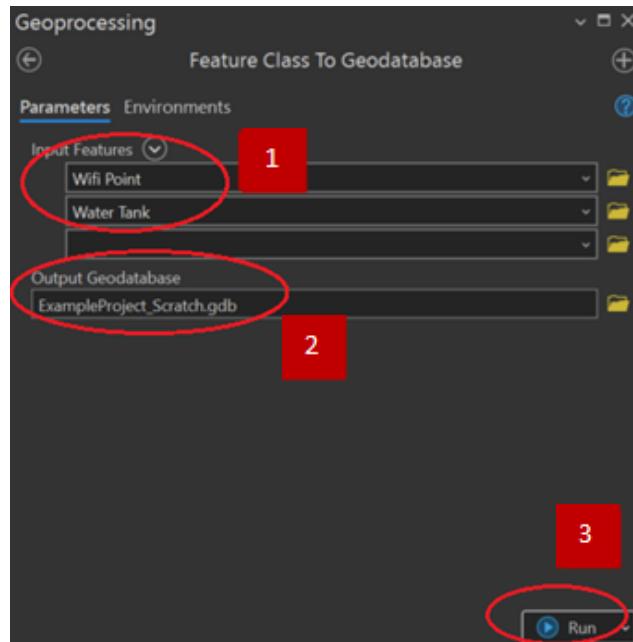
1. From the catalog pane, select the Portal tab. Then, select the appropriate source within ArcGIS Online depending on how the data is shared (e.g., 'My Content', 'My Groups' or 'My Organization').
2. Search for the layer or map of interest, right click on the layer and add it to the current or a new map.



3. Now, identify which layers you would like to work on and return to the Project tab of the Catalog Pane. Expand Databases, right click on the local project geodatabase, then select Import, and Feature Class(es).



4. In the window that appears, indicate which layers from the current map you'd like to edit, select the local project file geodatabase as the output geodatabase, and select Run.



5. Edit and export your data as indicated above.

Relevant Tutorials

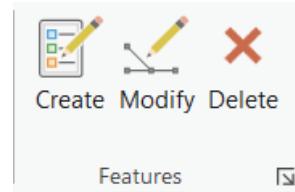
File Geodatabase Creation and Standardization (p. 3)

Uploading Features to ArcGIS Online (p. 14)

ArcGIS Online Documentation: [Add Data to a Project](#)

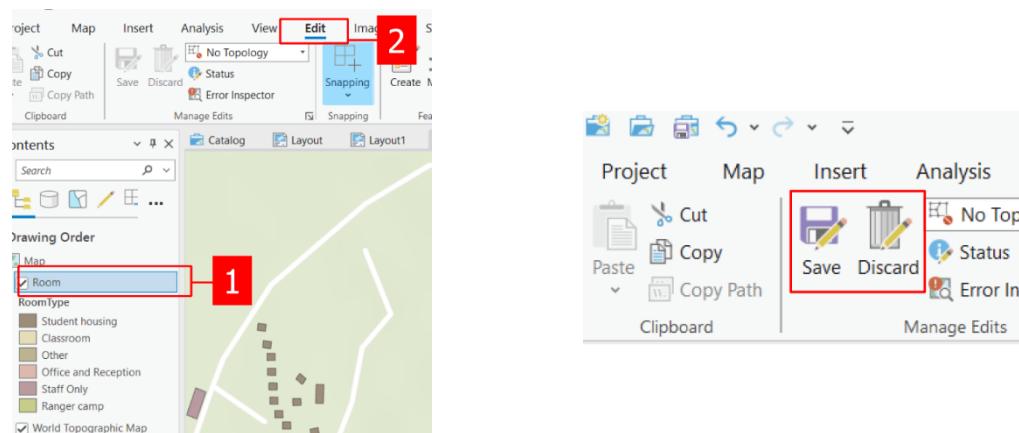
1.3 Updating Features

As physical features change around the campus – such as buildings, rooms, assets – so should the GIS features that represent them. The instruction below describes how to create new records, edit, and delete records in feature classes within ArcGIS Pro.



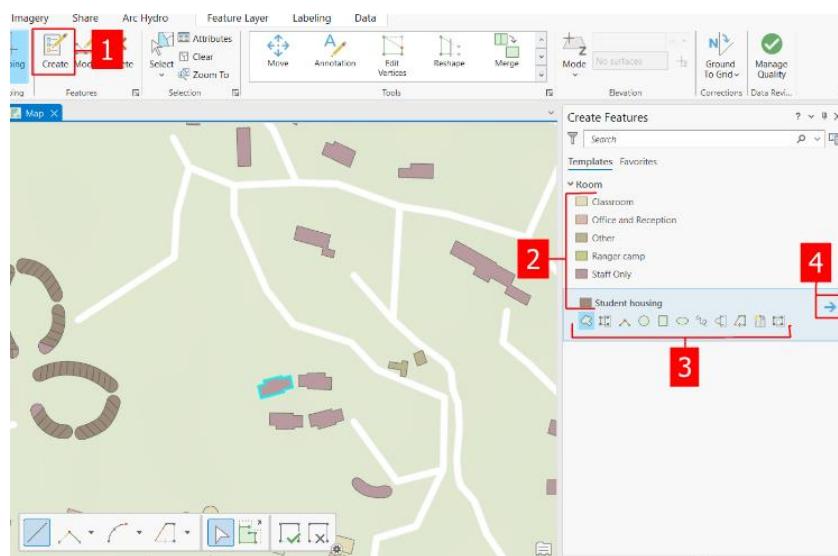
Instructions

1. To start editing, select the desired feature in the Contents pane then choose the Edit tab.
After making edits, as described below, make sure to either Save or Discard them.

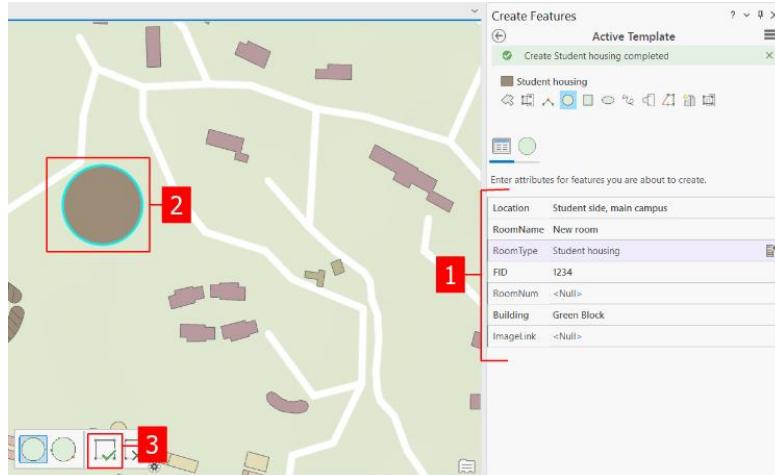


Create

1. To create a new record in a feature, select the Create option and choose the desired feature and shape type. Next, select the arrow.

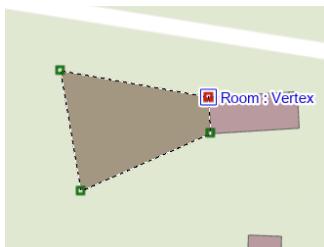
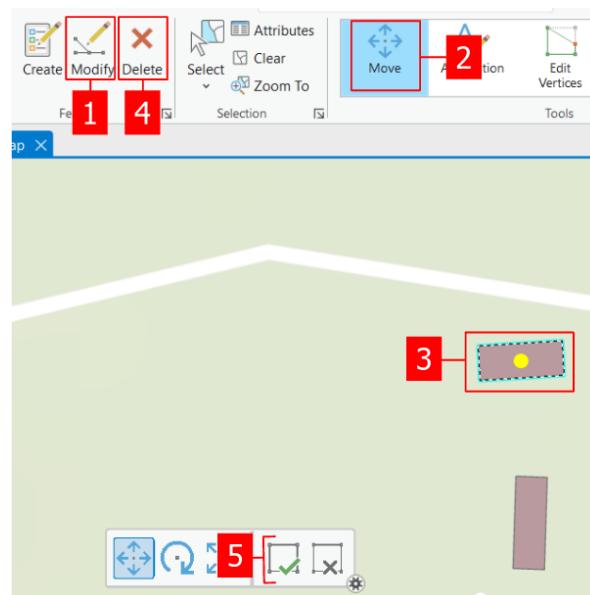


2. Fill out the necessary attribute information, draw the feature, and select the green check mark. If you make a mistake, select the black X instead of the check mark.



Delete

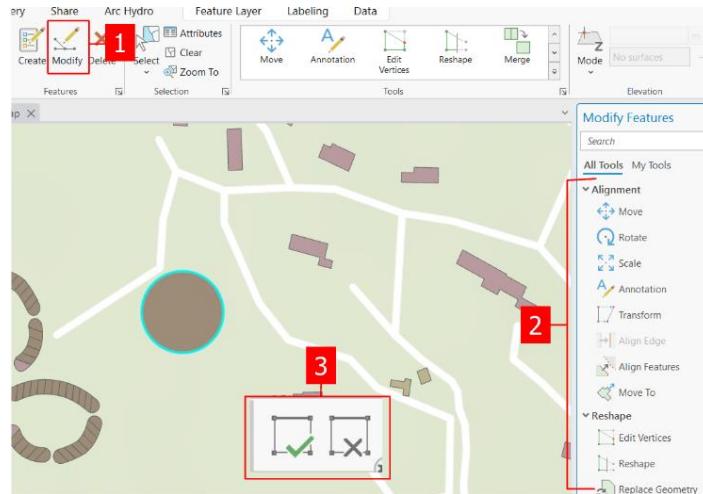
1. To delete an existing feature, select Modify, choose the Move tool, and select the feature you'd like to delete. Then select Delete and either confirm or cancel your change with the check or X.



Note: When snapping is toggled on it is easier to align features with one another. Features can be snapped to vertices, endpoints, and edges of other features.

Modify

- To modify an already existing feature, select the Modify option then choose the desired Tool. Tool names are mostly self-explanatory, but you can read more about each of the tools [here](#). Upon making edits either commit or cancel them with the check or X.



Note: The Divide tool was used frequently used to create the Rooms layer. To add new rooms to the Rooms feature, follow the below steps.

Create New Rooms

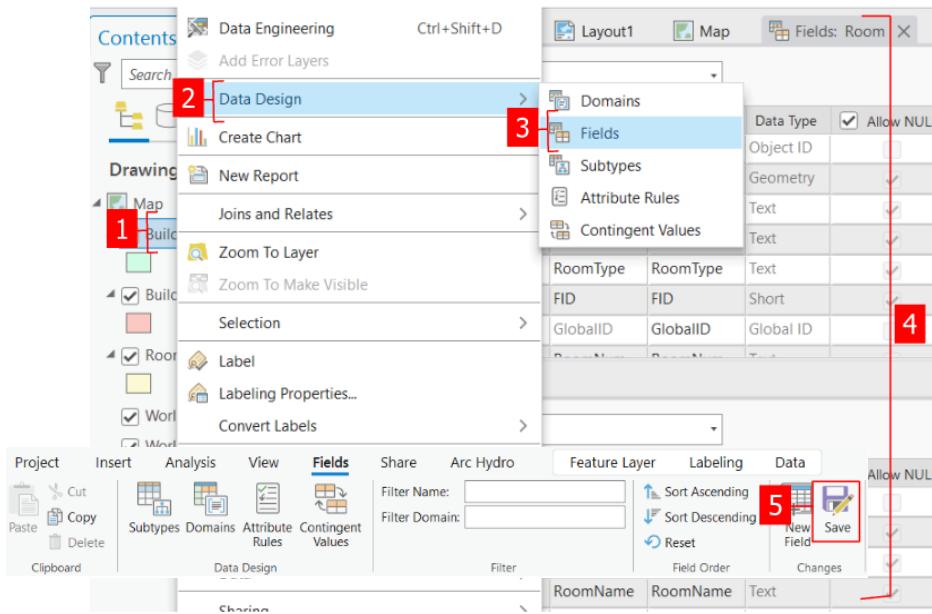
- For a new building, use the *Create* instructions above to add the building to the Buildings layer (for new rooms in a pre-existing building, jump to step 5). In the Catalog pane, copy/paste the Buildings layer to the file geodatabase to create a copy of the layer. Add the copied layer to the map.



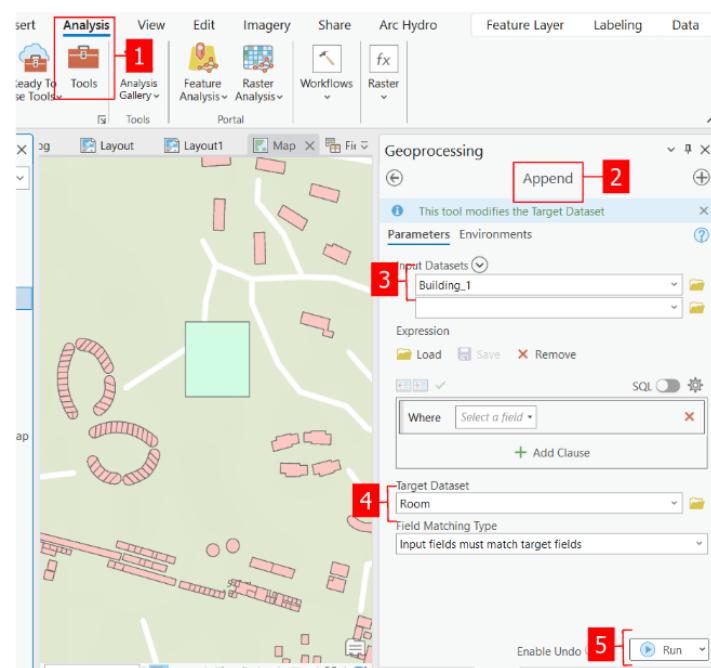
- Open the attribute table of the copied Buildings layer and delete all records other than newly created building (select the new record, Switch Selection, Delete).

	OBJECTID *	Shape *	Location *	RoomName	RoomType	FID	GlobalID *
225	226	Polygon	Student side, main campus	Hluhluwe	Student housing	226	152ECBES-0EB6-4
226	227	Polygon	Student side, main campus	Kalahari	Student housing	227	981646FE-42AD-
227	228	Polygon	Student side, main campus	Maintenance	Maintenance	228	(05E64177-6CE1-4
228	229	Polygon	<Null>	<Null>	Conference Room	229	EF07084F-21F4-4
	229	Polygon	<Null>	<Null>	Staff only	<Null>	(97EED631-E918-
Click to add new row							

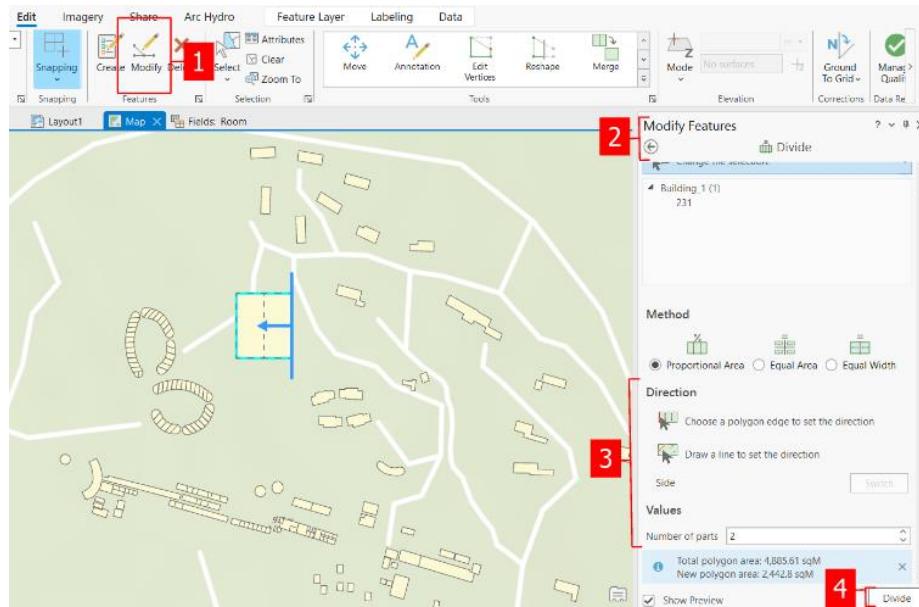
3. Right-click the copied Buildings layer, select Data Design, and open Fields. Do this for the Rooms layer as well, and change the copied Buildings layer fields to match the Rooms layer exactly. Select Save once the field match.



4. Finally, go to the Analysis tab and select Tools. Search for the Append tool and choose it. Enter the copied Buildings layer as the input dataset and the Rooms layer as the target dataset. Run the tool. This will add the new building to the Rooms layer, and it is now ready to be divided into separate rooms. The copied Buildings layer can now be deleted from the file geodatabase.



5. In the Edit tab, select Modify and search for the Divide tool in the Modify Features pane. Select the direction and choose how many divisions / how many rooms. Finally select divide. The record will be multiplied in based on the number of divisions, so it is important to update the attributes as necessary in the Room layers attribute table after dividing.



Relevant Tutorials

File Geodatabase Creation and Standardization (p. 3)

Preserving Data through Local Projects (p. 5)

Uploading Features to ArcGIS Online (p. 14)

ArcGIS Online Documentation: [Using Snapping](#)

ArcGIS Online Documentation: [Modify Features Tool Reference](#)

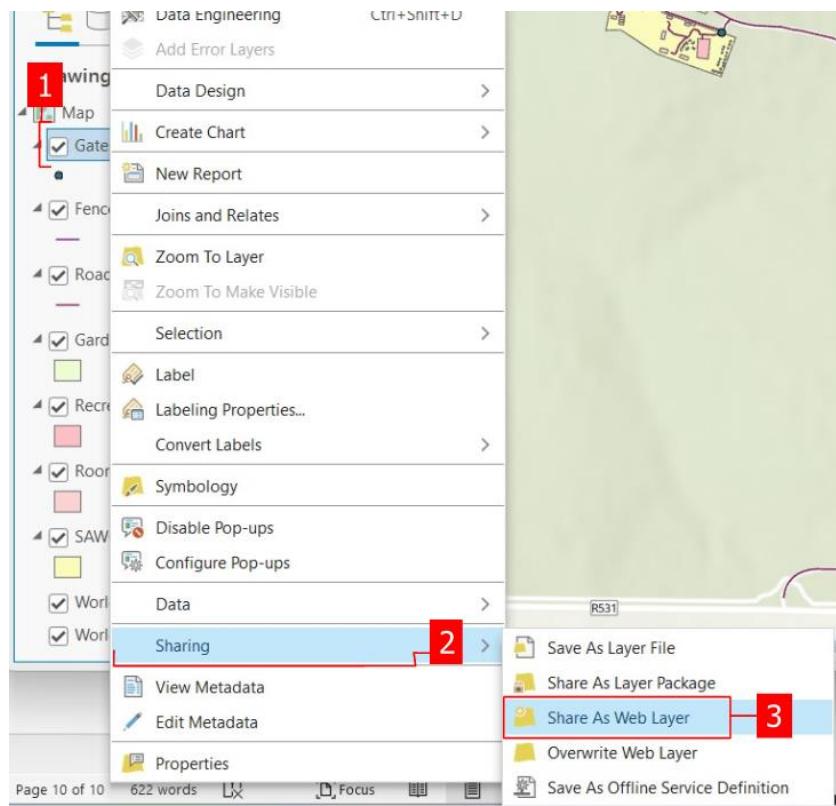
1.4 Uploading Features to ArcGIS Online

Feature classes can be uploaded to ArcGIS Online as a hosted feature layer. These layers can then be used to create web maps within ArcGIS Online, and use those maps can be used in applications such as ArcGIS Field Maps and Experience Builder. Once features have been shared to ArcGIS Online, they can be overwritten to push through any updates. Below describes how to share and overwrite features to ArcGIS Online.

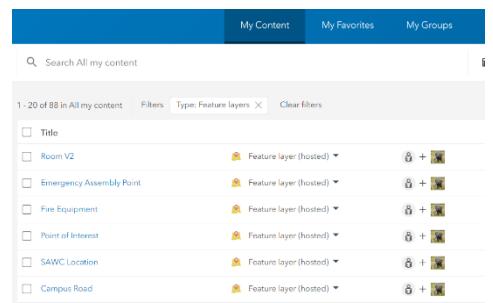
Instructions

Sharing Features

- From the contents pane in ArcGIS Pro, right click the feature, open the Sharing menu, and select Share as Web Layer.

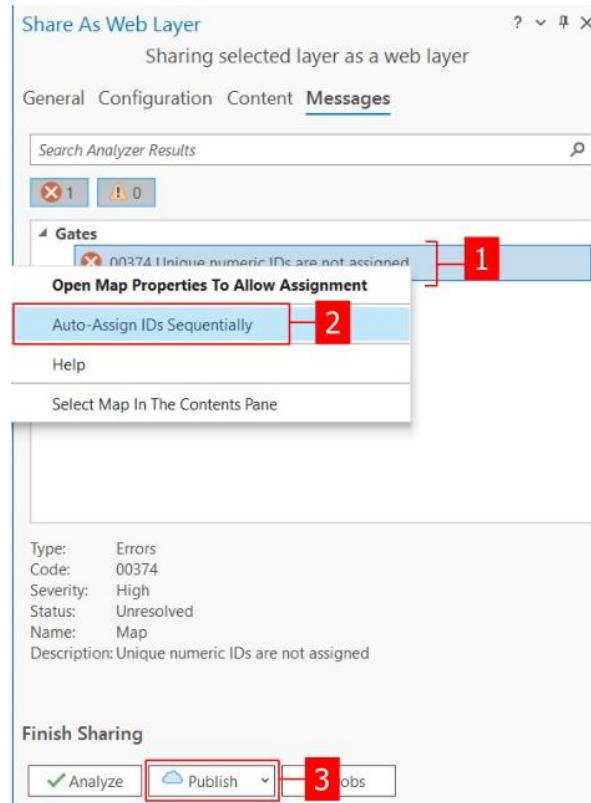


- Fill in the name, tags, description as you see fit. Select the folder under and who the feature should be visible to. Once all the information is filled out, select Analyze.



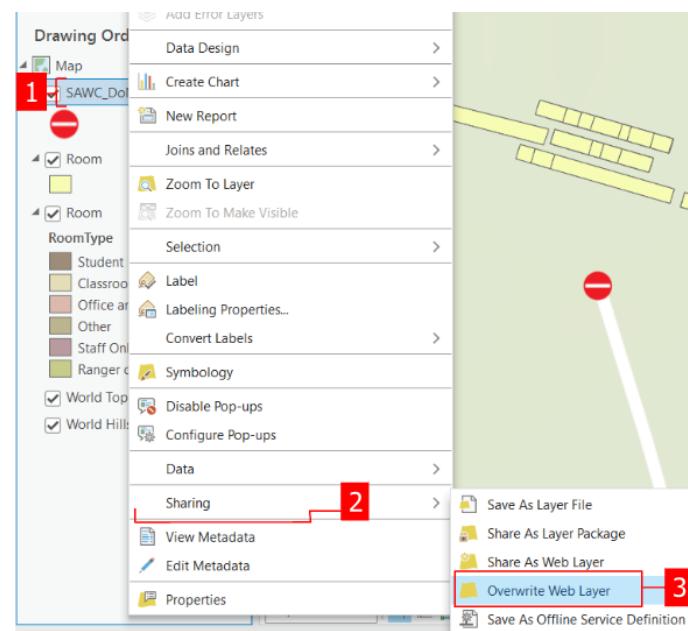
The screenshot shows the 'My Content' page in ArcGIS Online. At the top, there are tabs for 'My Content', 'My Favorites', and 'My Groups'. A search bar says 'Search All my content'. Below the search bar, it says '1 - 20 of 88 in All my content' and 'Type: Feature layers'. There is a 'Filters' button and a 'Clear filters' button. A table lists 20 feature layers, each with a title, a 'Feature layer (hosted)' icon, a 'Details' button, and a 'Share' button. The feature layers listed are: Room V2, Emergency Assembly Point, Fire Equipment, Point of Interest, SAWC Location, and Campus Road.

3. Error 00374 will usually come up. Click on the 3 dots next to the error, then select Auto assign IDs. If there are other errors, look up their error codes in ArcGIS Onlines documentation. If there are no other errors, select Publish.

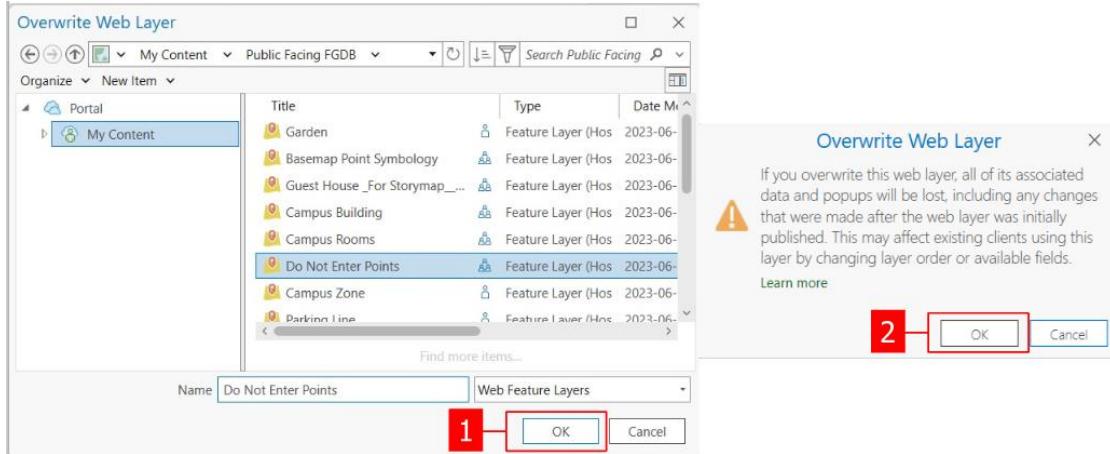


Overwrite Features

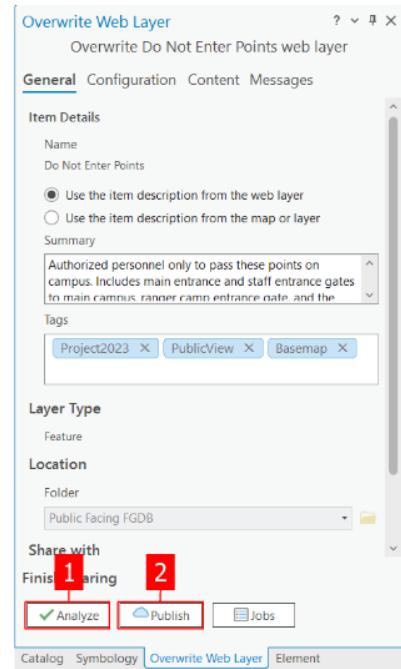
1. Similar to the steps for Sharing Features, right click the feature, open the Sharing menu, and select Overwrite Web Layer.



- Overwrite Web Layer File Explorer will pop-up, browse and find the ArcGIS Online item you are trying to overwrite. Select the item and select OK. Then select OK on the next pop-up.



- Select Analyze and follow Step 3 in the section above. Back in the General tab, ensure the Summary, Tags, Location, and Sharing settings are still accurate for the new version of this feature. Select Publish.



Relevant Tutorials

ArcGIS Online Documentation: [Publish Hosted Imagery Layers](#)

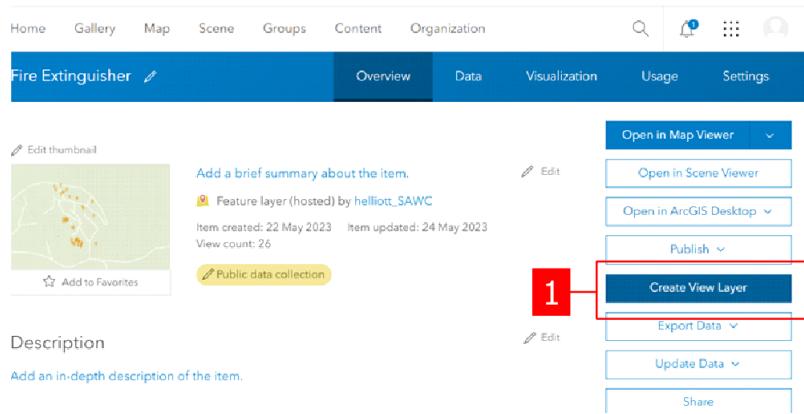
ArcGIS Online Documentation: [Publish Hosted Feature Layers](#)

1.5 Creating Feature Views

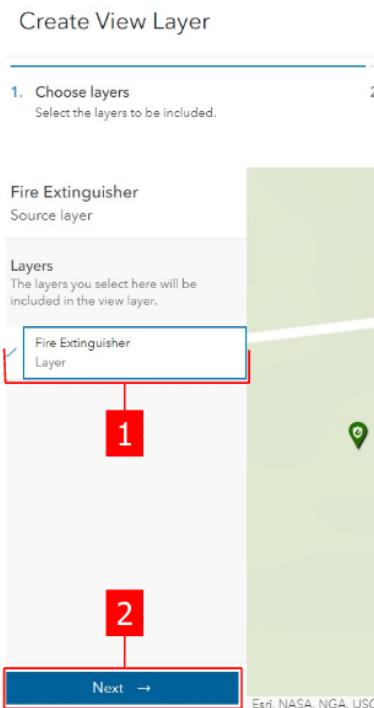
ArcGIS Views are ideal for showing data layers, without all of their attributes and information. For example, Views were used to display the locations Fire Extinguishers on public facing maps. Views are used in this scenario, because although it is useful for the public to know where such equipment is, they do not need to know the last time the equipment was serviced, what the equipment's ID is, etc. Below describes how to create Views in ArcGIS Online.

Instructions

1. In ArcGIS Online, go to the layer's items page and click Create View Layer.

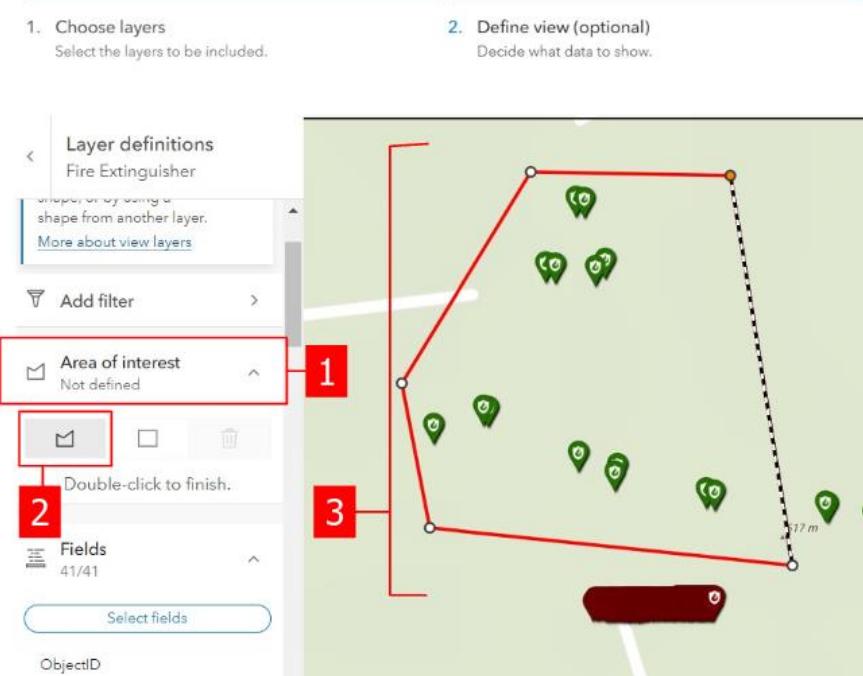


2. Ensure the layer you want to create a View of is selected, select Next.

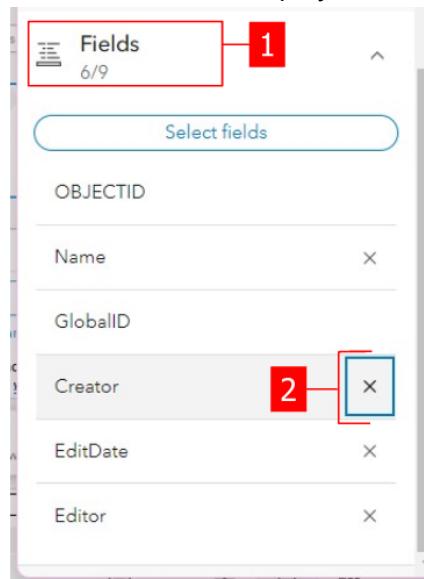


3. In this scenario, we only want certain fields to be visible and that's why we're creating a View. If this is similar to your scenario, jump to the step 4. If you would like to limit the records that are shown based on location – for example, if you would only like to show the instances that are on the student side of the main campus – click on the layer in the left side panel and select Area of Interest, then define that area with Polygon tool. If you do not want to limit the fields that are shown, go to step 5.

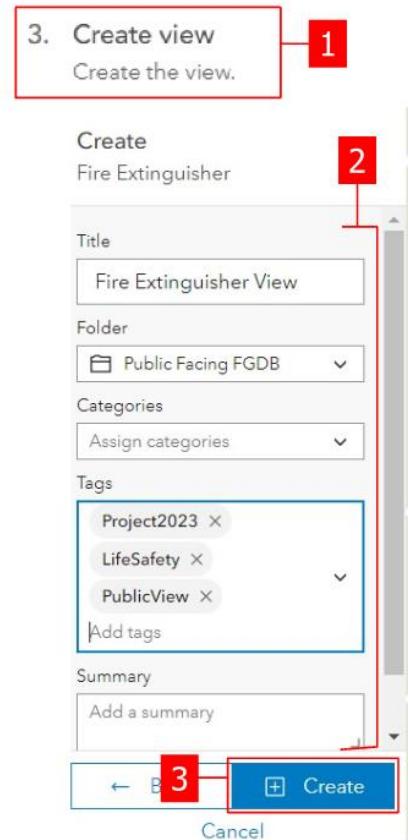
Create View Layer



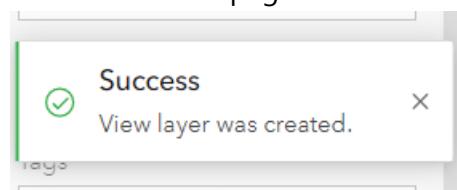
4. To limit visible fields, click on the layer in the left side panel, and select Fields. Then click the X next to the fields you do not want to be displayed in the View.



5. Select Create View at the top right. Fill in the name of the View, the folder you want it to be in, tags, etc. and select Create at the bottom.



6. This may take a moment. Eventually this message should pop up, and you will automatically be brought to the Views item page.



Associated Items and Projects

[Assembly Points and Fire Extinguishers Web Map](#)

[Fire Extinguishers View \(Item Page\)](#)

Relevant Tutorials

ArcGIS Online Documentation: [Create Hosted Feature Layer Views](#)

Upload Features to ArcGIS Online (p. 14)

Chapter 2

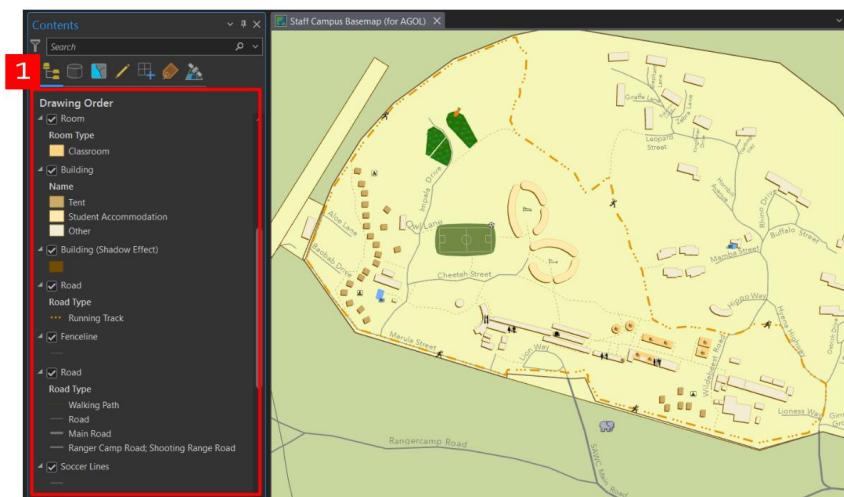
Basemaps

2.1 Creating a Basemap

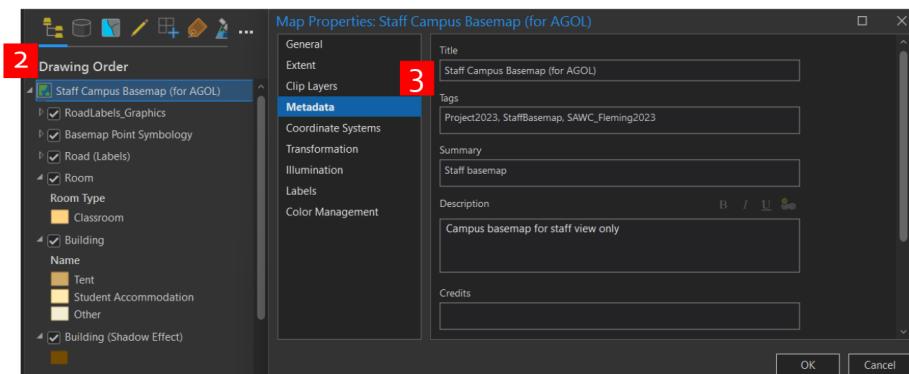
A basemap is used as a base layer to provide reference to additional layers, usually operational layers, that are placed on top. Custom basemaps are beneficial in projects as they allow more personalization of the study area. Below describes how to how to create a custom basemap.

Instructions

1. Start by choosing the static layers that will be on the basemap.

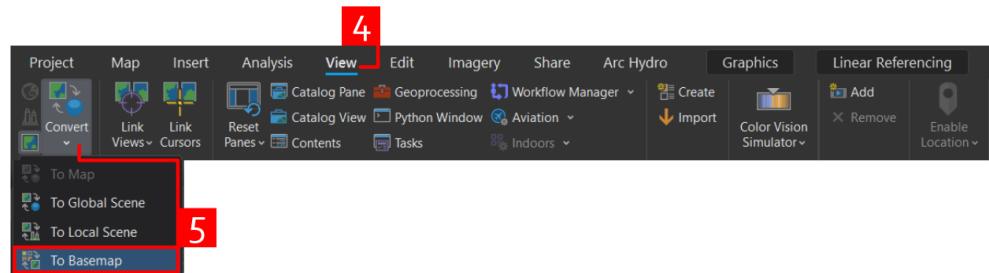


2. In the properties of the map frame, under Metadata, change the title to something more descriptive and add a description, summary, and tags.

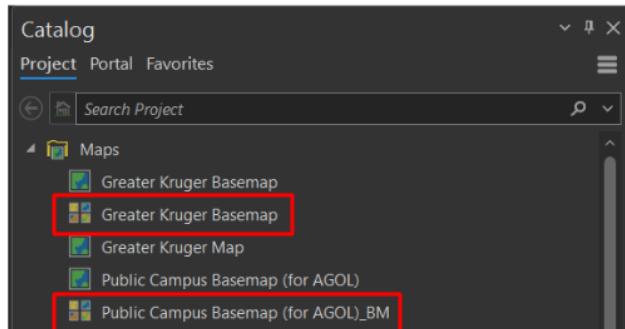


3. Under View, in the main ribbon, select Convert and choose To Basemap.

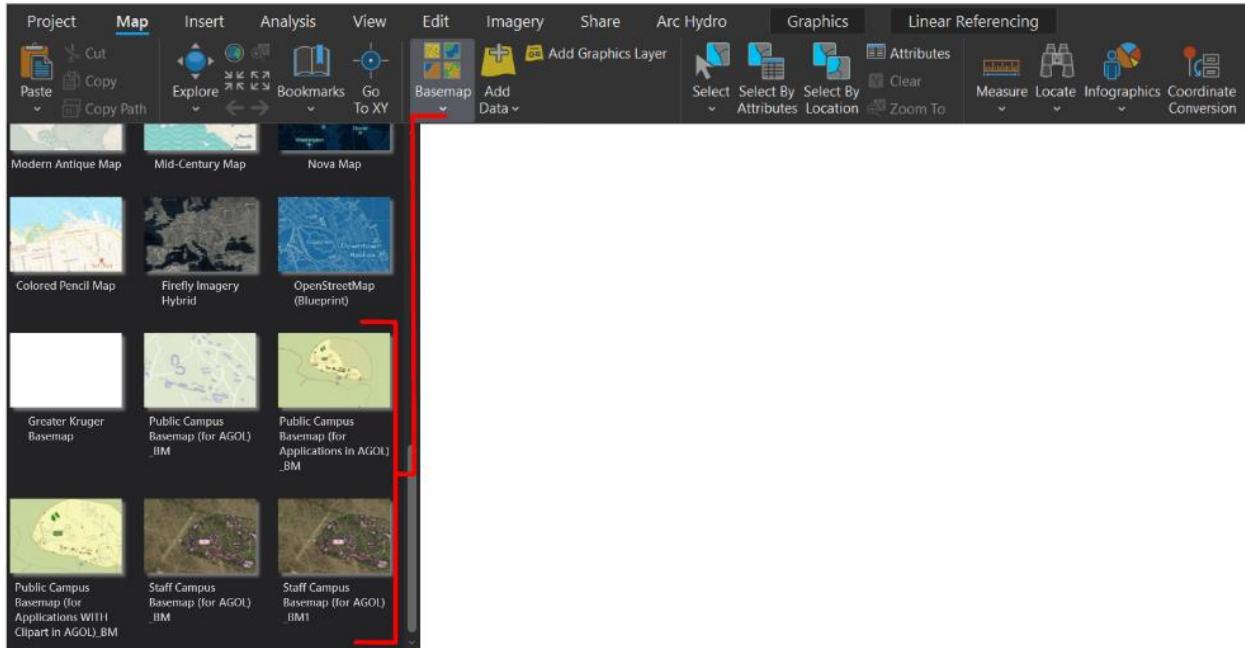




4. All the basemaps created can be seen under Maps in the Catalog pane.



5. Additionally, these basemaps will be added to the list of basemaps given by ESRI, which will be available for the project workspace unless deleted.



Relevant Tutorials

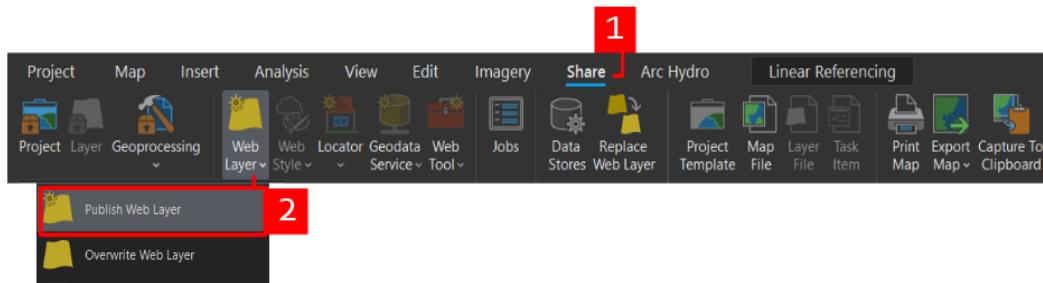
[Converting a map to a basemap in ArcGIS Pro.](#)

2.2 Sharing a Basemap to ArcGIS Online

Sharing a Basemap to ArcGIS Online is useful as it can be applied to all web maps and future projects. Below describes how to upload your customized basemap to ArcGIS Online.

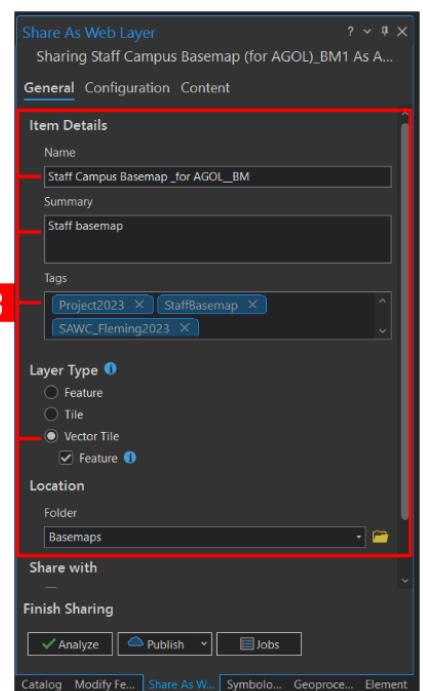
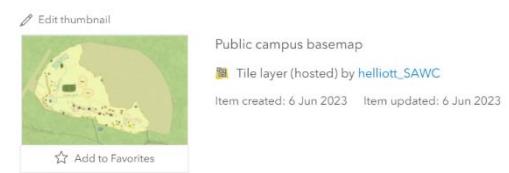
Instructions

1. In the main ribbon, choose Share and select Publish Web Layer.

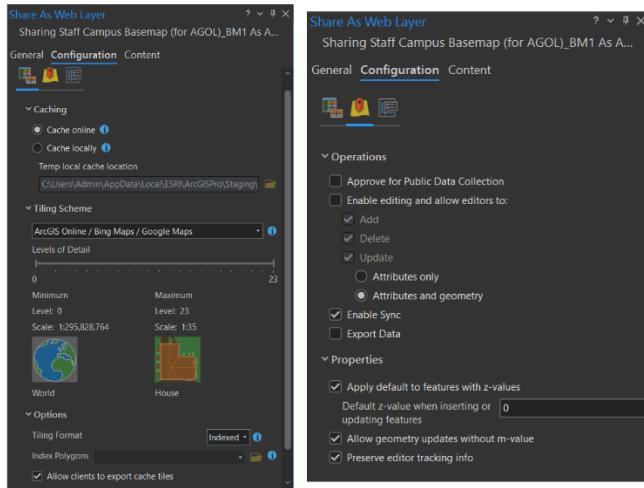


2. Share as a Vector Tile layer with either the Feature option turned on or off. By deselecting the Feature option, the basemap will be shared as a vector tile with an additional tile package hosting all the layers in the basemap. If the Feature option is selected, the basemap will be shared with an additional feature layer package, instead of a tile package, hosting the layers present in the basemap.
3. The name, summary, and tags given to the web map before converting to a basemap are automatically applied when sharing.

Public Campus Basemap (for AGOL)



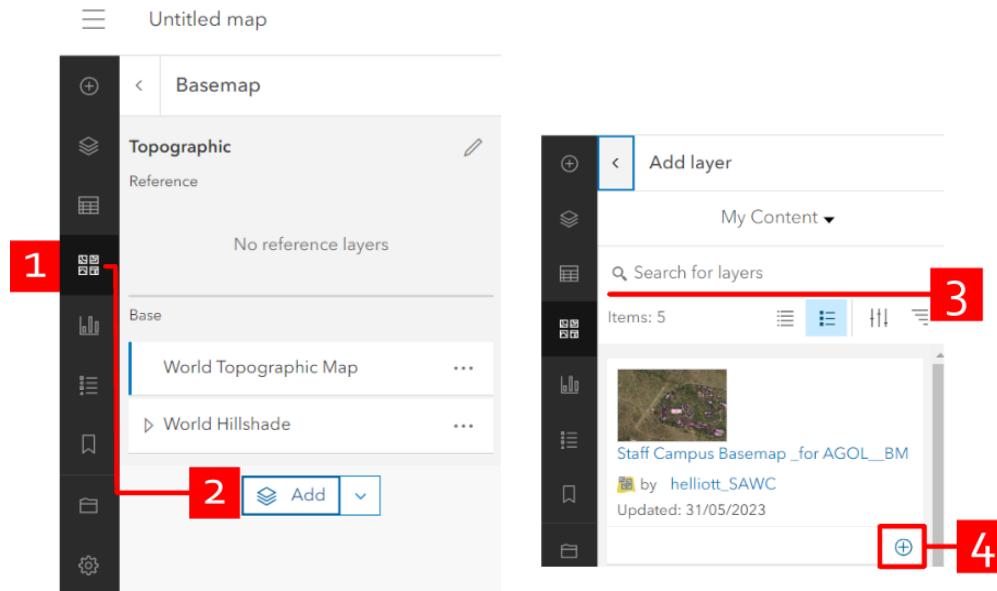
4. The configuration tab also allows more settings to be applied. For example, setting the tiling scheme, allowing clients to export cache tiles, enabling sync, etc.



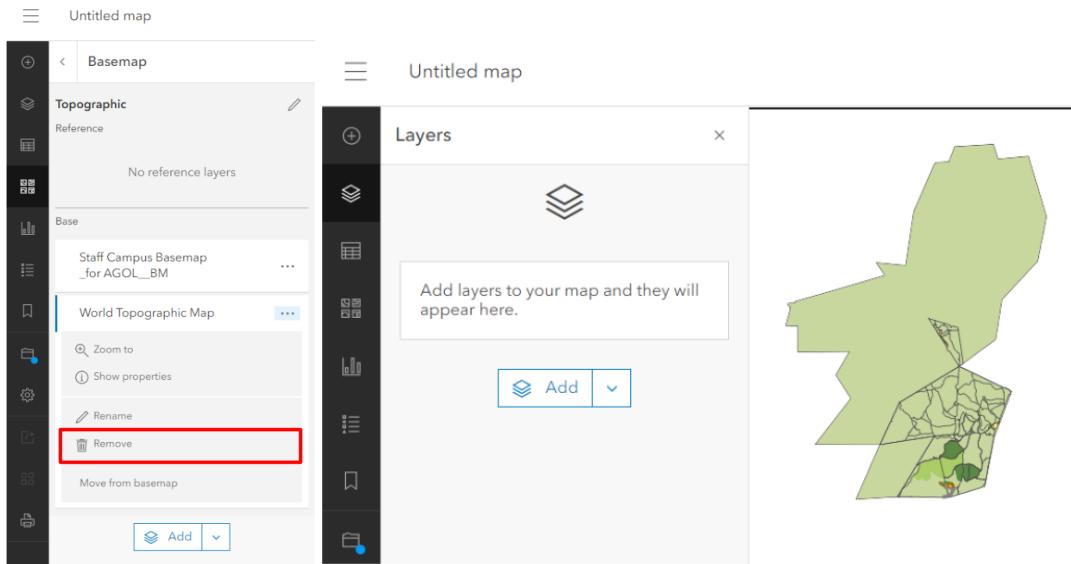
Results

Or

5. Once the basemap is shared in ArcGIS Online, it can replace the ESRI basemaps provided in the web maps. To do this, select the basemap tab on the left-hand side and choose Add. Search for the desired basemap that was uploaded to ArcGIS Online.



6. The default basemaps can then be removed and operational layers may be added on top.



Relevant Tutorials

ArcGIS Online Documentation: [Share a map \(or custom basemap\) as a Vector Tile layer to AGOL.](#)

Chapter 3

Incorporating Images

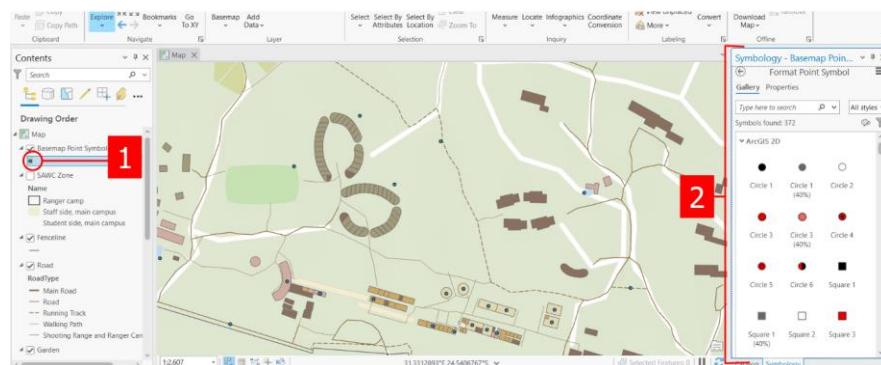
3.1 Using Images as Feature Symbols

Feature classes can be symbolized with an image in ArcGIS products, which can be useful in several situations. For example, when there is a universally understood symbol that is not included in ArcGIS's symbol choices. Assembly Point symbols were used in several navigation maps, to clearly show where Emergency Assembly Points are located on the main SAWC campus. Below describes how to upload images as symbology.

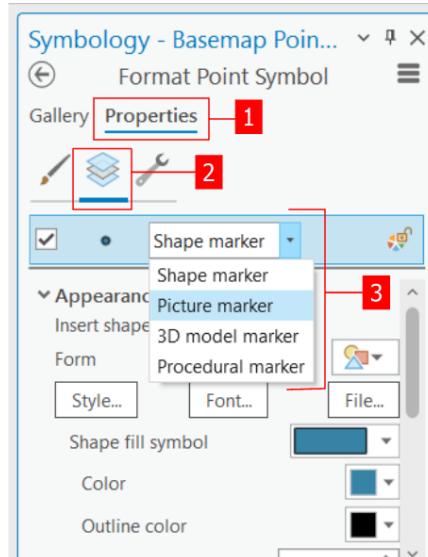


Instructions

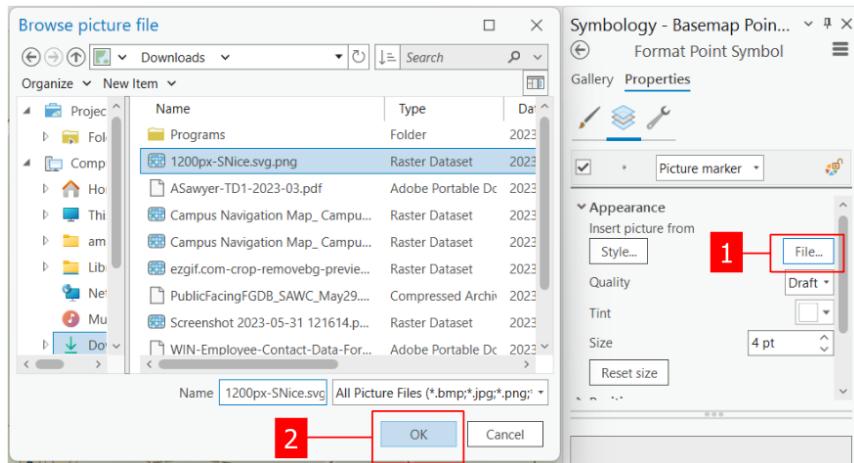
1. In ArcGIS Pro, double click on the features symbol in Contents to open the Symbology pane.



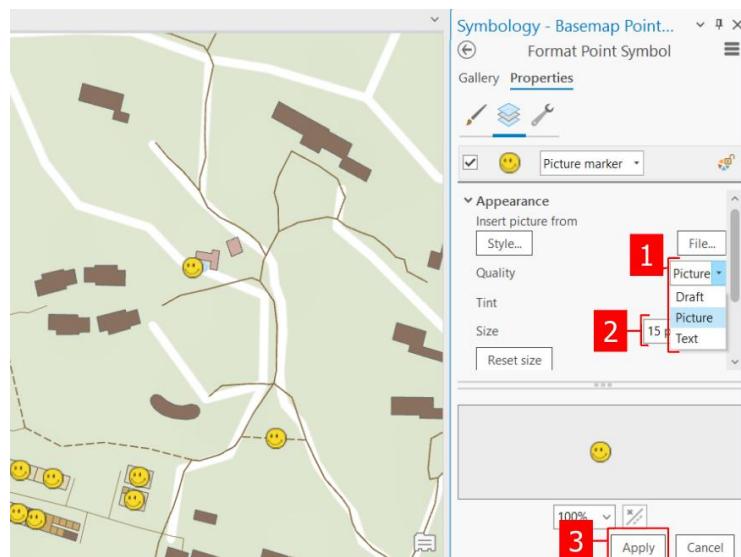
2. Select the Properties tab, then the Layers option. Open the drop-down menu and select Picture marker.



3. Choose File and select the desired image within Browse picture file explorer that opens. Select OK.



4. From the drop-down menu, select Picture for the best quality image. Then, increase or decrease the size of your symbol. Finally, select Apply.



Associated Projects

[Assembly Points and Fire Extinguishers Web Map](#)

[Assembly Points \(Item Page\)](#)

Relevant Tutorials

Upload Features to ArcGIS Online (p. 14)

ArcGIS Online Documentation: [Pictures in ArcGIS Symbols](#)

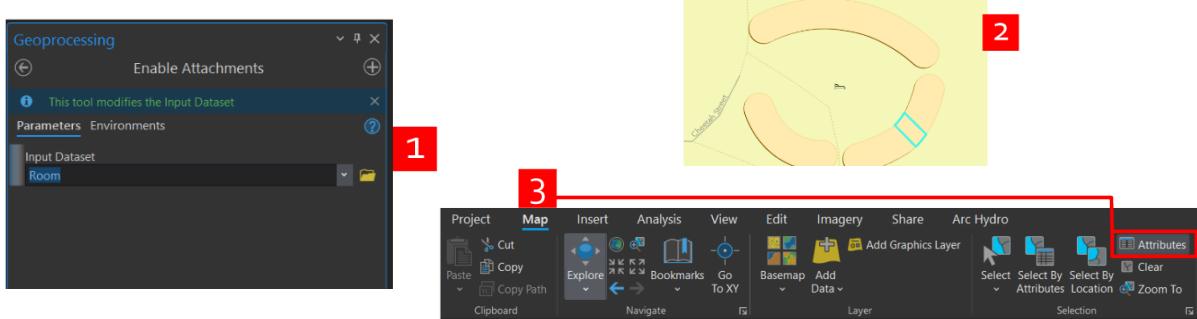
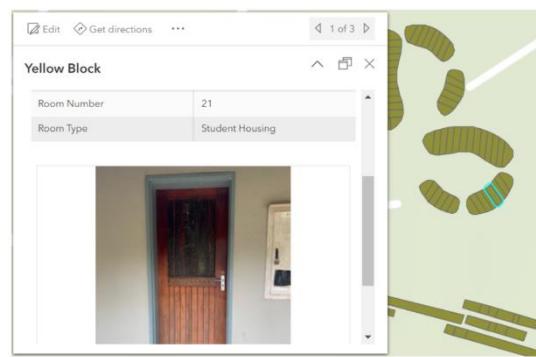
3.2 Attaching Images for Pop-ups

Images are beneficial in projects as they give additional context to features. Below describes the process for adding images as attachments.

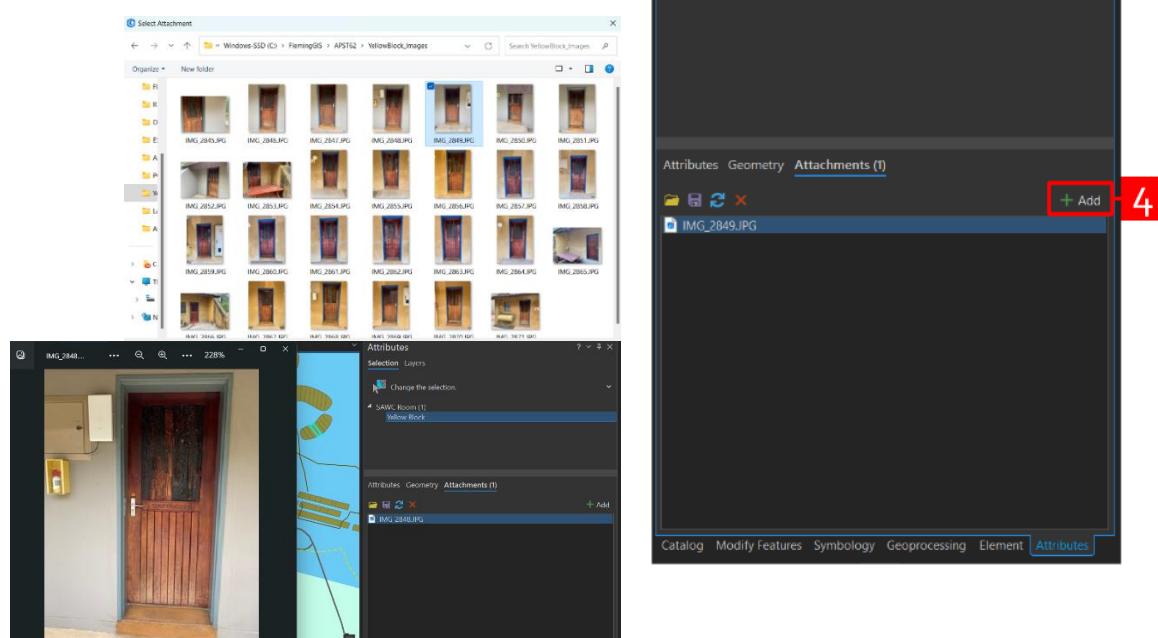
Instructions

In ArcGIS Pro

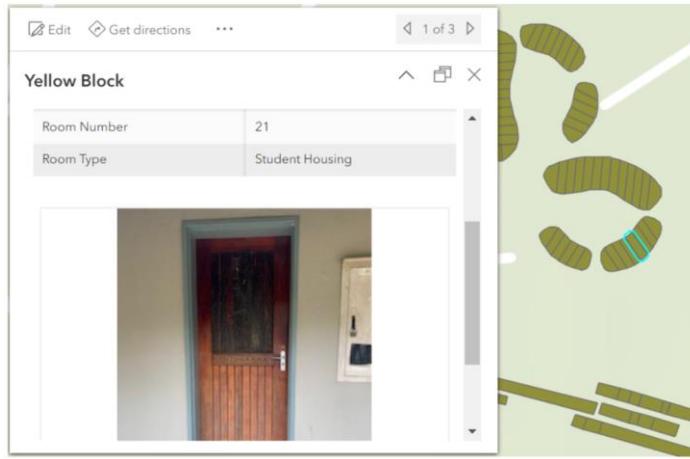
- Search for the Enable Attachments tool and run the tool with the layer that will have the image attachments. Then, select a feature in that layer to add an image. Open the attributes pane from Map tab in the main ribbon.



- In the attributes pane, under the Attachments tab, select the Add button and choose the image that will be attached.

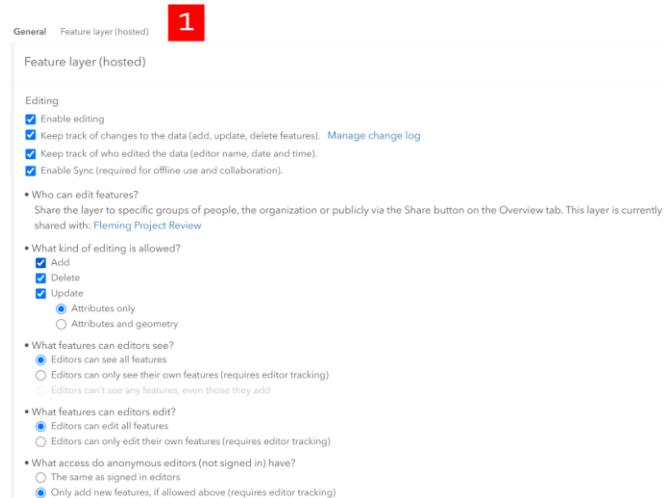


3. When the layer is shared to ArcGIS Online, the attachments also get shared. When a feature is selected in the web map, if there is an image attachment, it will appear in the pop-up.



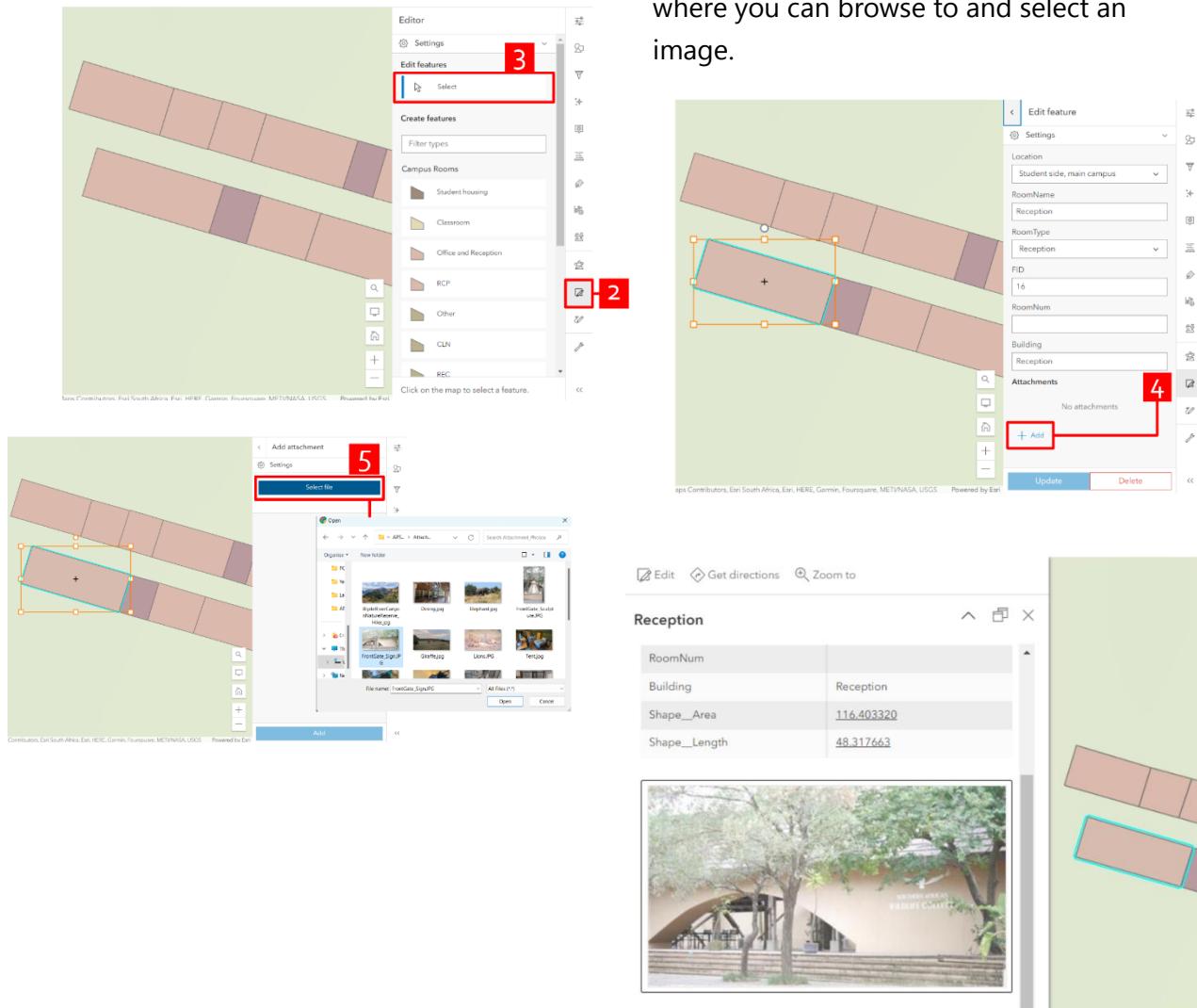
In ArcGIS Online

1. The process to attach images in ArcGIS Online is relatively the same as in ArcGIS Pro. Start by enabling editing in the Data tab of the item's page. Add a new field in the attribute table to hold the image URL for the chosen records.



The screenshot shows the "General" tab of the "Feature layer (hosted)" settings. A red box labeled "1" highlights the "Editing" section. It contains several checked checkboxes under "Enable editing": "Keep track of changes to the data (add, update, delete features)", "Keep track of who edited the data (editor name, date and time)", and "Enable Sync (required for offline use and collaboration)". Below these are sections for "Who can edit features?", "What kind of editing is allowed?", "What features can editors see?", "What features can editors edit?", and "What access do anonymous editors (not signed in) have?". Most options in these sections are also checked.

2. Next, select the Editing tab on the right-hand side and select the desired feature on the map. Once the feature is selected, the Add button brings up the computer's File Explorer, where you can browse to and select an image.



Relevant Tutorials

ArcGIS Online Documentation: [Adding attachments to features](#)

ArcGIS Online Documentation: [Enable pop-ups for image attachments.](#)

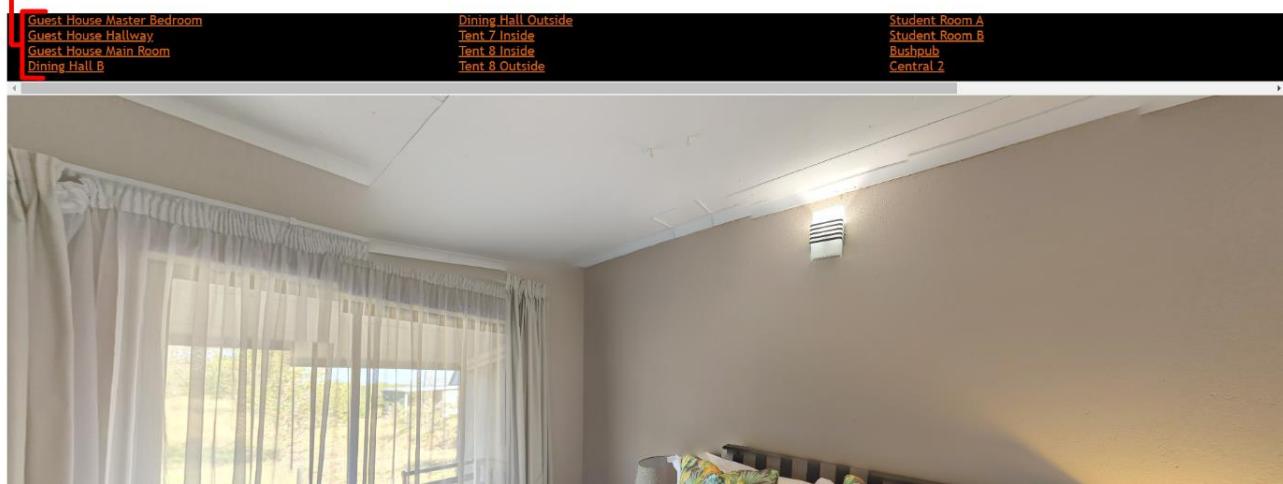
3.3 Retrieving Links for 360 Images

360 images give a deeper understanding of the project and the features within a study area. 360 images were taken around the campus to aid in giving more context to certain buildings and rooms. Below describes how to retrieve the 360 images taken of the campus.

Instructions



1. All the 360 images taken for this project have been hosted on a publicly available GitHub site. That site can be accessed at: <https://shawnmflemingc.github.io/sawc>.
2. A few of the 360 images can be seen by selecting on the different image links in the header of the page.



3. To display the individual images in full screen, it is required to add the unique image address for the desired image to the end of the main page's link. To do this, use the "Ctrl U" keyboard shortcut to see the list of the image addresses in the page's source code.

```

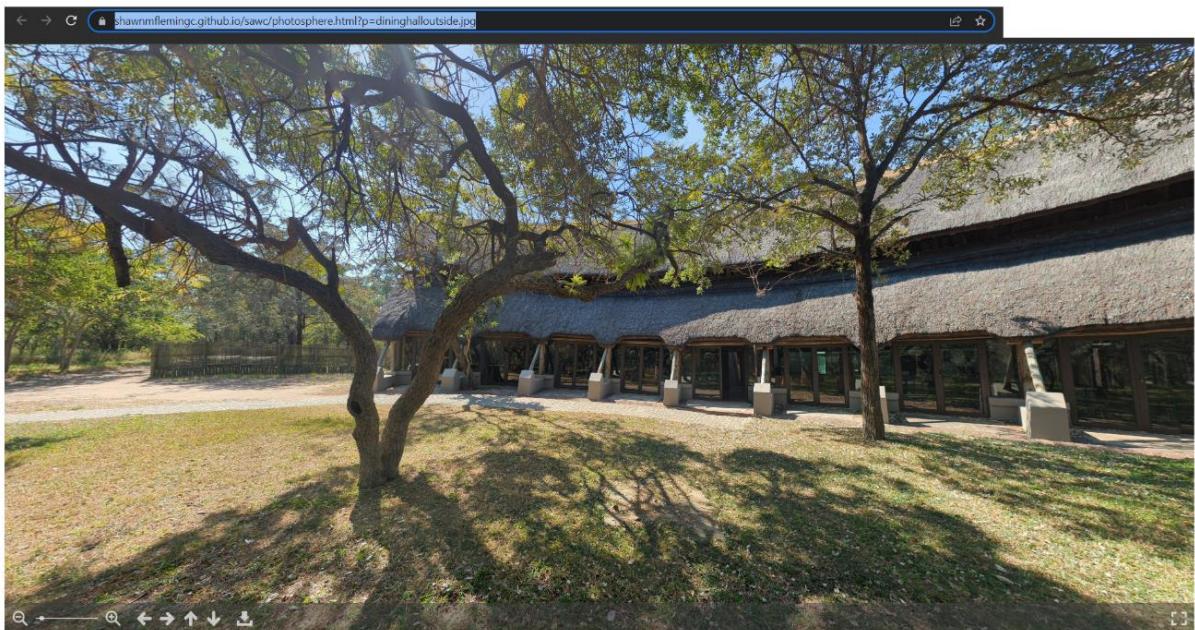
53 <div class="row-container">
54   <div class="first-row">
55     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=ghbrmaster.jpg';">Guest House Master Bedroom</a></p>
56     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=ghhallway.jpg';">Guest House Hallway</a></p>
57     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=ghmain.jpg';">Guest House Main Room</a></p>
58     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=dininghallb.jpg';">Dining Hall B</a></p>
59     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=dininghalloutside.jpg';">Dining Hall Outside</a></p>
60     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=insidetent7.jpg';">Tent 7 Inside</a></p>
61     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=insidetent8.jpg';">Tent 8 Inside</a></p>
62     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=outsidetent8.jpg';">Tent 8 Outside</a></p>
63     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=studentroomy1.jpg';">Student Room A</a></p>
64     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=studentroomy2.jpg';">Student Room B</a></p>
65     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=bushpub.jpg';">Bushpub</a></p>
66     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=central2.jpg';">Central 2</a></p>
67     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=entrance1.jpg';">Entrance 1</a></p>
68     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=field.jpg';">Soccer Field</a></p>
69     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=reception.jpg';">Reception 1</a></p>
70     <p><a href="#" onclick="document.getElementById('psframe').src = 'photosphere.html?p=reception2.jpg';">Reception 2</a></p>
71   </div>
72   <iframe id="psframe" src="photosphere.html?p=ghbrmaster.jpg" class="second-row"></iframe>
73 </div>
```

4. For example, to view the Dining Hall image in full screen, copy/ paste the unique address for this image at the end of the main page's web link, as seen below.
5. Relevant Tutorials

<https://shawnmflemingc.github.io/sawc> + <photosphere.html?p=dininghalloutside.jpg>

=

<https://shawnmflemingc.github.io/sawc/photosphere.html?p=dininghalloutside.jpg>



Relevant Tutorials

ArcGIS Online Documentation: [Understanding and accessing file paths of images in a website.](#)

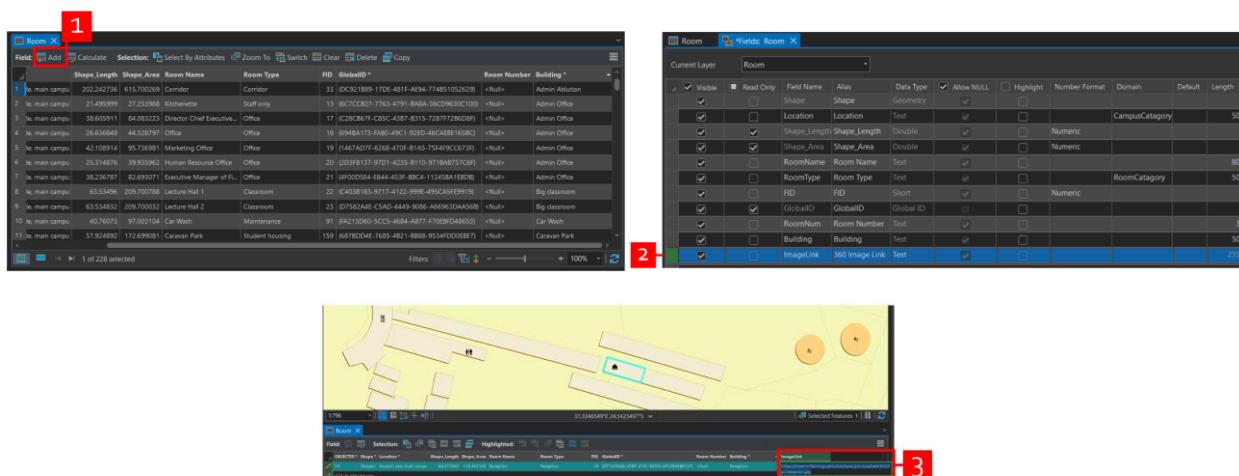
3.4 Adding 360 Images to Features

When a feature is selected in an ArcGIS Online web map, a pop-up appears with the related attributes, such as images added as attachments. Although it is not possible to add these 360 images as attachments like standard images, it is possible to add a clickable link, which opens the 360 image in a new window. Below describes how to incorporate 360 images in ArcGIS Pro and Online.

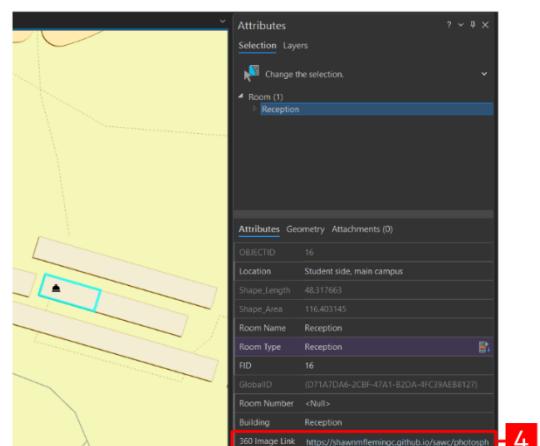
Instructions

In ArcGIS Pro

1. Open the attribute table of the layer you want to add the 360 links. Click Add Field and a field to hold the 360 image links. Copy/ Paste the URL for the 360 image you would like to display into the record of the selected feature.



2. The link can then be accessed in the attributes pane once the feature is selected, which will open a window in your browser of the full screen 360 image.



In ArcGIS Online

- Start by enabling editing in the Data tab of the item's page. Add a new field in the attribute table to hold the 360 image URL for the chosen records.

1

General Feature layer (hosted)

Feature layer (hosted)

Editing

- Enable editing
- Keep track of changes to the data (add, update, delete features). [Manage change log](#)
- Keep track of who edited the data (editor name, date and time).
- Enable Sync (required for offline use and collaboration).

• Who can edit features?

Share the layer to specific groups of people, the organization or publicly via the Share button on the Overview tab. This layer is currently shared with: Fleming Project Review

- Add
- Delete
- Update
 - Attributes only
 - Attributes and geometry

• What features can editors see?

- Editors can see all features
- Editors can only see their own features (requires editor tracking)
- Editors can't see any features, even those they add

• What features can editors edit?

- Editors can edit all features
- Editors can only edit their own features (requires editor tracking)

• What access do anonymous editors (not signed in) have?

- The same as signed in editors
- Only add new features, if allowed above (requires editor tracking)

- Copy/ Paste the full URL to the 360 image you would like to add into the feature's record (see section *Retrieving Links for 360 Images* for detailed instructions on acquiring the link). The results will give a clickable link, which will open the 360 image in a new window.

2

Campus Rooms

Room (Features: 228, Selected: 0)

Location	RoomName	RoomType	FID	GlobalID	RoomNum	Building	Shape_Area	Shape_Perimeter
Student side, main campus	Office	Office	1	2dc4e1c3a04b-401a-47a4-12c0523a105		CVD and RISE Office	34.413086	23.458164
Student side, main campus	Corridor	Corridor	2	1db10d8e-42ee-4e39-861c-d552d31c4970		CVD and RISE Office	344.1511367	122.908610
Student side, main campus	Corridor	Corridor	3	551d477-df70-4578-9e83-973f985/e5e		CVD and RISE Office	45.7236328	27.057819

Data updated: 31 May 2023, 22:18

Add Field

3

Add Field

Field Name:

Display Name:

Type:

Length:

Default Value:

4

Reception

SAWC Room TEST 116 records, 1 selected

RoomType	ImageLink	Attachments
Reception	share.html?p=reception.jpg	0
Office		0

5

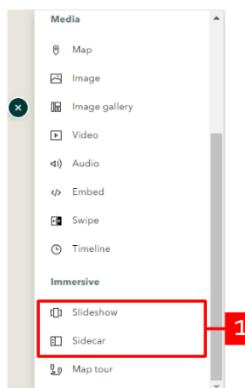
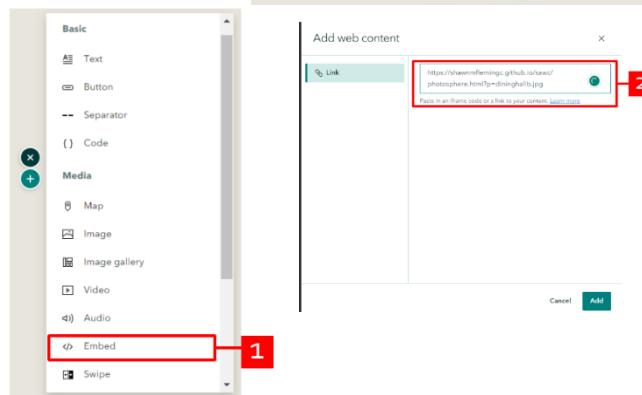


3.5 Adding 360 Images to a StoryMap

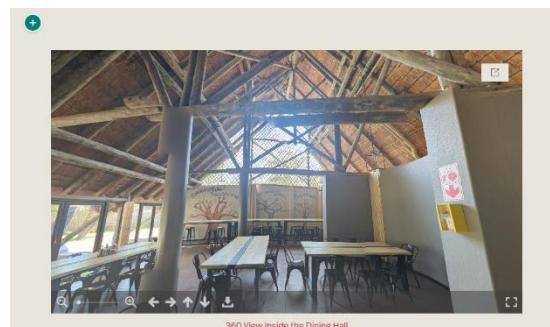
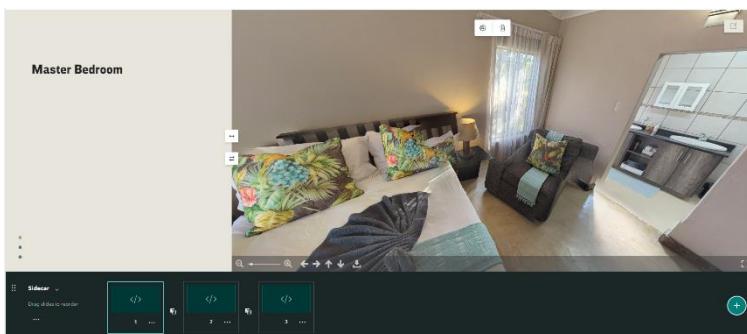
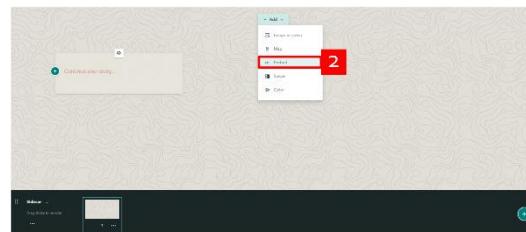
Storymaps are a great way to visually showcase a project. Adding 360 images to the StoryMap gives a more interactive and in depth understanding of the study area. Below describes how to embed a link to a 360 image in ESRI's StoryMap.

Instructions

- In StoryMaps select the Plus button to get the list of available content to add. Scroll down and select Embed. Copy/paste the URL image address of the desired 360 image (see section *Retrieving Links for 360 Images* for detailed instructions on acquiring the link).



- The 360 images can also be added to a slideshow or sidecar in StoryMaps. Select the Plus button and choose either option.



Relevant Tutorials

ArcGIS Online Documentation: [ArcGIS StoryMaps Fundamentals](#)

Chapter 4

ArcGIS Online Item Settings

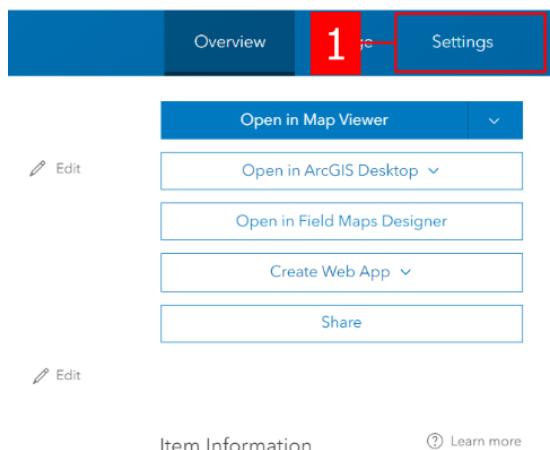
4.1 Enabling Sync for Layers in ArcGIS Online

If you want maps created in ArcGIS Online to be viewable offline, the layers included in that map need to have syncing enabled. Offline maps are especially useful in ArcGIS Field Maps and other applications that allow web maps to be downloaded. Below describes how to enable sync in ArcGIS Online.

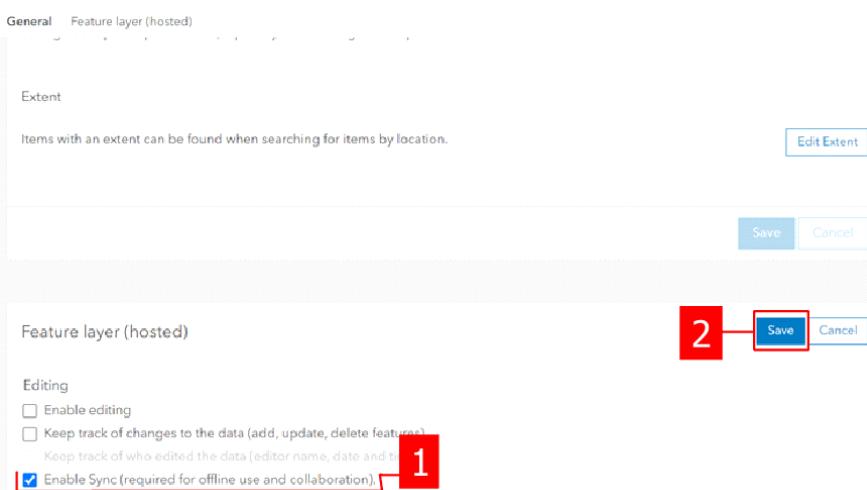
- ✓ Fire Equipment
- ✓ Emergency Assembly Point
- ✗ SAWC Zones
Sync is not enabled.

Instructions

1. In ArcGIS Online go to the layers item page, select Settings.



2. Scroll down to the Editing section, click on the box for the Enable Sync option, and hit Save button that appears to the right.



Associated Projects

QR Code for [Field Maps with Enabled Sync Features](#)



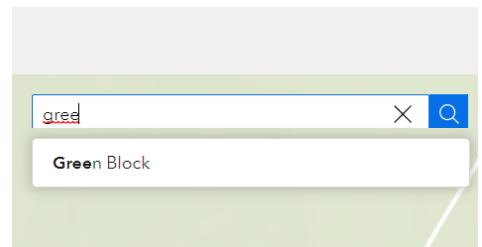
Relevant Tutorials

Upload Features to ArcGIS Online (p. 14)

ArcGIS Online Documentation: [Manage Hosted Feature Layers](#)

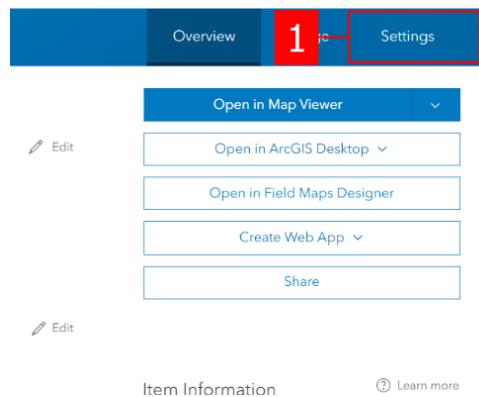
4.2 Layer Searchability in ArcGIS Applications

Enabling layer searchability allows features to be searched for in maps within ArcGIS applications. Layer searchability is enabled for web maps. For instance, the Campus Rooms layer was made searchable in several web maps so that users can search for room or building names in the search bar and find them on the map. Below describes how to enable layer searchability in a web map in ArcGIS Online.

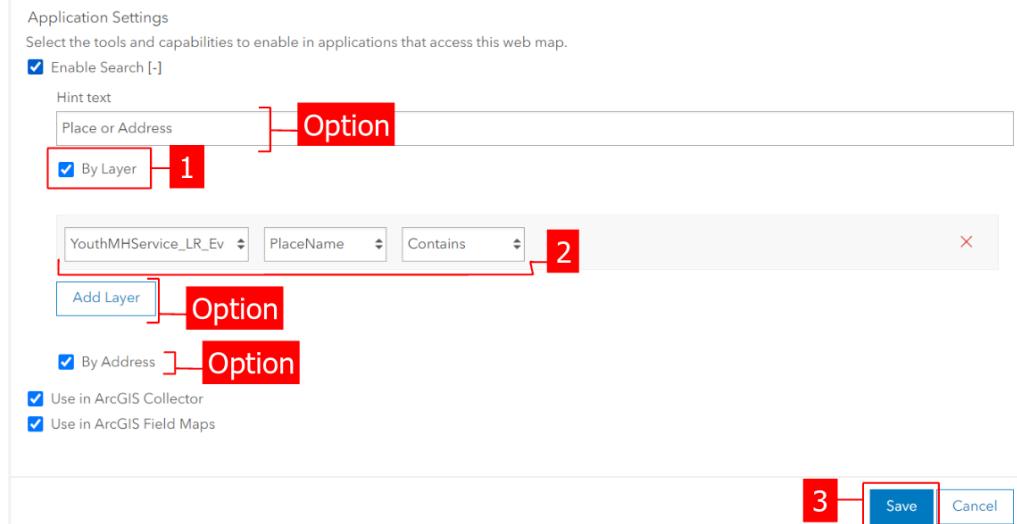


Instructions

1. In ArcGIS Online, go to the web maps item page and select Settings.



2. Scroll down to Application Settings. Check the box for By Layer, and drop-down menus will appear. The first is to select the layer, the next is to specify the field, and last selection is either Contains or Equals. Contains is generally the better option. The Hint Text can be changed to something more suited to the specific layer, like Search for Building Name. Add Layer can be used to add additional layers that can be searched for, or additional fields from the original layer. The By Address option can be switched off, which is preferable if you want the searching capabilities to specifically be for layers, and not for addresses.
3. Finally, select Save. The layer(s) will now be searchable in applications like ArcGIS Field Maps.



Associated Projects

QR Code for [Mobile Map in Field Maps](#)



[Campus Navigation Maps in Experience Builder](#)

Relevant Tutorials

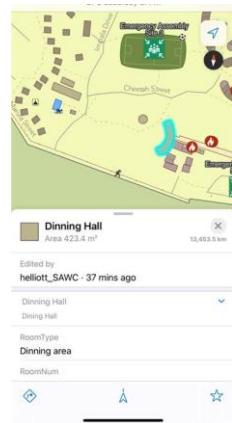
ArcGIS Online Documentation: [Configure Feature and Table Search for Maps](#)

Chapter 5

Specific to Field Maps

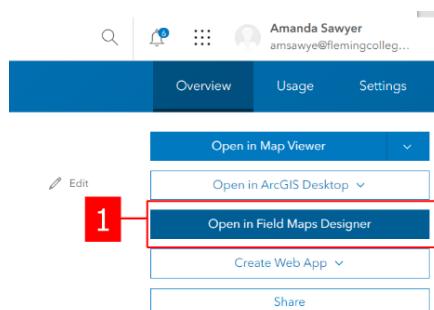
5.1 Non-Editable Maps in Field Maps

ArcGIS Field Maps is typically used for editing data in the field, however, *Field Maps* can be used to view maps with un-editable features. *Field Maps* is also extremely useful for viewing maps offline. Below describes how to create a non-editable map with *ArcGIS Online*.



Instructions

- After a web map is created in ArcGIS Online, go to its item page and select Open in Field Maps Designer.



- Select the Forms option and ensure that all the layer names are greyed out with this symbol next to them. If any layer does not look like this – go to that layer's item page on ArcGIS Online, go to settings and ensure that Enable Editing is turned off.

Forms

Find content

Add layers

Campus Zone

SAWC Zone

Do Not Enter Points

Assembly Points Public View

Fire Extinguisher Public View

Campus Rooms

Campus Fence Line

Overview Data Visualization Settings

Feature layer (hosted)

Editing

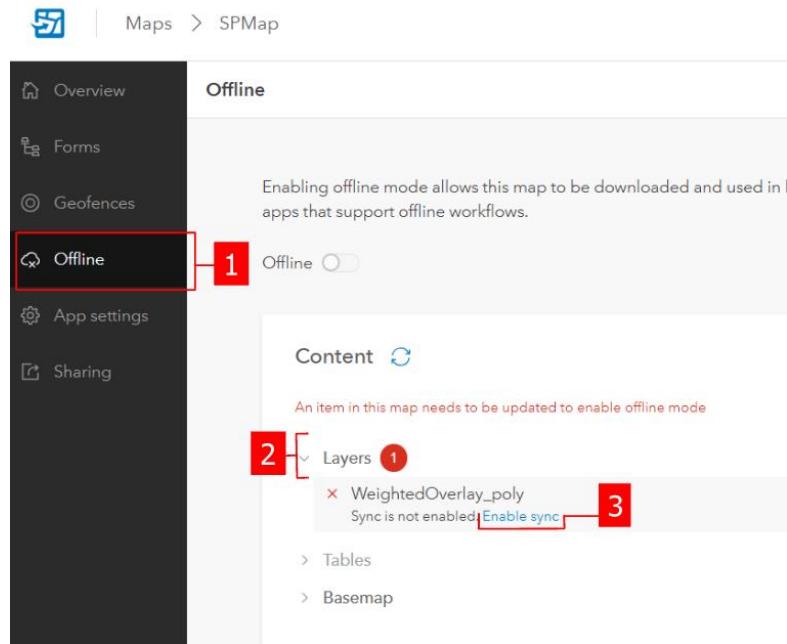
Enable editing

Keep track of changes to the data (add, update, delete features). [Manage change log](#)

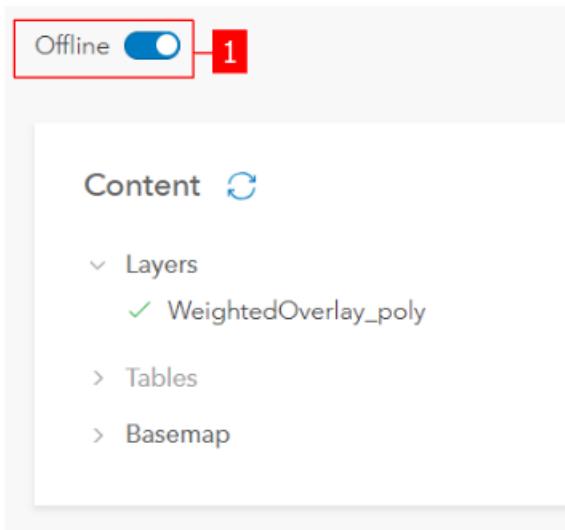
Keep track of who edited the data (editor name, date and time).

Enable Sync (required for offline use and collaboration).

- Select the Offline option, open the Layers drop-down menu, and select Enable Sync on any layers that have a red X next to them. Note you must be the owner of the layer to have this option.

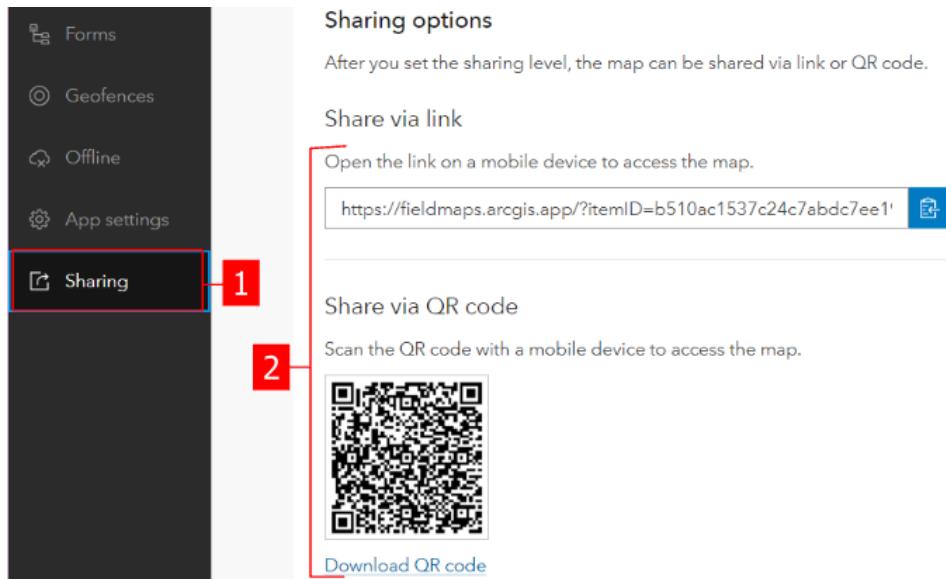


- A green check will be next to each of the layers that now have sync and enabled. Toggle the Offline option on.



- Map areas can also be set so that the map is downloadable on the mobile phone app. See instructions *Setting Up Offline Extents for Field Maps* (p. 46).

6. The map is now ready to be viewed in the Field Maps mobile application. Select the Sharing option and either use the URL or the QR code to open the map on your mobile device.



Associated Projects

QR Code for [Mobile Map in Field Maps](#)

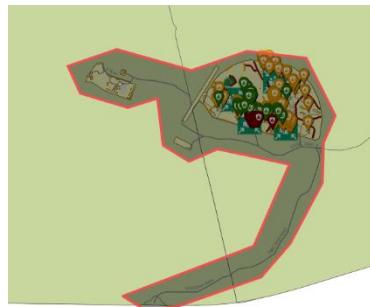


Relevant Tutorials

Setting Up Offline Extents for Field Maps (p. 46)

5.2 Setting Up Offline Extents for Field Maps

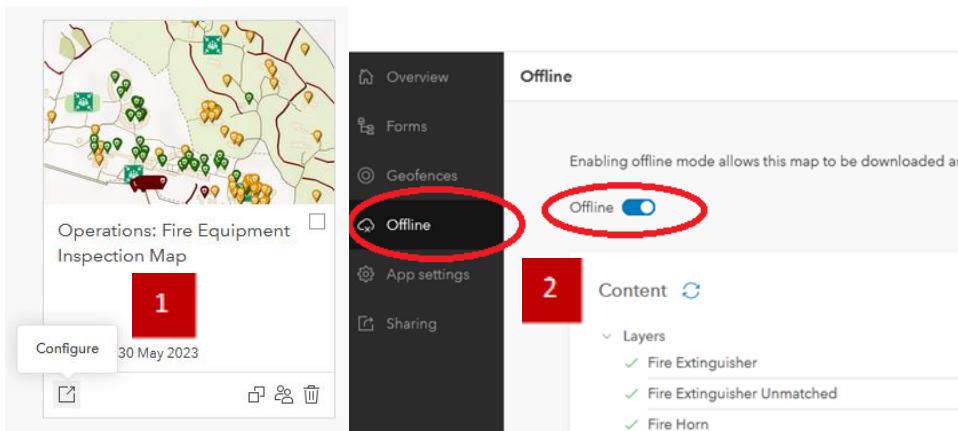
An offline extent allows users of the map to download a map when they have access to the internet, so they can keep using the map while there is no service available. Updates made to the map on the phone or in ArcGIS Online (AGOL) will sync once the user has access to the network again.



Instructions

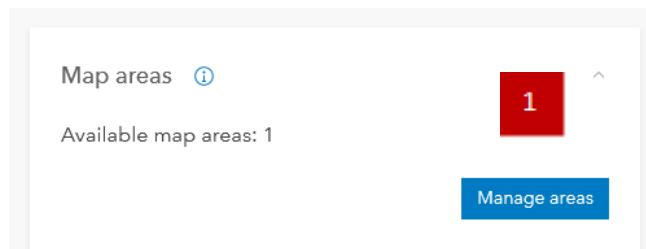
Setting a Map Extent with Field Maps

1. In ArcGIS Field Maps, select Configure on the web map of interest. Select the Offline tab in the left side bar and ensure that Offline is enabled (more details on enabling feature sync on page 38).

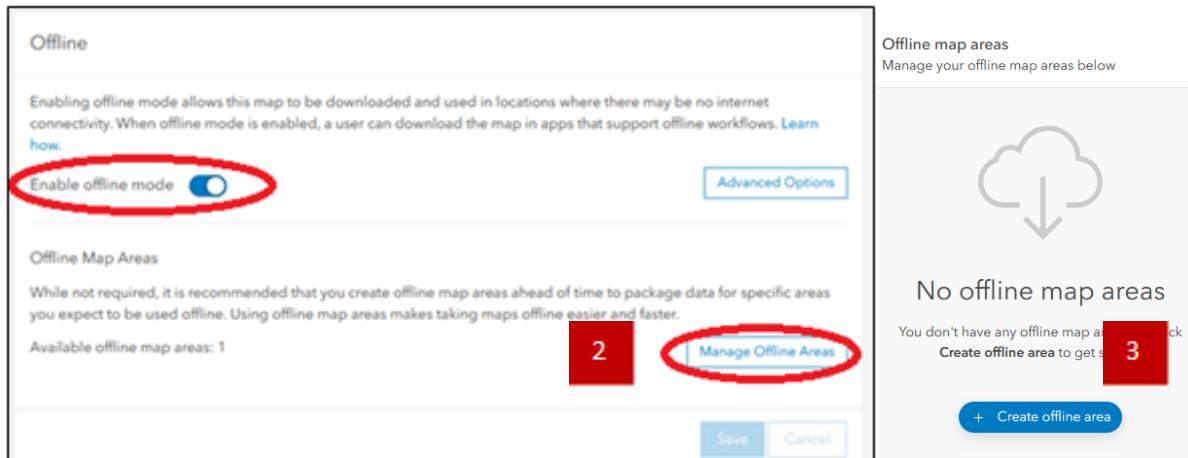


The screenshot shows the ArcGIS Field Maps interface. On the left, there is a map titled "Operations: Fire Equipment Inspection Map". Below the map, there are buttons for "Configure" (highlighted with a red box labeled "1") and "30 May 2023". To the right, a sidebar menu lists "Overview", "Forms", "Geofences", "Offline" (highlighted with a red box labeled "1"), "App settings", and "Sharing". The "Offline" item is also circled with a red circle. The main content area is titled "Offline" and contains the text "Enabling offline mode allows this map to be downloaded and used when there is no internet connection." Below this, there is a "Content" section with a "Layers" list containing "Fire Extinguisher", "Fire Extinguisher Unmatched", and "Fire Horn", all of which are checked.

2. Expand Map Areas then select Manage areas. Ensure Enable Offline Mode is toggled on and select Manage Offline Areas, then on the next screen that appears, select Create Offline Area.



The screenshot shows the "Map areas" management screen. At the top, it says "Map areas" with an info icon. Below that, it says "Available map areas: 1". At the bottom, there is a blue button labeled "Manage areas" (highlighted with a red box labeled "1").



The left screenshot shows the 'Offline' settings page. It includes a toggle switch for 'Enable offline mode' (circled in red), a section for 'Offline Map Areas' with a note about creating areas ahead of time, and a button for 'Manage Offline Areas'. The right screenshot shows the 'Offline map areas' management interface, which is currently empty ('No offline map areas'). It features a cloud icon with a download arrow, a 'Create offline area' button, and a 'Create offline area to get started' message.

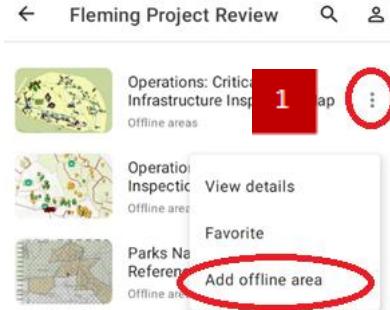
3. Use the Sketch Polygon Map Area or Sketch Rectangle Map Area to map the offline extent. To preserve data, the extent should be as small as possible but as large as necessary for your mapping purposes. Save, and allow the offline extent to package. The offline extent of the map should now be available for download on a mobile device, in the Field Maps application, for those who have permission to access.



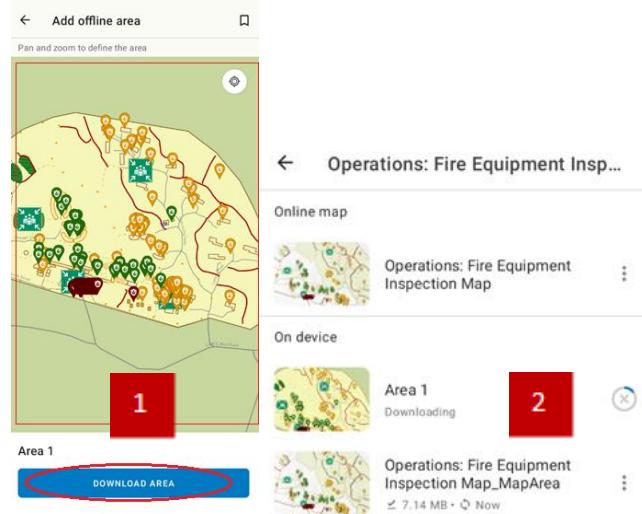
Note: Adding or replacing layers on a web map can occasionally cause errors downloading the offline map extent or syncing changes. This can be resolved by recreating the offline extent.

Setting an Offline Extent in the Field Maps Mobile Application

- On Field Maps mobile app, click the options ellipses on the web map that you would like to add an offline extent to, then select Add Offline Area.



- Zoom and shift to select the desired extent on the phone, then click Download Area.



Associated Projects

QR Code for [Downloadable Mobile Map in Field Maps](#)



Relevant Tutorials

Non-Editable Maps in Field Maps (p. 43)

ArcGIS Online Documentation: [Take web maps offline](#)