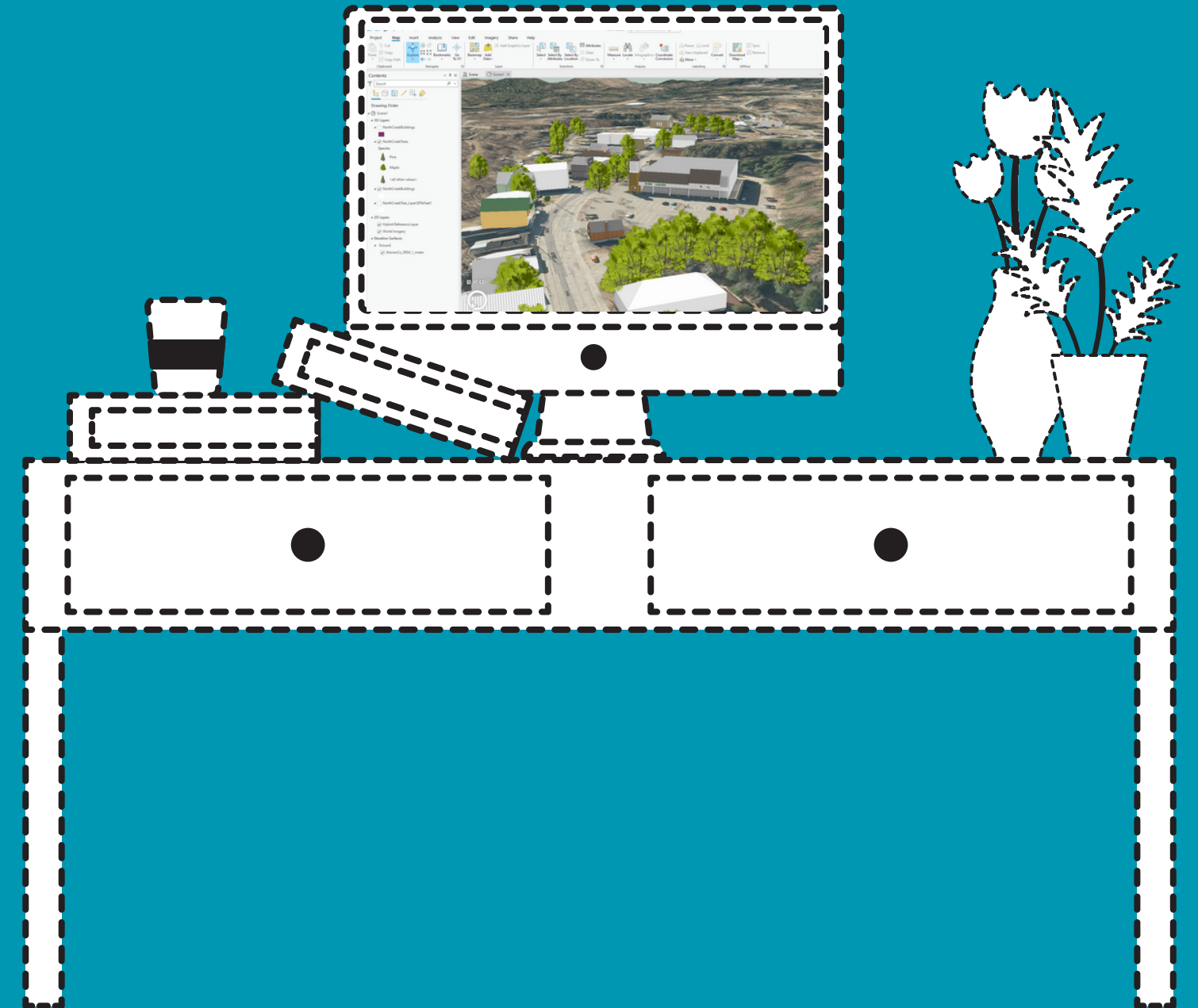


2024 Water Quality Symposium

ArcGIS Pro 101

Presented by:
Sara Frankenfeld
Warren County GIS

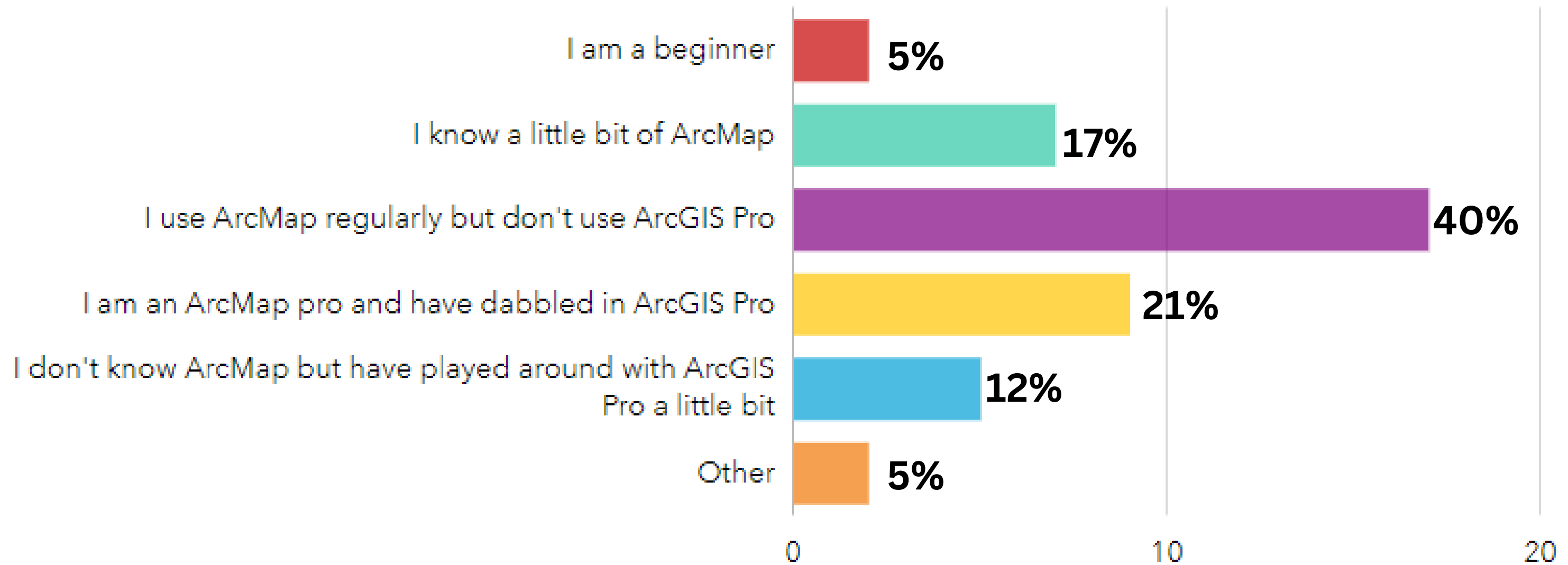


data for demos:

https://public.warrencountyny.gov/gis/_trainingclass/

Who We Are

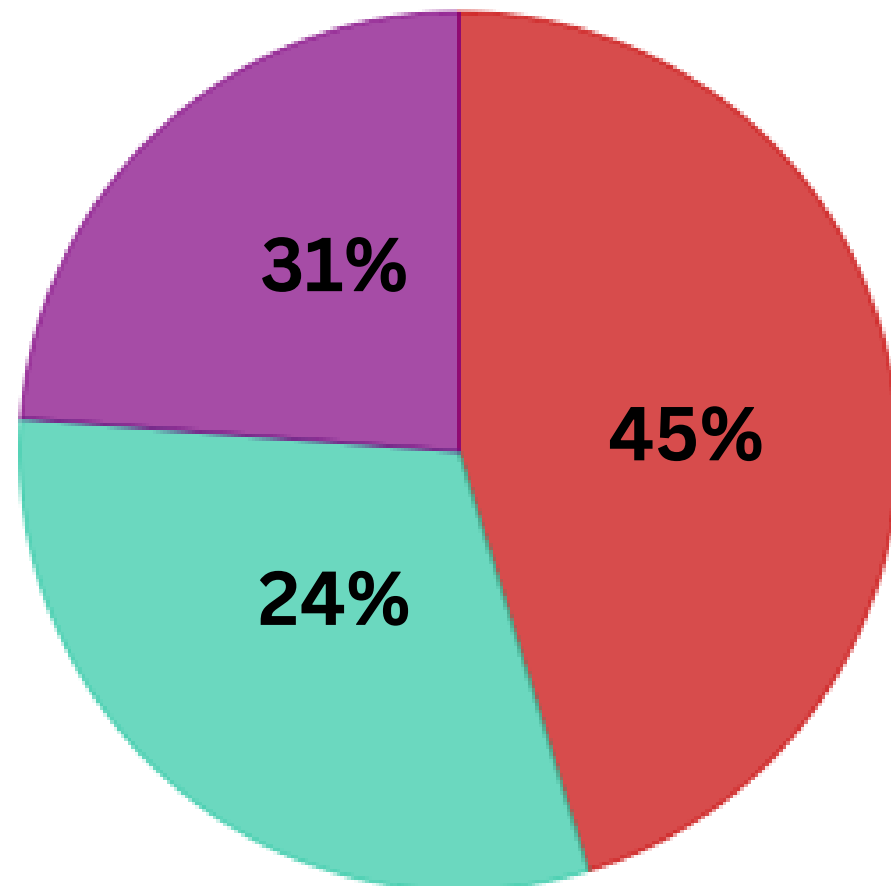
What's your ESRI software experience?



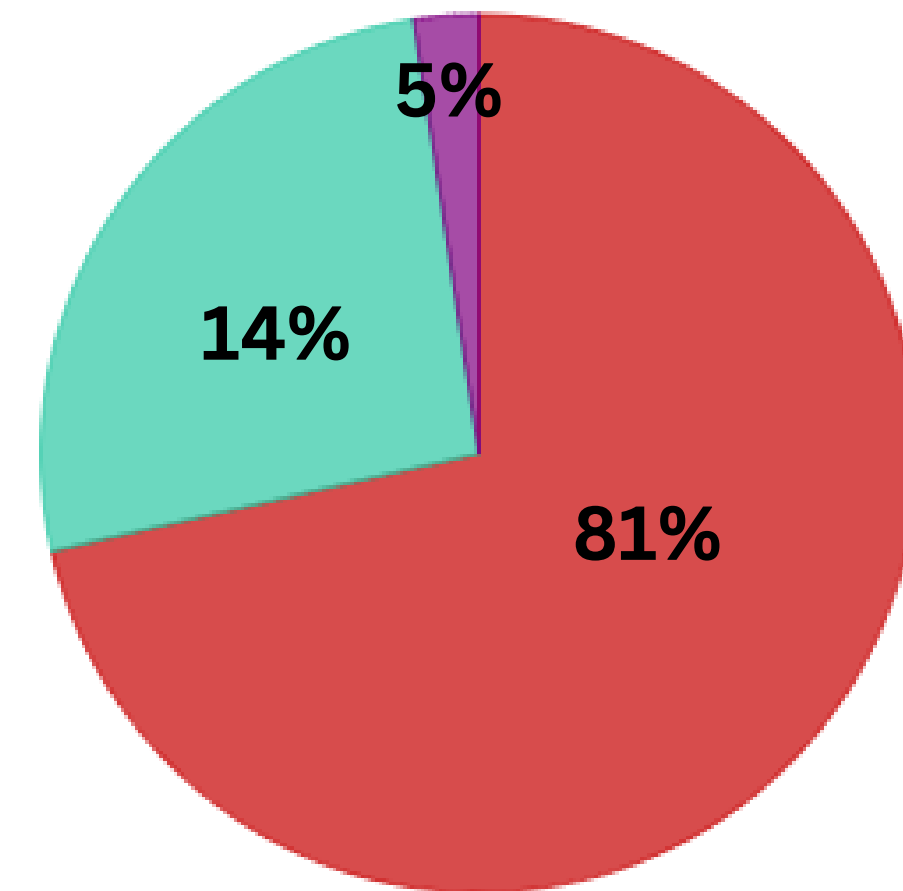
Who We Are

Do you want to...

...Get a basic overview of GIS?



...Become more familiar with the ArcGIS Pro interface - add data, make a map, etc?

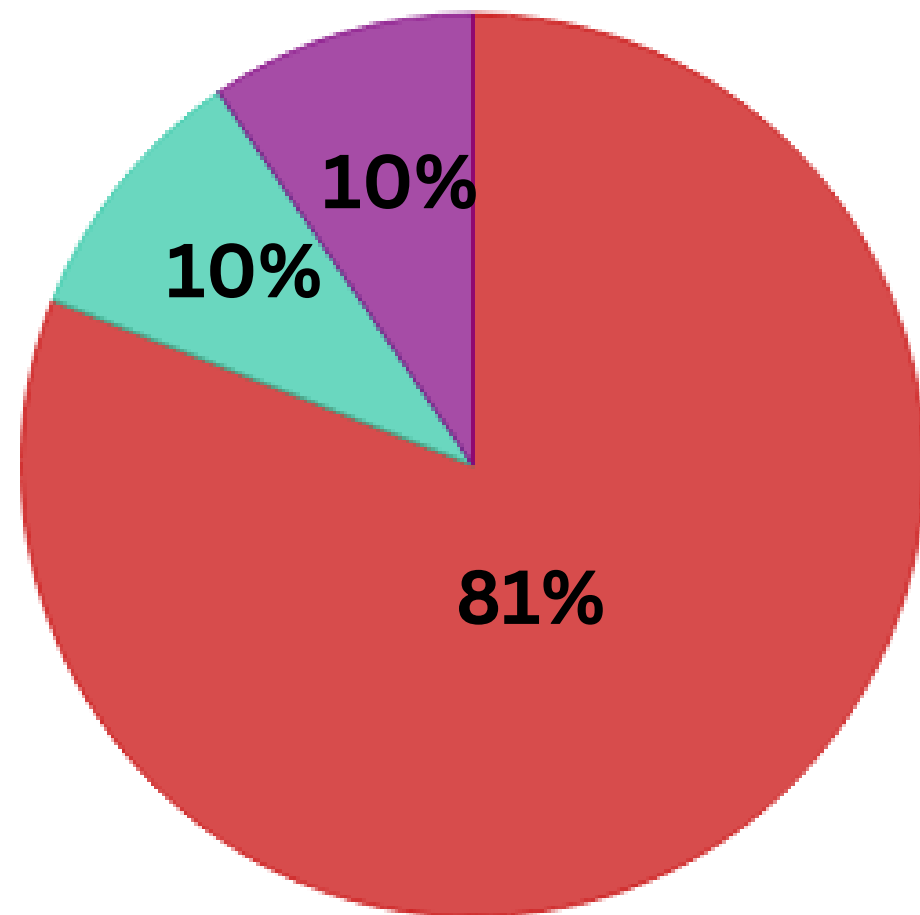


- Yes! Please cover this
- Meh
- I don't need this

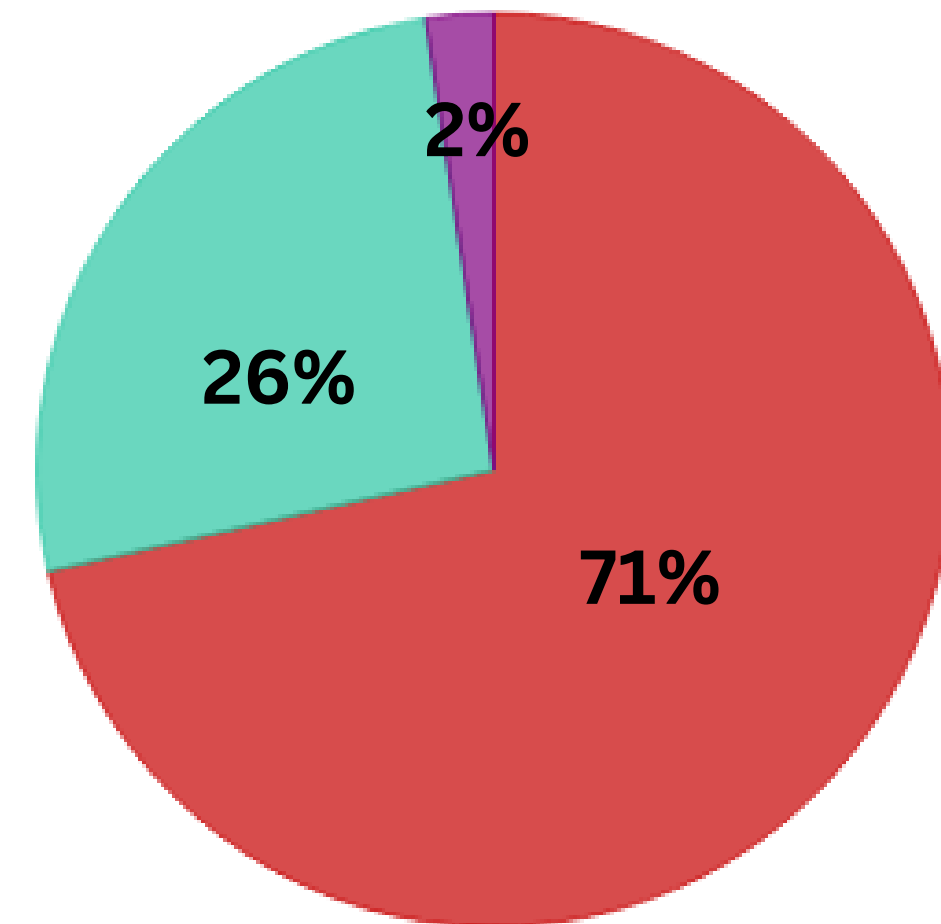
Who We Are

Do you want to...

...Learn how to transition my projects from ArcMap to ArcGIS Pro?



...Learn how ArcGIS Pro integrates with ArcGIS Online?



- Yes! Please cover t
- Meh
- I don't need this

Course **Outline**



Getting Started

ArcGIS Pro Interface

Finding and Adding Data

Creating New Data

Making a Map

Working with Tables

Migrating from ArcMap

Using Field Collected Data

Questions

Getting Started



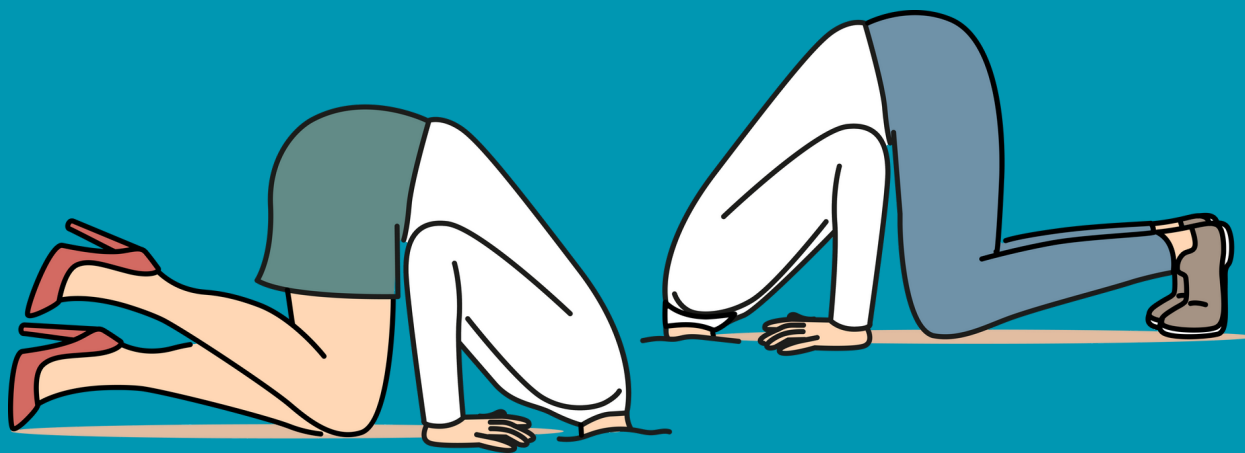
START

Q. Sounds like ArcMap is going away and we will need to learn ArcGIS Pro moving forward. We're currently using ArcMap in our office on a daily basis.



Yes! ArcMap is in Mature support as of this month (March 2024) and will be fully retired in March of 2026.

Q: How do I get started transitioning from ArcMap to ArcPro? It's time for us to rip off the band-aid and make the switch at our office.



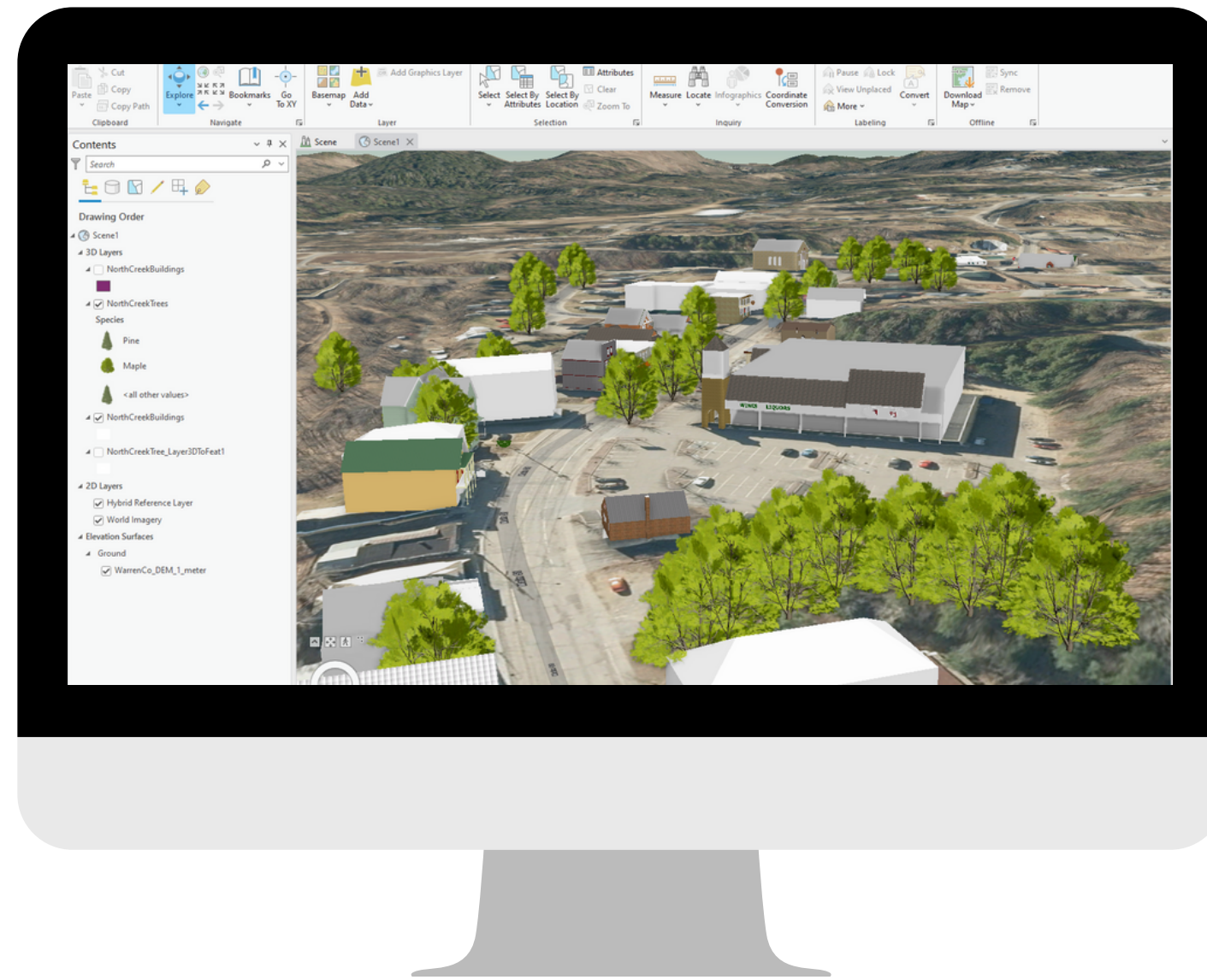
Take a free MOOC on a topic of interest Cartography class starting 4/3

Make yourself do simple tasks in ArcGIS Pro

Give yourself an amount of time to spend using Pro each day (like an hour)

Make yourself use **only ArcGIS Pro one day a week**

Q: Computer requirements for handling the GIS environment at workable pace?



2-10 core CPU
8-64GB RAM
4GB graphics memory
DirectX11 or 12
1080p screen res
x64 platform

ESRI's specs

what I have:

Intel Core i7-10700 CPU @ 2.90 GHz - 8 cores

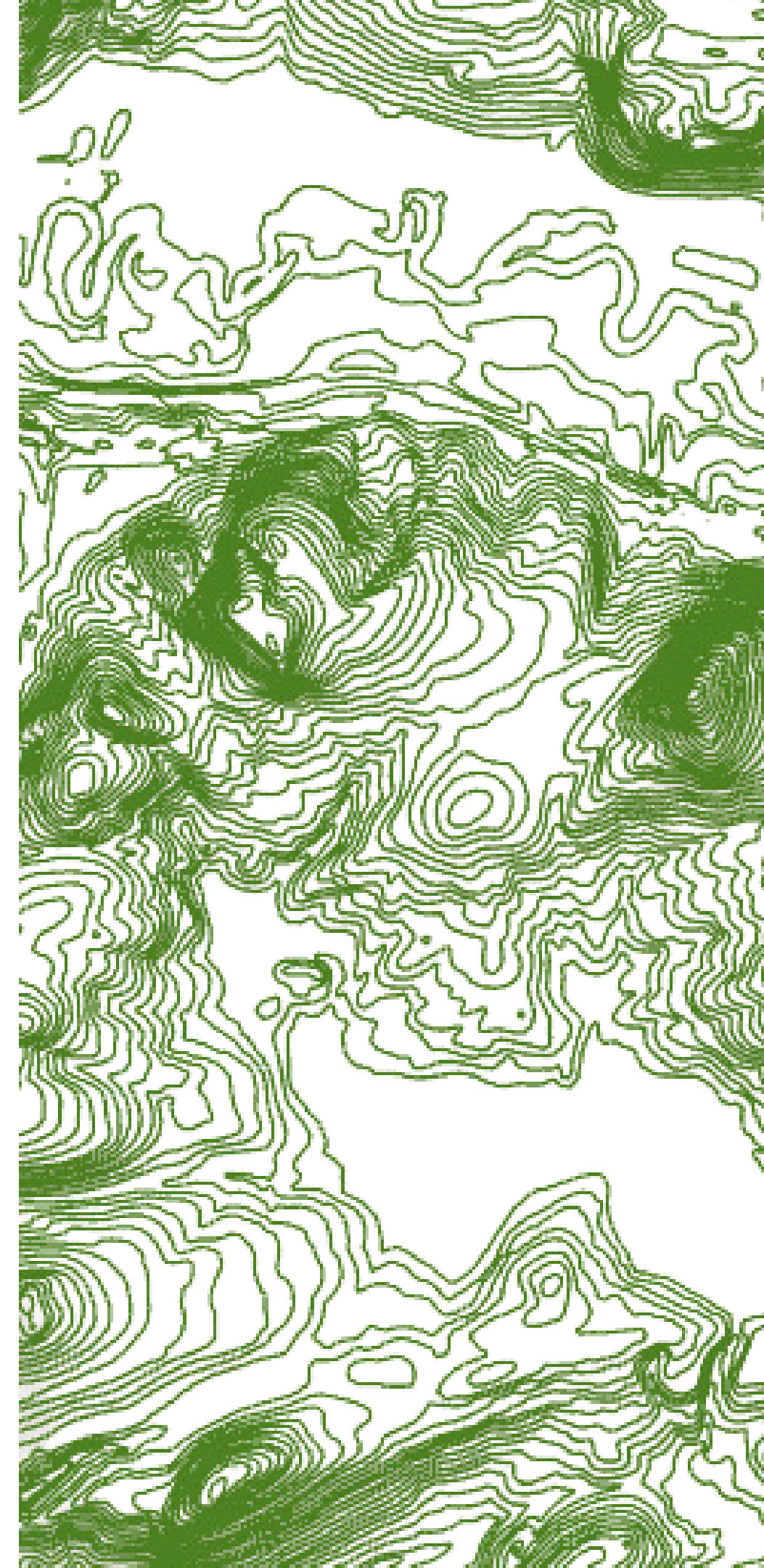
32 GB RAM

Intel UHD Graphics 630

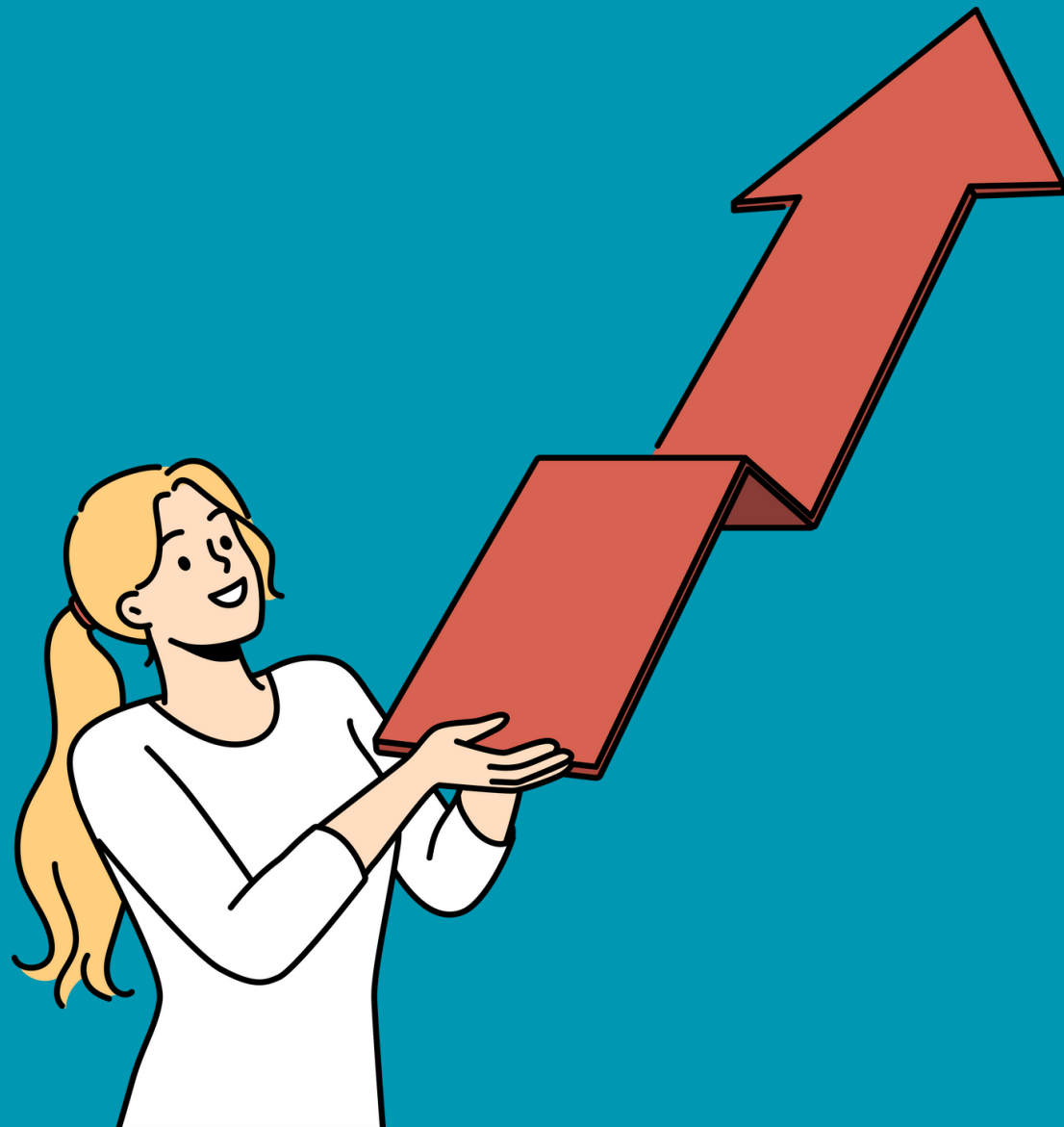
minimum specs should perform fine for all but 3D

What can you do with ArcGIS Pro?

- Create 2D and 3D Maps
- Perform spatial analysis
- Integrate and manage data
- Access, publish and share maps with your organization and online
- Edit data
- Automate workflows
- Create high quality maps for print
- Analyze imagery
- Network analysis
- 3D modeling



*Q: What are your
perceived
improvements over
ArcMap?*



- **MUCH better cartography and graphic options**
- **Fully integrated with ArcGIS Online - you will be surprised how much you like and use ArcGIS Online!**
- **Tables are easier once you get the hang of them - you can delete multiple fields, rename fields, etc.**
- **Multiple layouts and maps are great**
- **Substantially faster**

Q: What is a lesson you learned the hard way or something that was a big hurdle to cross when you were first getting set up with ArcPro?



It's a BIG change. Some things are the same, but in general, the interface is very different. Tools are in all different spots and are context sensitive. We are only going to scratch the surface today - take advantage of classes in the ESRI Academy.

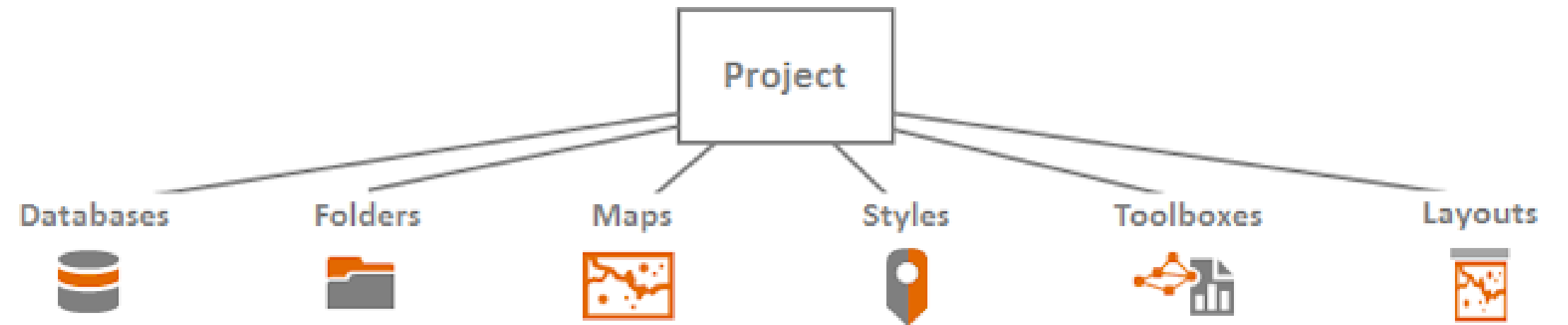
Allow yourself more time than you think you will need.

Also, don't try to transition every project over from ArcMap - in many cases, it's faster just to start from scratch with a new project. You can still use all the data you created in ArcMap in ArcGIS Pro, so you're not losing data, just project setups and layouts.

Interface



Projects in ArcGIS Pro



By default, an ArcGIS Pro project's structure is designed to contain all the project's data efficiently.

- Project has an *.aprx extension
- It contains all maps, scenes, layouts (NOT data)
- Connects to a default geodatabase - it will create a new one
- Creates a new folder

ArcGIS Pro Interface Overview

6 Tabs 1 Ribbon 2 Map View

The screenshot shows the ArcGIS Pro interface with the following components:

- 1 Ribbon:** The top horizontal bar containing toolbars for Project, Map, Insert, Analysis, View, Edit, Imagery, and Share. It is divided into tabs like Feature Layer, Labeling, Data, and Linear Referencing.
- 2 Map View:** The central map area displaying a network of bus routes in various colors (red, green, blue) over a light gray base map.
- 3 Contents Pane:** A vertical pane on the left showing the 'Drawing Order' and a list of layers including 'Bus Routes'. It includes a legend for 'Bus Routes' with types like City Connector, Ferry, Metro Line, and Suburban Link.
- 4 Table View:** A table at the bottom showing the data for the selected 'Bus Routes' layer. The table has columns for OBJECTID, Shape, RouteNo, RouteName, Destination, RouteId, Direction, Schedule, and Status.
- 5 Catalog Pane:** A vertical pane on the right showing the project's catalog, including folders like 'GpMessages', 'p12', and 'p20', and a 'Locations' folder.

OBJECTID	Shape	RouteNo	RouteName	Destination	RouteId	Direction	Schedule	Status
1	Polyline M	17	Bynder/Huntbury	Bynder via City	154	Northbound	Active	Primary
2	Polyline M	17	Bynder/Huntbury	Huntbury via City	158	Southbound	Active	Primary
3	Polyline M	28	Papanui/lyttelton	lyttelton via Cranford St	110	Southbound	Active	Primary
4	Polyline M	28	Papanui/lyttelton	Papanui via City	109	Northbound	Active	Primary
5	Polyline M	29	Airport-City via Fendalton	Airport via Fendalton	141	Outbound	Active	Primary
6	Polyline M	29	Airport-City via Fendalton	City via Fendalton	139	Inbound	Active	Primary
7	Polyline M	44	Shirley	City & Polytech	137	Inbound	Active	Primary
8	Polyline M	44	Shirley	Shirley & Dallington	135	Outbound	Active	Primary
9	Polyline M	60	Hillmorton/Southshore	Hillmorton via City	130	Westbound	Active	Primary

3 Contents Pane

4 Table View

5 Catalog Pane

Key Components of the Interface: Tabs

Starting **Tab**s include:
Project, Map, Insert,
Analysis, View, Share, Help.

Additional tabs appear
depending on what you're
doing.

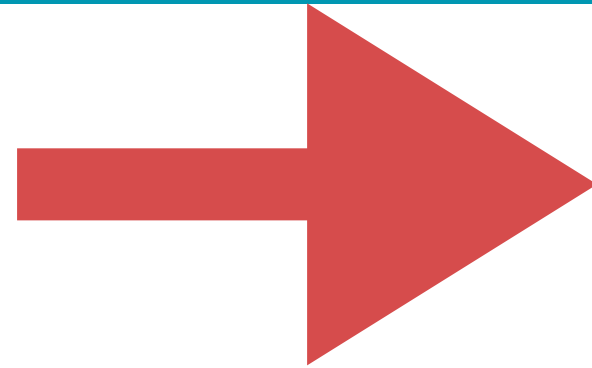
Clicking on a tab **changes the
tools**. Similar to MS Office
and other Windows
programs



The screenshot displays a GIS application window titled 'WarrenCountyBasemap'. The interface includes a menu bar with 'Project', 'Map', 'Insert', 'Analysis', 'View', 'Edit', 'Imagery', 'Share', and 'Help'. A 'Table' tab is active, showing a data table with columns for OBJECTID, Shape, LeftFrom, LeftTo, RightFrom, RightTo, PreDirectional, StreetName, PostType, PostTypeSuffix, PostDirectional, LeftVenue, RightVenue, and LeftZI. The map area shows an aerial view of a road network with overlaid parcel boundaries. A 'Contents' panel on the left lists layers such as 'Map', 'anno_200', 'anno_50', 'anno_100', 'anno_400', 'AddressPoints', 'Great Lot Lines', 'roads', 'LGPCParcelUpdate2023', 'wc_parcel', 'zipcodes2016', 'electiondistricts2023', and 'World Imagery'. A 'Catalog' panel on the right shows a project structure with folders for 'Maps', 'Toolboxes', 'Databases', 'Layouts', 'Styles', 'Folders', and 'Locators'. The status bar at the bottom indicates '2 of 7,594 selected' and a scale of 100%.

OBJECTID	Shape	LeftFrom	LeftTo	RightFrom	RightTo	PreDirectional	StreetName	PostType	PostTypeSuffix	PostDirectional	LeftVenue	RightVenue	LeftZI	
4526	3675	Polyline	1	43	2	44	<Null>	MARTINDALE	RD	<Null>	<Null>	QUEENSBURY	QUEENSBURY	12845
4527	2210	Polyline	1	5	2	6	<Null>	MARTINS	LN	<Null>	<Null>	HAGUE	HAGUE	12836
4528	2404	Polyline	7	9	8	18	<Null>	MARTINS	LN	<Null>	<Null>	HAGUE	HAGUE	12836
4529	3629	Polyline	1	11	2	12	<Null>	MARY	LN	<Null>	<Null>	QUEENSBURY	QUEENSBURY	12845

Key Components of the Interface: Ribbon



Ribbon displays tools based on which tab is selected and also the state of the application. More context sensitive than ArcMap. Can be customized.

The screenshot displays the ArcGIS interface with the following components:

- Ribbon:** The top ribbon is divided into tabs: Project, Map, Insert, Analysis, View, Edit, Imagery, Share, and Help. The 'Map' tab is active, showing sub-tabs for Clipboard, Navigate, Layer, Selection, Inquiry, Labeling, and Offline. Each sub-tab contains various tool icons.
- Contents Panel:** Located on the left, it shows a list of layers including 'Map', 'anno_200', 'anno_50', 'anno_100', 'anno_400', 'AddressPoints', 'Great Lot Lines', 'roads', 'LGPCParcelUpdate2023', 'wc_parcel', 'zipcodes2016', 'electiondistricts2023', and 'World Imagery'. The 'roads' layer is currently selected.
- Map View:** The central area shows an aerial map with overlaid road data. A road labeled 'State Rte 9' is highlighted in red.
- Table View:** At the bottom, a table displays the attributes of the selected road features. The table has columns for OBJECTID, Shape, LeftFrom, LeftTo, RightFrom, RightTo, PreDirectional, StreetName, PostType, PostTypeSuffix, PostDirectional, LeftVenue, RightVenue, and LeftZ.

OBJECTID	Shape	LeftFrom	LeftTo	RightFrom	RightTo	PreDirectional	StreetName	PostType	PostTypeSuffix	PostDirectional	LeftVenue	RightVenue	LeftZ
4526	Polyline	1	43	2	44	<Null>	MARTINDALE	RD	<Null>	<Null>	QUEENSBURY	QUEENSBURY	12845
4527	Polyline	1	5	2	6		MARTINS	LN	<Null>		HAGUE	HAGUE	12836
4528	Polyline	7	9	8	18	<Null>	MARTINS	LN	<Null>	<Null>	HAGUE	HAGUE	12836
4529	Polyline	1	11	2	12	<Null>	MARY	LN	<Null>	<Null>	QUEENSBURY	QUEENSBURY	12845

Key Components of the Interface: Views

Map view

Scene view

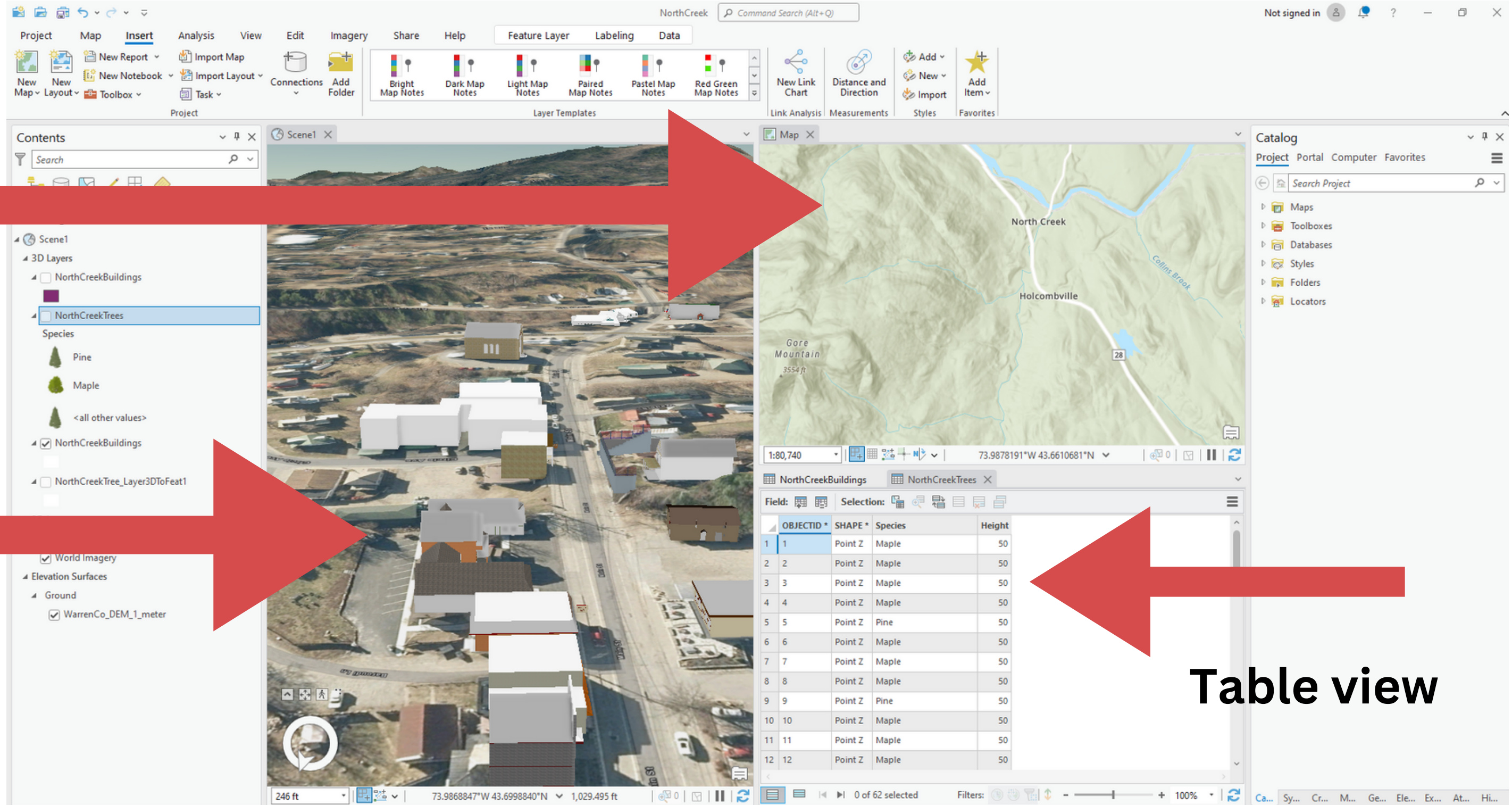
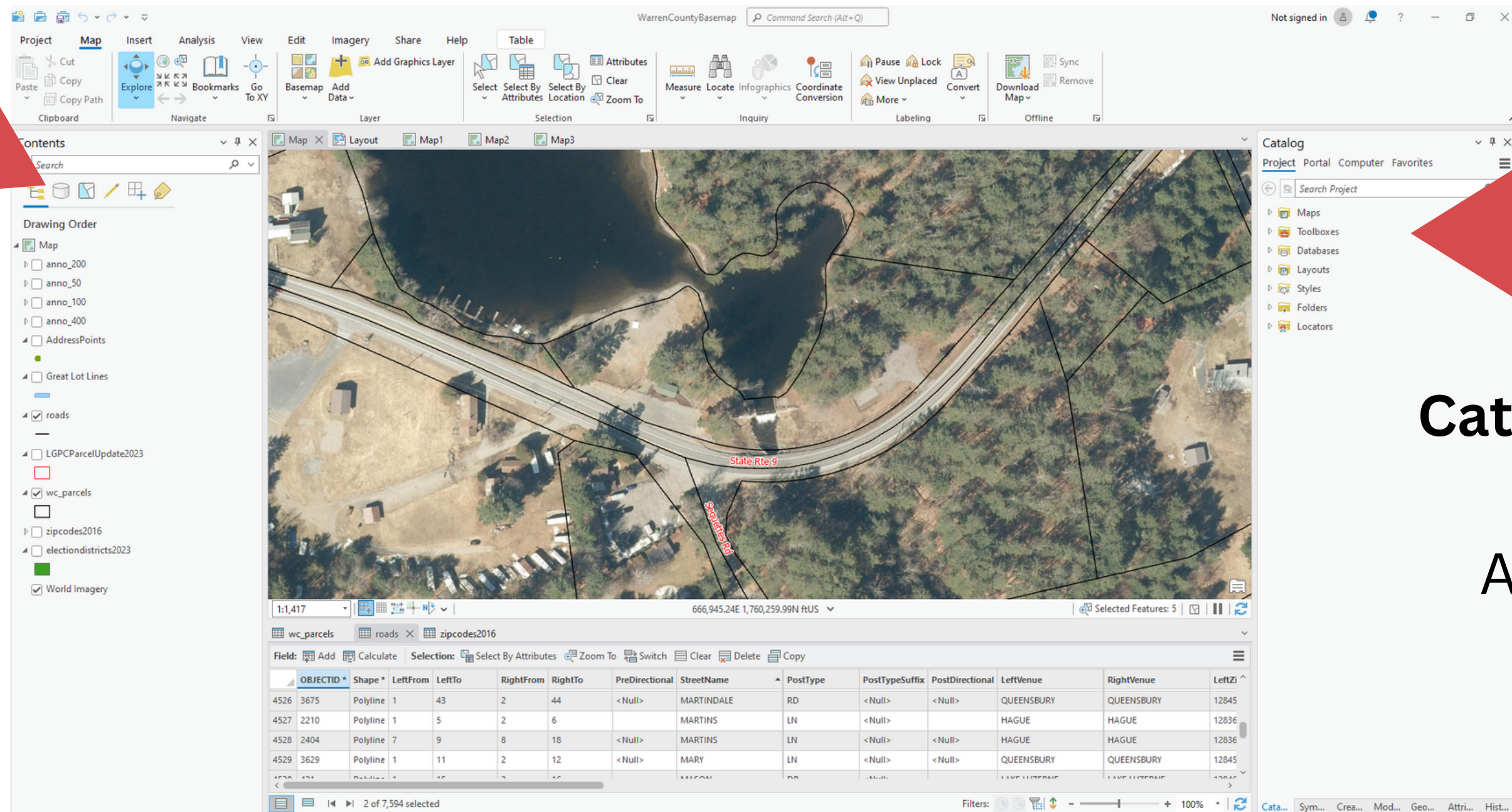


Table view

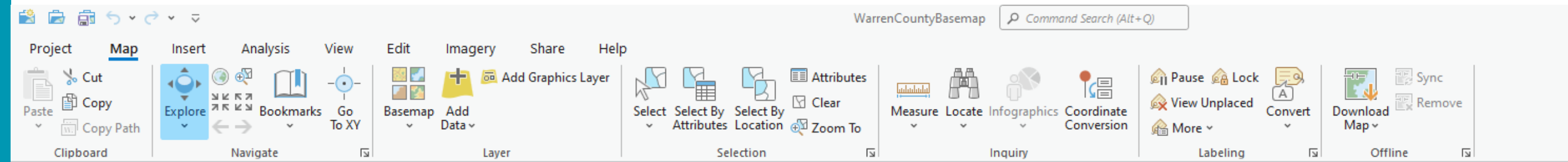
Key Components of the Interface: Panes

Contents Pane displays items related to the active view, which can be a map, scene or layout



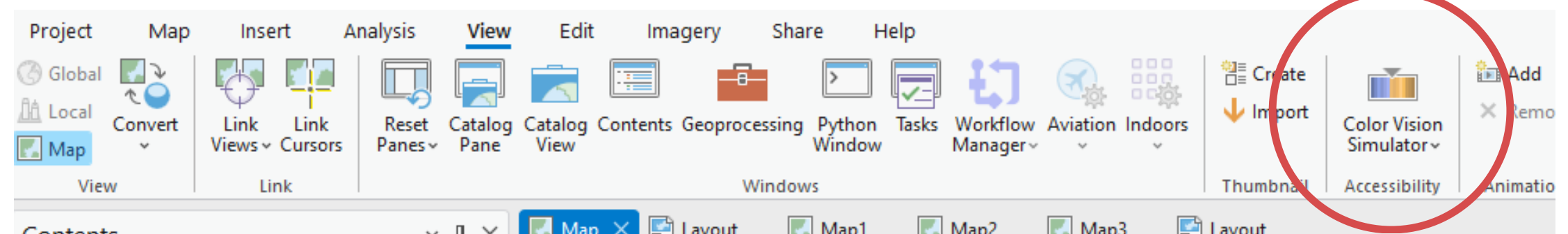
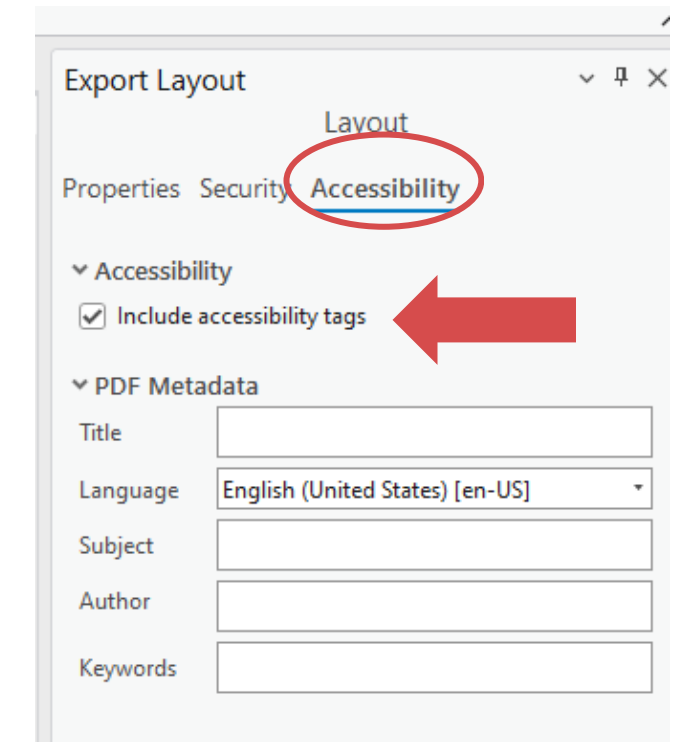
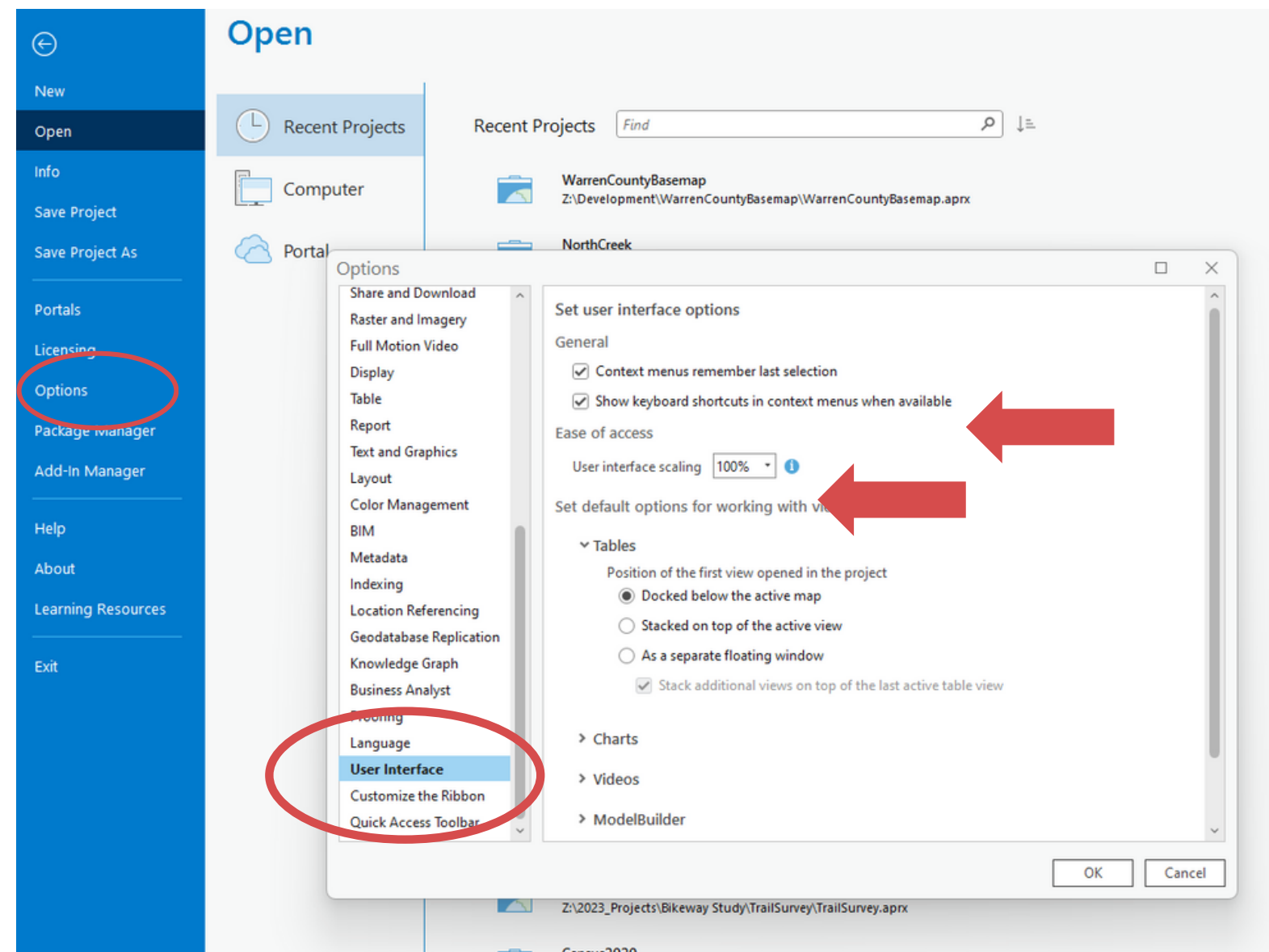
Catalog Pane Similar to ArcCatalog

Q: What are the major changes between ArcMap and ArcGIS Pro in regards to where tools and operations are located?



- Toolbars are replaced by ribbons. Ribbons and tabs are context sensitive.
- Views and Panes are dockable and you can move them around.
- You can have multiple views and maps in one project.

Q. Please show tricks for accessibility

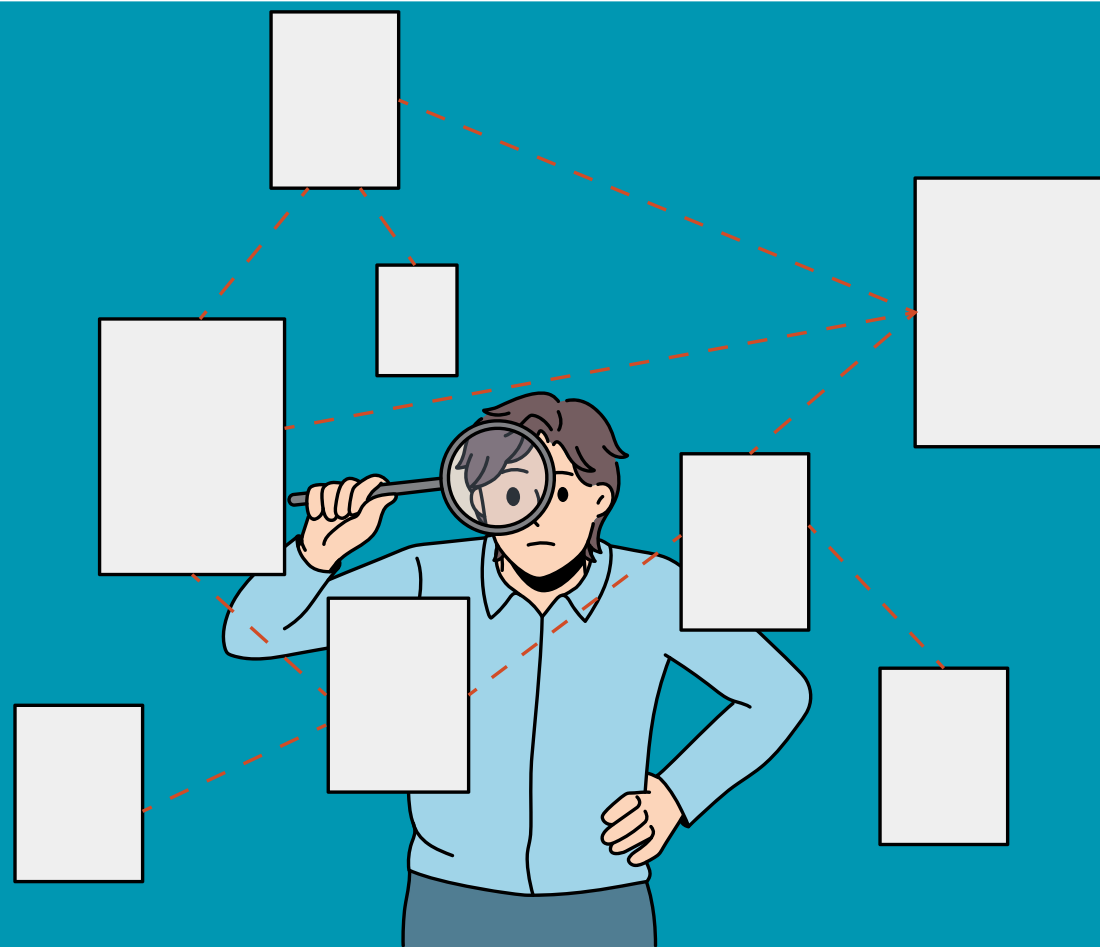


- In Options > User Interface: display keyboard shortcuts, scale interface
- In Options > Application: Choose Light or Dark theme
- View>Accessibility for Color Vision Simulator
- Accessibility for layouts - add alt text - Element Pane
- Keyboard Shortcuts

DEMO



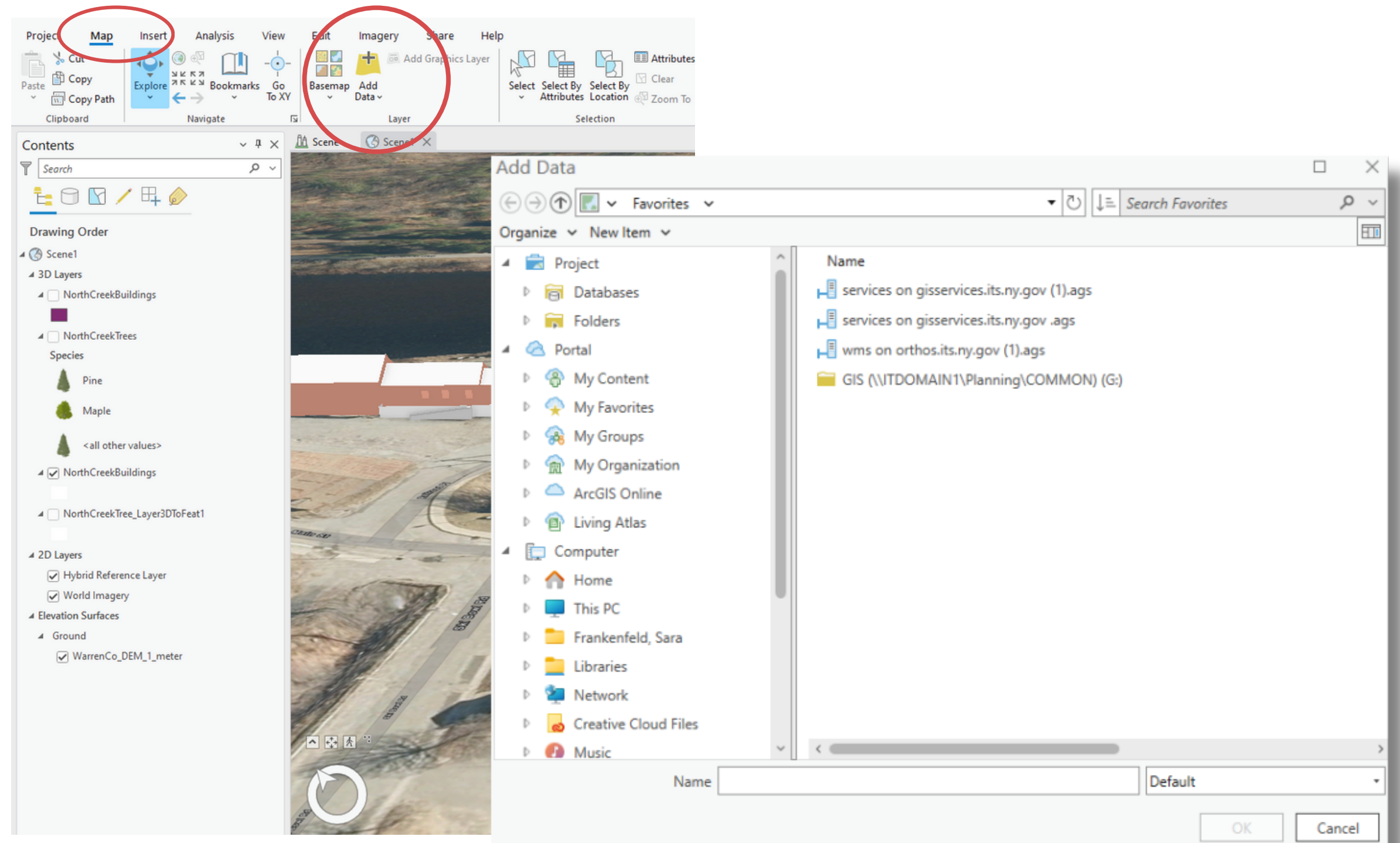
Finding and Adding Data



Adding Data: from the Add Data tool

On ribbon for Map Tab, click “Add Data”

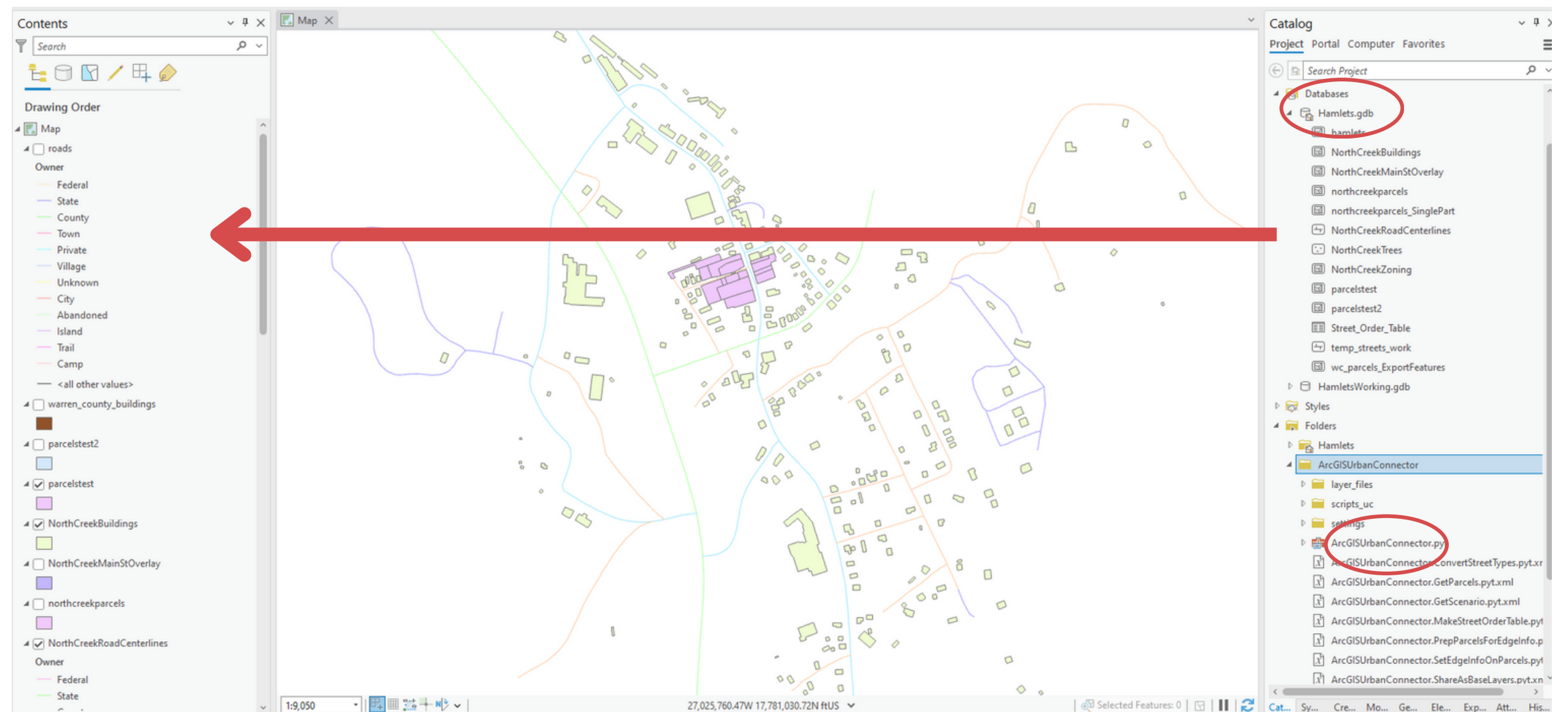
You can add data from a variety of sources including local drives, server, your/your organization’s online portal content, the Living Atlas, and all of ArcGIS Online



Adding Data: from the Catalog Pane

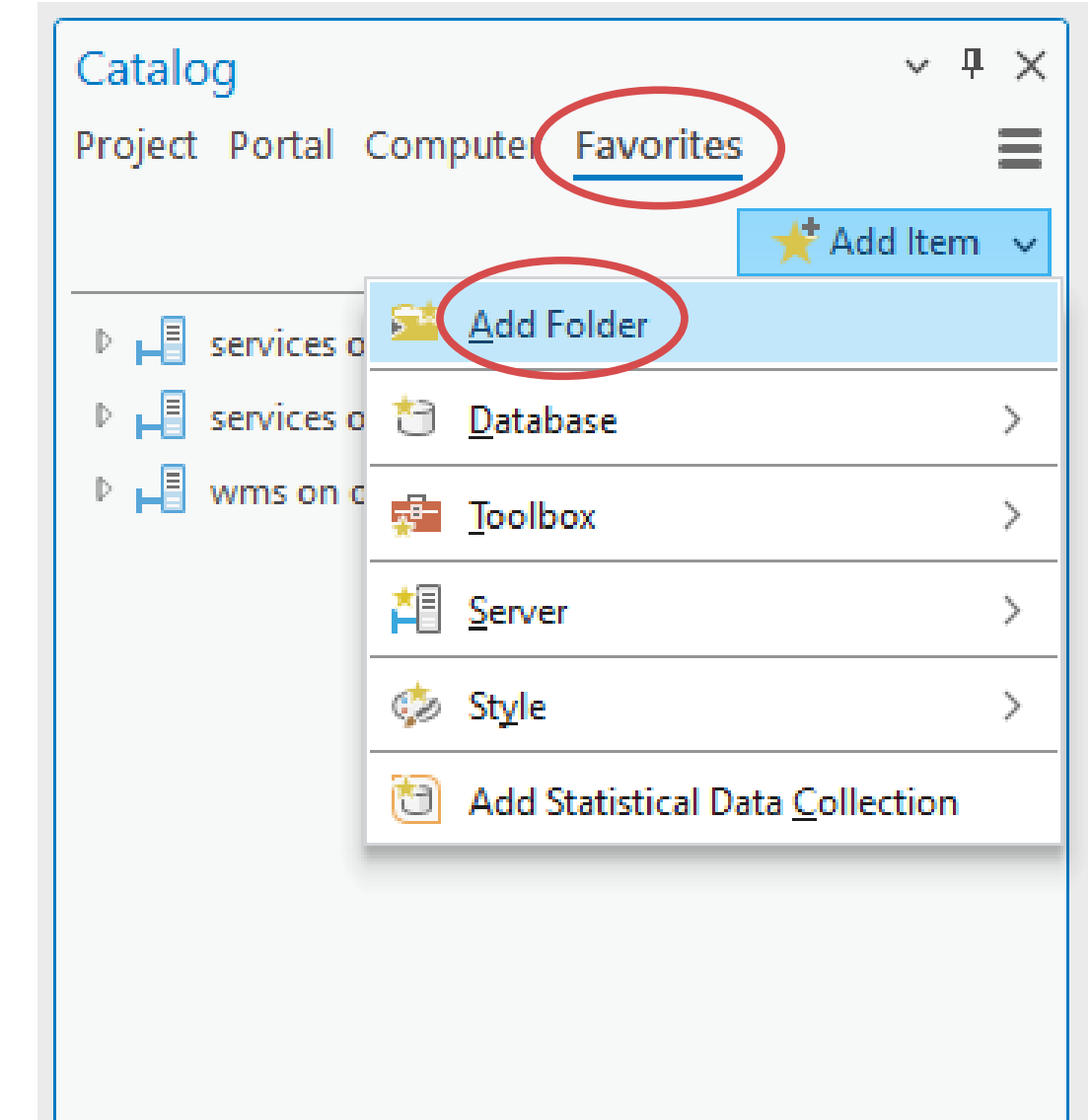
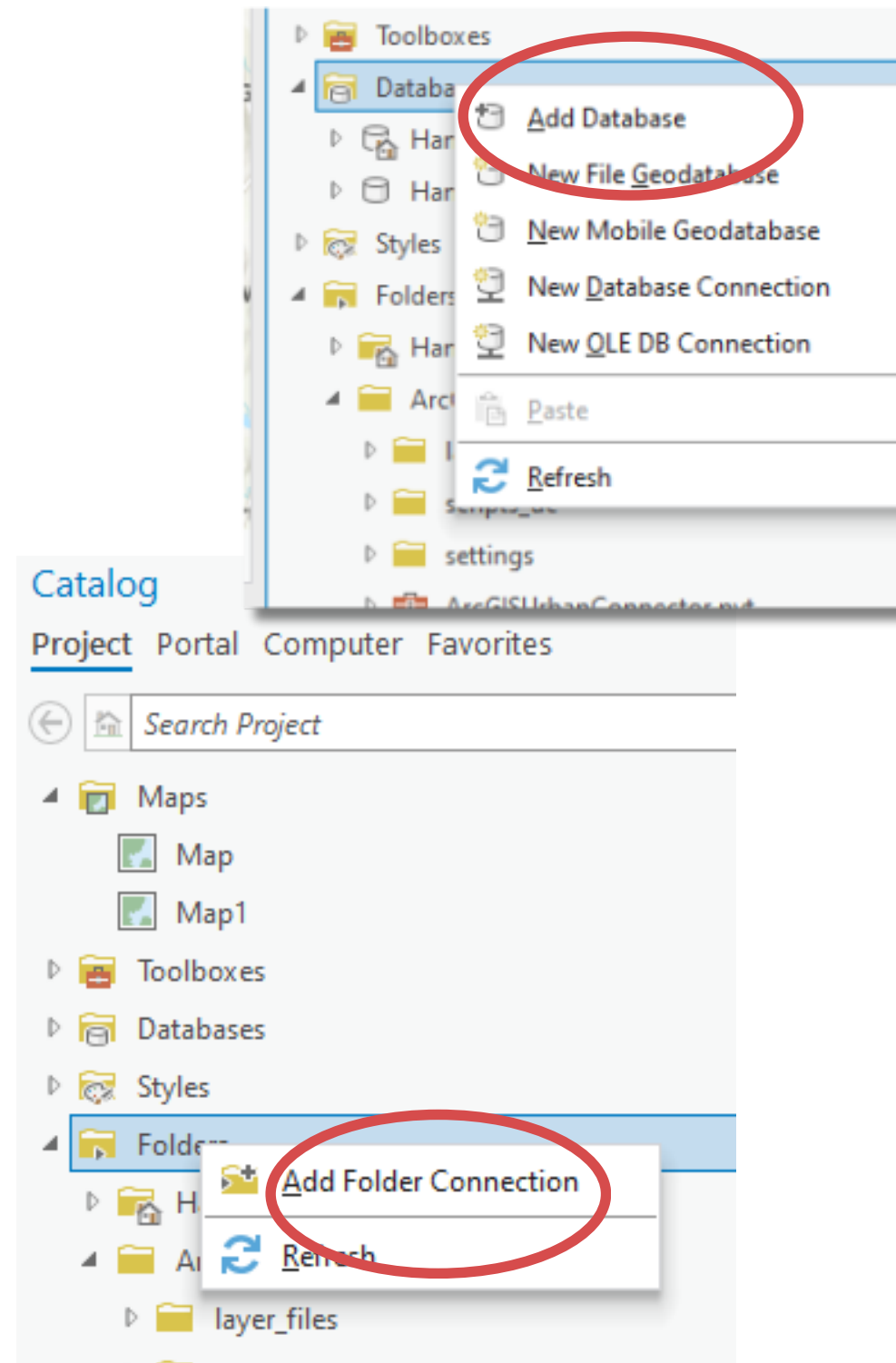
Drag data from “Databases” or “Folders” tabs to the Contents pane.

Can also drag contents from Portal (ArcGIS Online), Computer, or Favorites tabs.



Saving Data Locations in the Catalog Pane

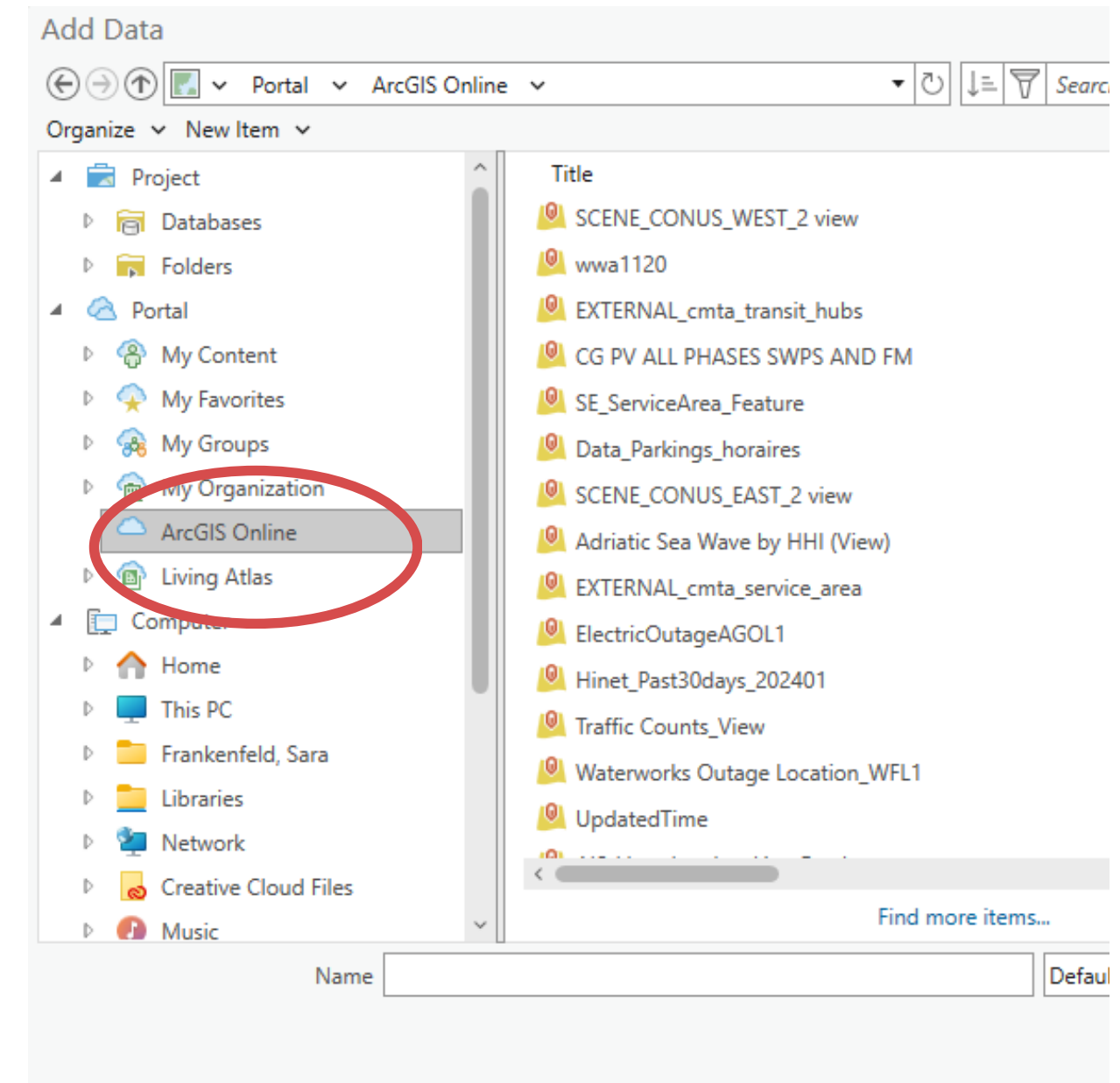
- In Catalog Pane, Connect to folders or geodatabases where your data is stored in the project or for all projects
 - adding a folder as a **Favorite** in ArcCatalog will make it available for all projects
 - adding a folder connection in “**Folders**” in ArcCatalog Project pane will make it available in that project



Finding Data

Q: ArcGIS Pro tutorials skip the basics like finding the right datasets and moving them into your project. How do I do that?

In addition to any local data you or your organization might have, there is a wonderland of data available through the Living Atlas and ArcGIS Online.



Adding Data: From the Living Atlas and ArcGIS Online

the Living Atlas is a curated collection of authoritative data from ESRI, ESRI partners and trusted agencies. It is a subset of ArcGIS Online. Some of it requires a subscription but much is free to use for anyone with an ArcGIS Pro license. You can be confident that Living Atlas data is vetted by experts in the subject matter.

ArcGIS Online is ESRI's cloud-based platform for hosted GIS data. This data can be made available by anyone. There is some good data, but you should be more cautious when using this data.

Adding Data: From the Living Atlas and ArcGIS Online

Click on “Add Data” button from Map tab. Click on Living Atlas on left hand side and then search by topic in upper right corner.

The screenshot shows the 'Add Data' dialog box in ArcGIS Online. The interface includes a search bar at the top right with the text 'national hydrography dataset' and a search icon. On the left, a navigation pane shows 'Living Atlas' selected. The main area displays a list of search results with columns for Title, Type, Date Created, and Date Modified. The first result, 'National Hydrography Dataset Plus High Resolution', is selected. On the right, a metadata panel for this dataset is visible, showing details like Type (Feature Layer), Owner (esri landscape2), and Summary. At the bottom, there is a 'Name' field containing the selected item's name and 'OK' and 'Cancel' buttons.

1. Click on Living Atlas

2. Search here

3. Click to select data you want

4. View Metadata

5. Click OK to add to map

Title	Type	Date Created	Date Modified
National Hydrography Dataset Plus High Resolution	Feature Layer	3/15/2023 2:08:17 PM	5/8/2023 6:5
National Hydrography Dataset Plus High Resolution 2	Feature Layer (Hos	12/9/2019 2:53:53 PM	7/13/2023 1
Hydro Flow Metrics Percent Change 2040	Map Image Layer	9/20/2019 6:24:32 PM	3/21/2023 5
National Inventory of Dams	Feature Layer	6/18/2021 8:40:37 AM	3/2/2024 7:4
Hydro Flow Metrics Historical	Map Image Layer	9/20/2019 6:24:26 PM	3/21/2023 5
Hydro Flow Metrics Absolute Change 2040	Map Image Layer	9/20/2019 6:24:32 PM	3/21/2023 5
Hydro Flow Metrics 2080	Map Image Layer	9/20/2019 6:24:33 PM	3/21/2023 5
Hydro Flow Metrics 2040	Map Image Layer	9/20/2019 6:24:25 PM	3/21/2023 5
Hydro Flow Metrics Percent Change 2080	Map Image Layer	9/20/2019 6:24:30 PM	3/21/2023 5
Hydro Flow Metrics Absolute Change 2080	Map Image Layer	9/20/2019 6:24:31 PM	3/21/2023 5
National Water Model (10 Day Forecast)	Map Image Layer	8/24/2016 10:25:41 AM	6/1/2022 12
Landmarks and Government Buildings	Feature Layer	6/29/2021 9:51:16 PM	3/2/2024 9:1
Medical Emergency Response Structures	Feature Layer	6/29/2021 9:51:05 PM	3/2/2024 8:3
Law Enforcement Structures	Feature Layer	6/29/2021 9:50:58 PM	3/2/2024 8:1

Elevation Data

Q: How do I use
lidar or 2ft
contours?

<https://data.gis.ny.gov>

NYS GIS Clearinghouse NYS GIS Resources FAQs

NYS GIS Clearinghouse

Discover free public data, maps, apps and other resources

Please Note
The GIS Program Office is now Geospatial Services. The name change reflects our responsibilities expanding beyond data programs.

Through the collaboration of many government agencies, non-profit organizations, and academia, the NYS GIS Clearinghouse is an evolving searchable repository of GIS data and mapping resources available to all users – from GIS professionals to the general public. Use the search tool or choose one of the search buttons below to get started. For help navigating this site and accessing data, see this [overview document](#).

To stay up-to-date on changes to the Clearinghouse, please sign up for the [NY GIS List \(GISNYL\)](#) hosted by the New York State Library.

Browse Data by Category

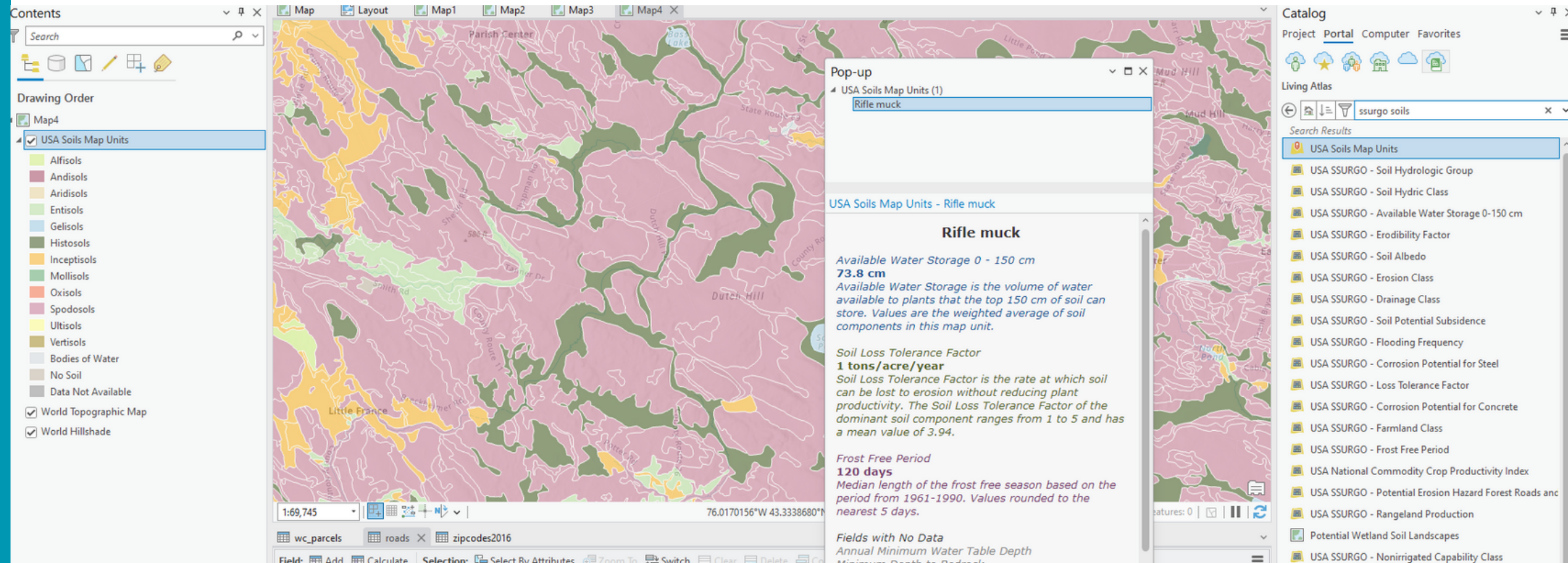
- Parcels
- Address
- Imagery
- Elevation**
- Transportation

In addition to the data available through ArcGIS Online and the Living Atlas, the New York State GIS Clearinghouse has curated data for download from federal, state and local agencies, as well as access to hosted data layers and apps through an ArcGIS Online Hub site.

2' contours and lidar data can be downloaded through the Clearinghouse.

Soils Data

Q: In ArcMap there is a soil data viewer. Will there be a NEW soil data viewer in ArcGIS Pro? Because as of now there is NOT one.



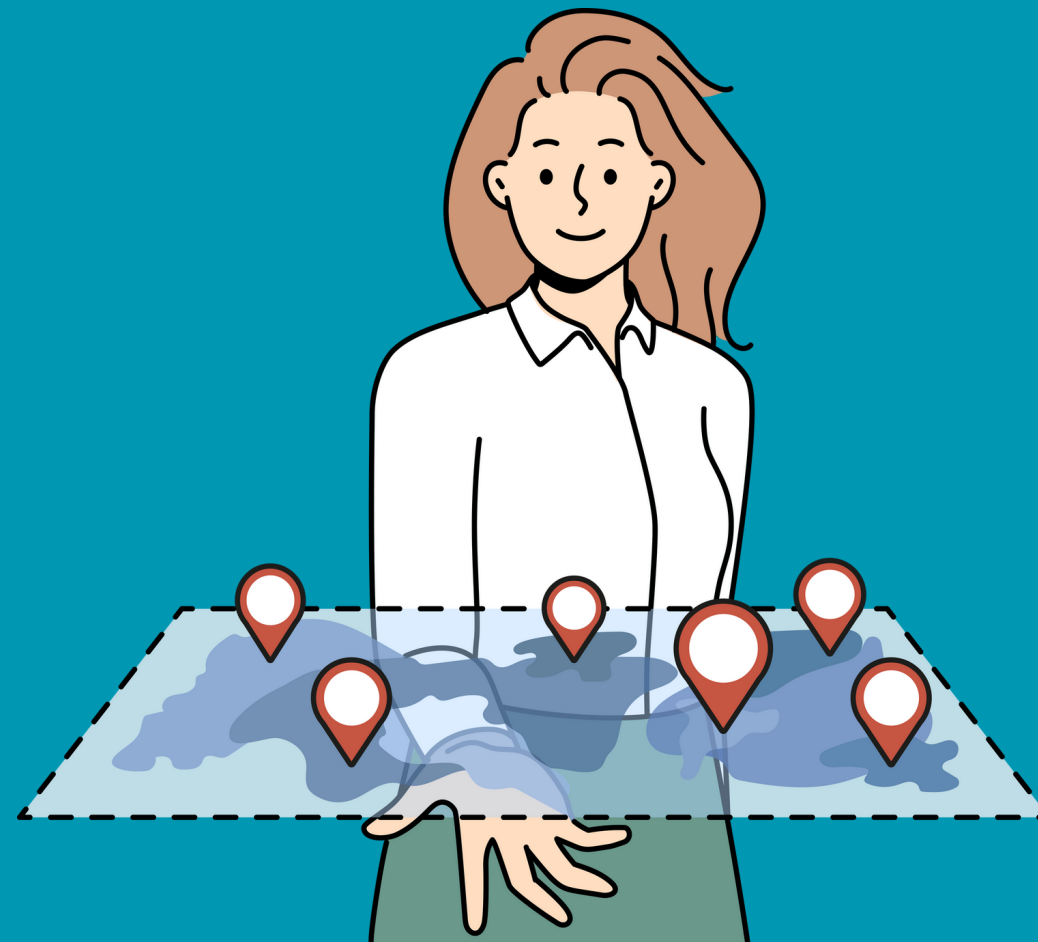
There is not currently a soil data viewer for ArcGIS Pro. One may be coming later this year?

In the meantime, SSURGO soils are available for use in ArcGIS Pro through the Living Atlas.

DEMO



Creating New Data



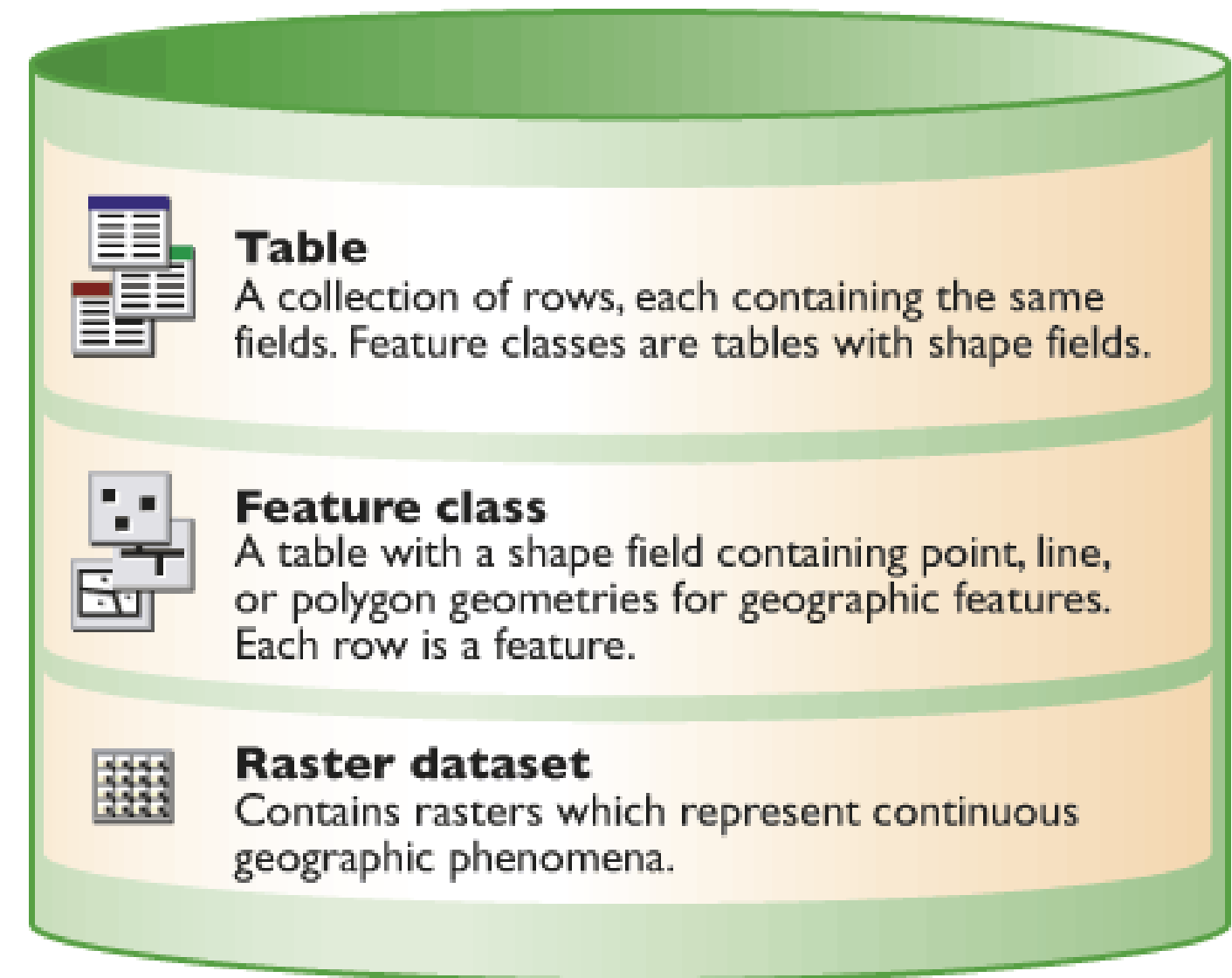
Q: How can I be efficient with data? When do I use a geodatabase?

For the most part, unless you'll be sharing data with someone who doesn't have ESRI software, using a geodatabase is the best bet.

- **The MOST efficient way to use data is from ArcGIS Online. If you are not the authoritative source for the data and a web layer is available in ArcGIS online, use it.**
- **If using local data, only make copies when absolutely necessary for editing.**
- **If other people will be using the data or you will be using the data for other projects, create the geodatabase in a shared location.**
- **If you're creating data just for a particular project that will not be shared (or you will share the whole project), store it in the project geodatabase.**

What is a Geodatabase?

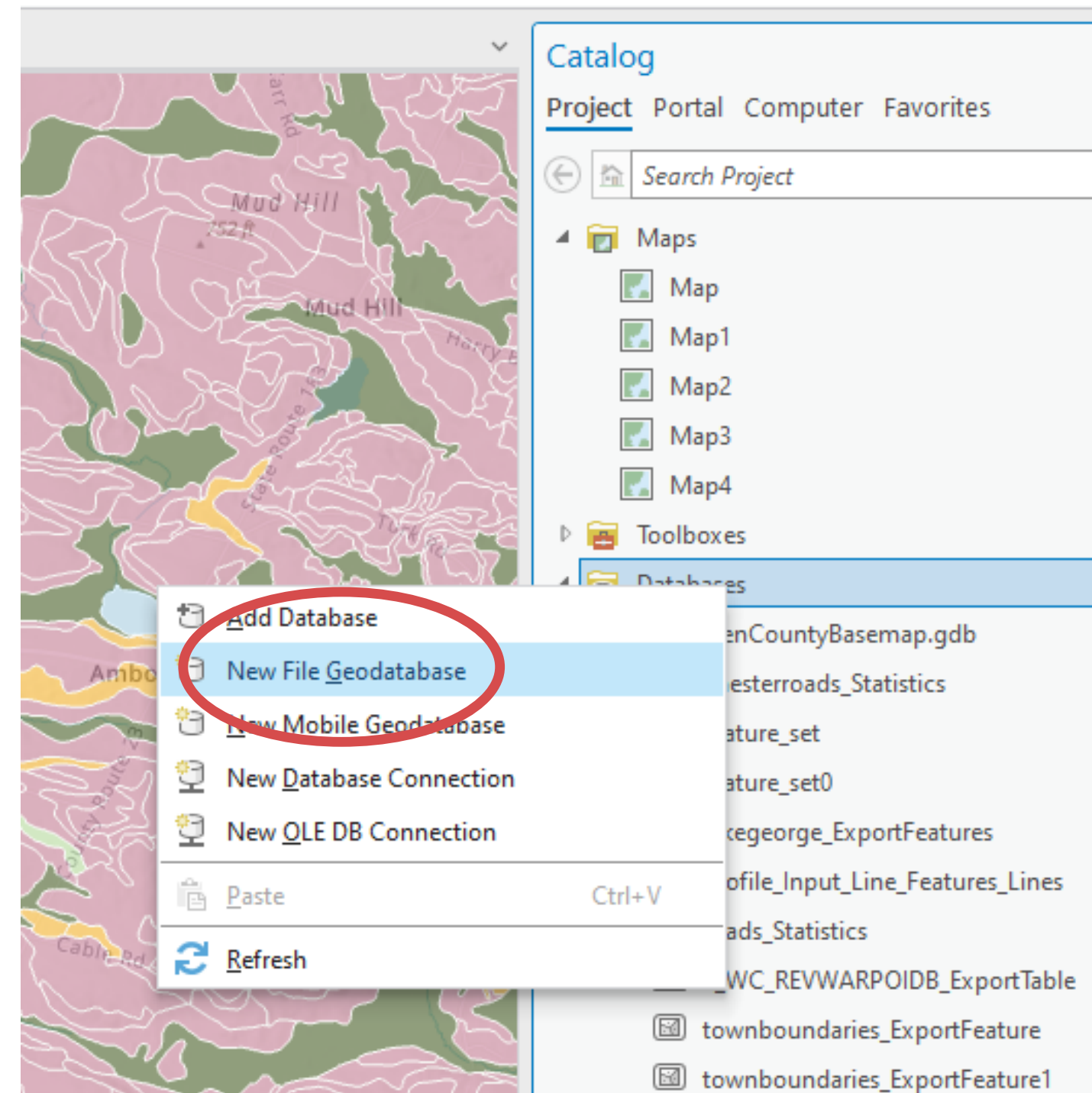
- **Collection of geographic datasets of various types:**
 - **Tables**
 - **Feature classes**
 - **Raster datasets**
- **Unlike shapefiles, can contain multiple layers of information**



Creating a New Geodatabase

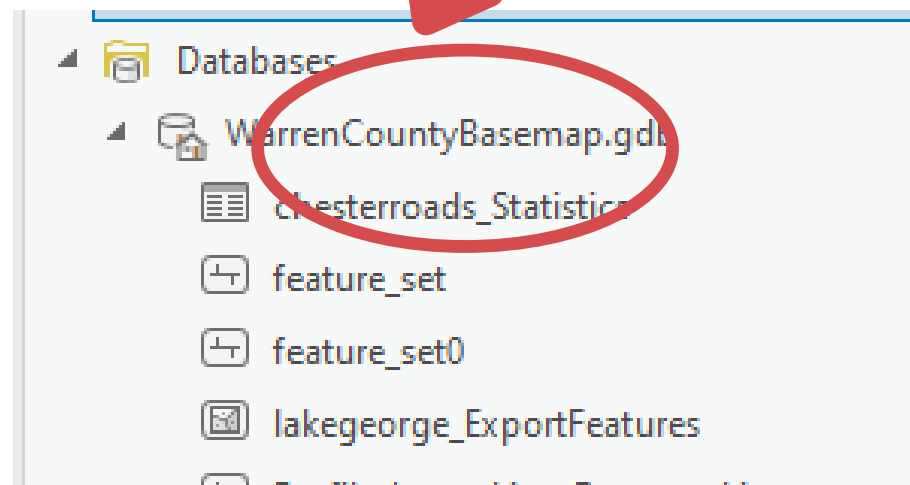
In Catalog Pane, right click on Databases and choose “New File Geodatabase”

Note that a new Geodatabase is automatically created when you start a new project, so you don’t need to create another one, unless you have a reason to (you’re creating a “master” geodatabase, shared geodatabase, etc).

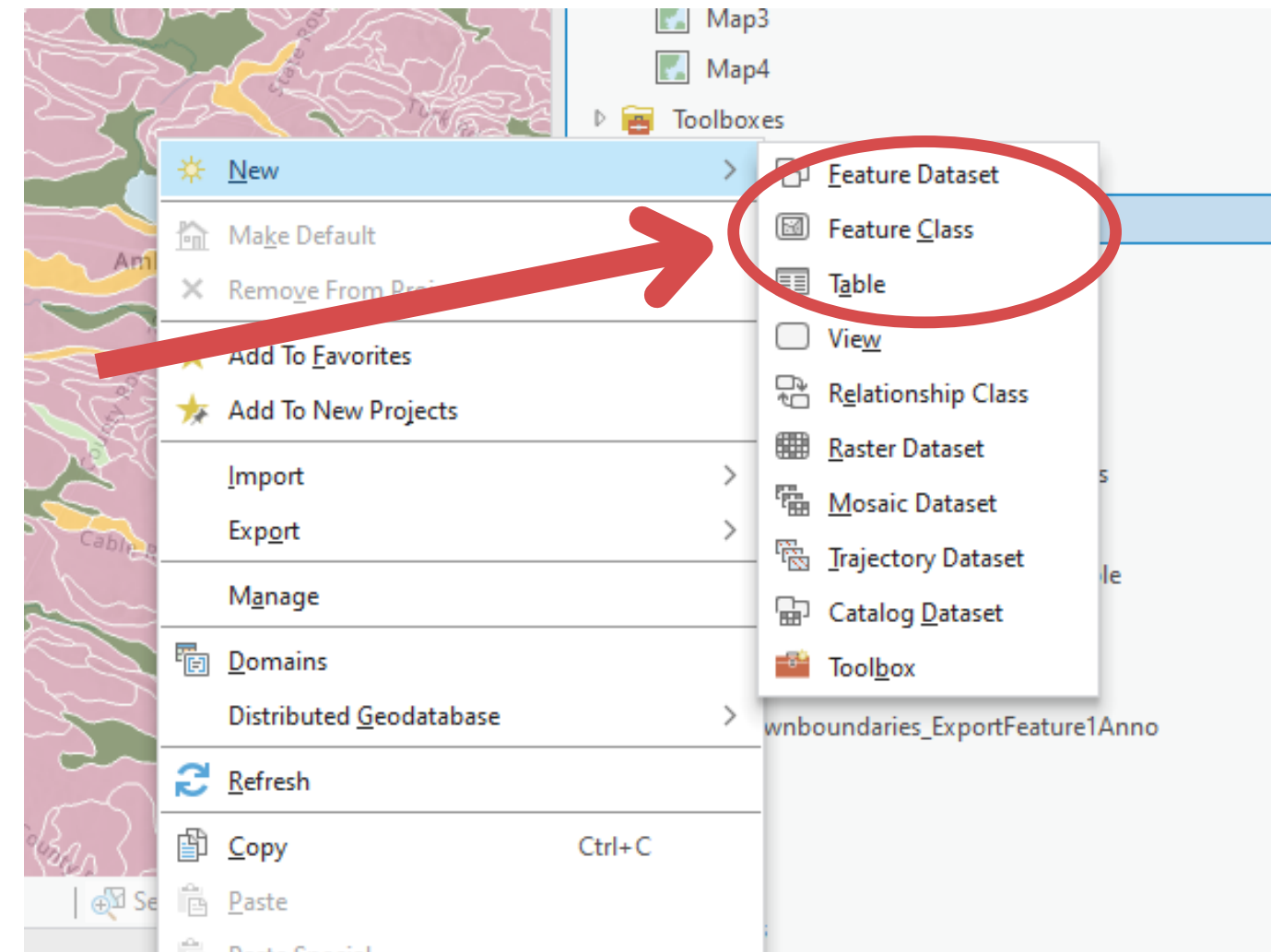


Creating Feature Classes in a Geodatabase

1. In Catalog Pane, right click on geodatabase in Databases where you want to create new layer and choose “New”



2. Click arrow next to New and choose Feature Class



Creating Feature Classes in a Geodatabase

3. Enter Layer Name and select type of data

Create Feature Class

Define

Name: Outfalls

Feature Class Type: Point

Click Next

Previous Next Finish Cancel

4. Enter Field Names and Types

Create Feature Class

Fields

Field Name	Data Type
OBJECTID	OBJECTID
SHAPE	SHAPE
Subwatershed	Text
Community	Text
OutfallID	Short Integer
Field	Text

Click Next

Previous Next Finish Cancel

5. Select Coordinate System

Create Feature Class

Spatial Reference

WGS 1984 Web Mercator (auxiliary sphere)

Click Next

Previous Next Finish Cancel

6. You can take the defaults for the next three screens (Tolerance, Resolution and Storage) and then click Finish.

Create Feature Class

Tolerance

XY Tolerance: 0.001 Meter

Z Tolerance: [None]

Create Feature Class

Resolution

XY Resolution: 0.0001 Meter

Z Resolution: 0.0001 Meter

Min: -1000000 Max: 900719825474.099

Create Feature Class

Storage Configuration

Configuration Keyword: Default

Click Finish

Previous Next Finish Cancel

Editing a New Feature Class

Big Change!

No more stopping and starting the Editor. You do not need to start an edit session in ArcGIS Pro - just go to the edit tab. You will be editing whichever layer is selected in the Contents pane.

Editing a New Feature Class

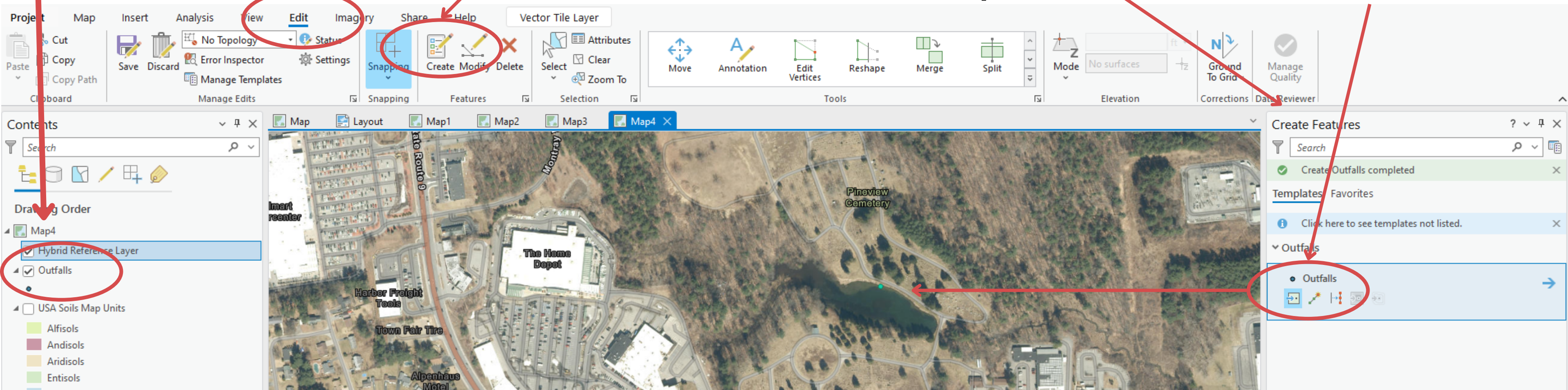
1. New Feature Class is added to the current Map pane (or you can drag it over from Catalog)

2. Click on the Edit tab

3. Click on the Create tool

4. If desired, dock the Create Features pane

5. Click on the new layer in the Create Features pane to activate it and then click on the map to create a new feature

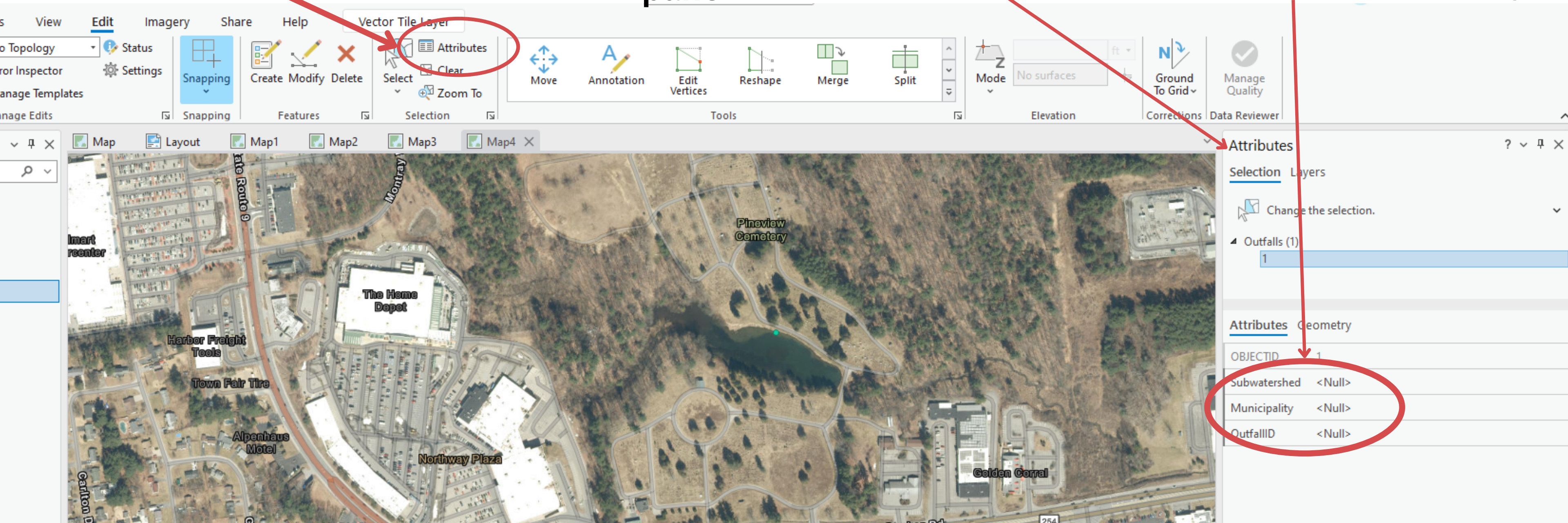


Adding Attributes

1 In the Edit Tab, click on Attributes

2. If desired, dock the Attributes pane

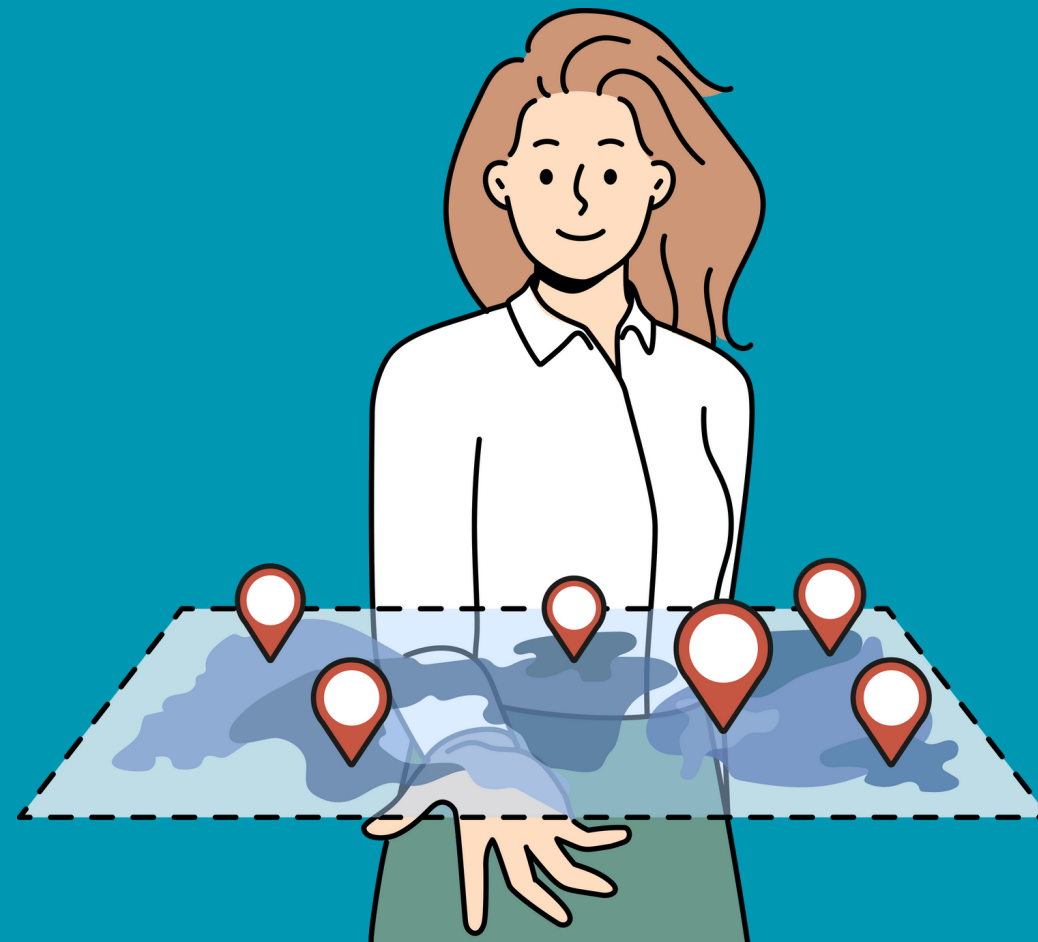
3. Make sure the new feature is selected on the map. Enter the attributes and then click Apply.



DEMO

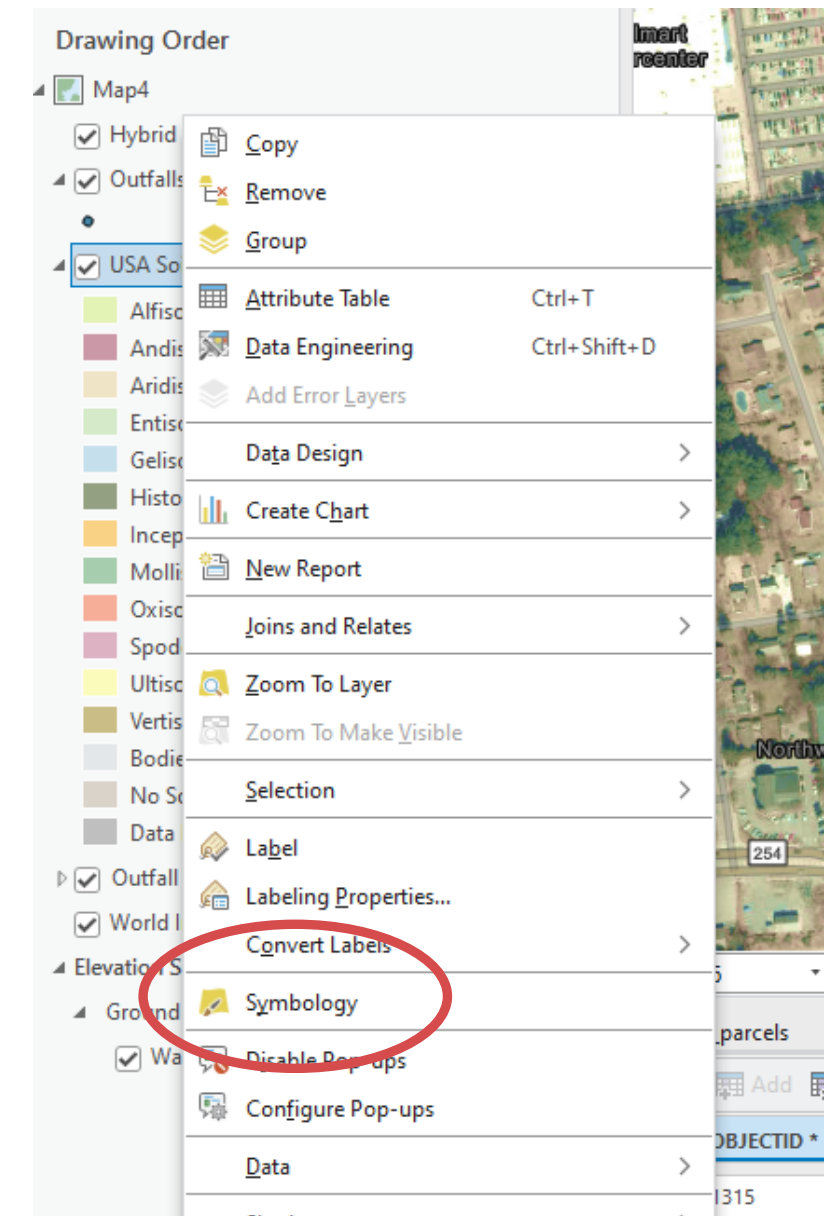
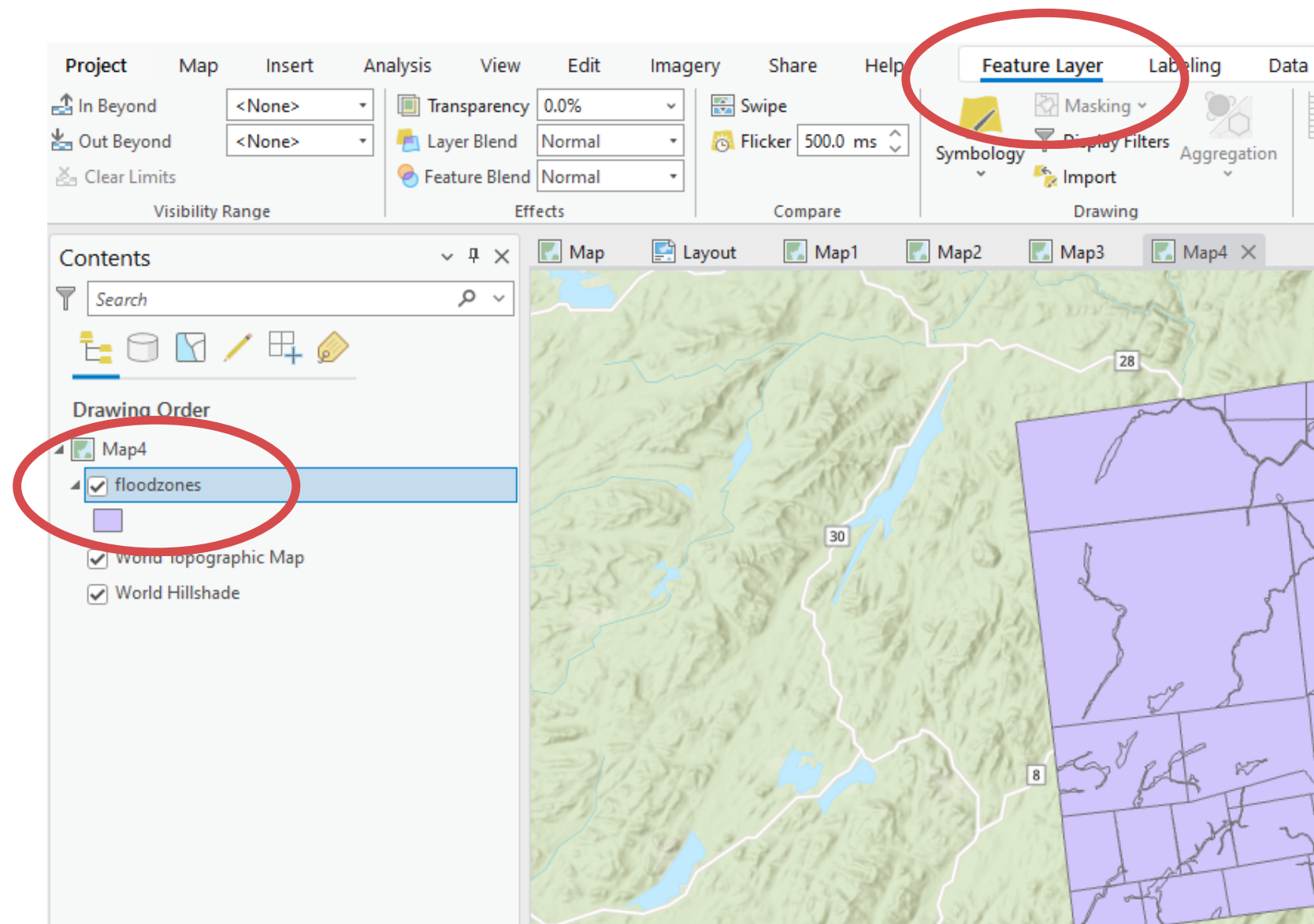


How to Make a Map



Symbology Overview

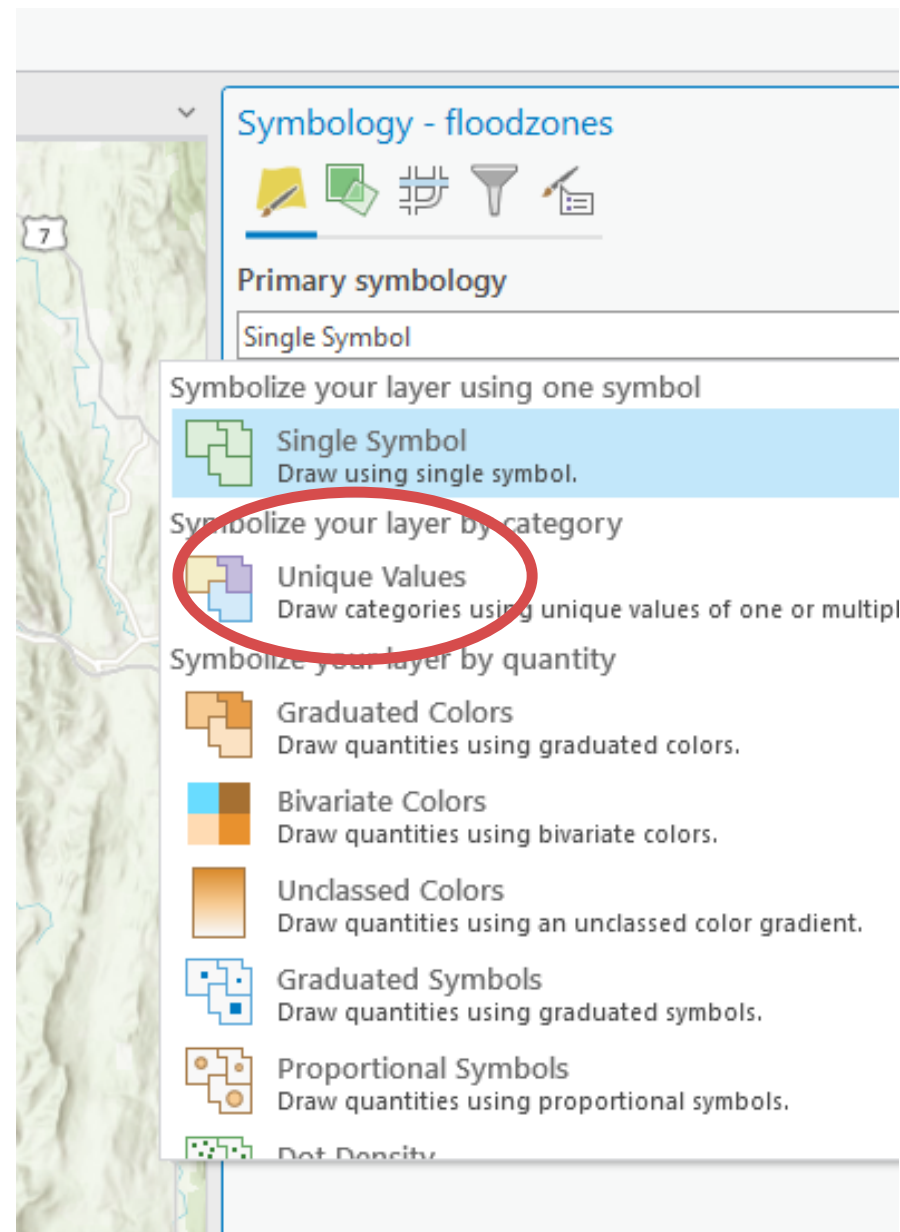
Similar to ArcMap, but way more options - click on layer name in Contents Pane. Click on Feature layer tab at top for Transparency/Blend Options



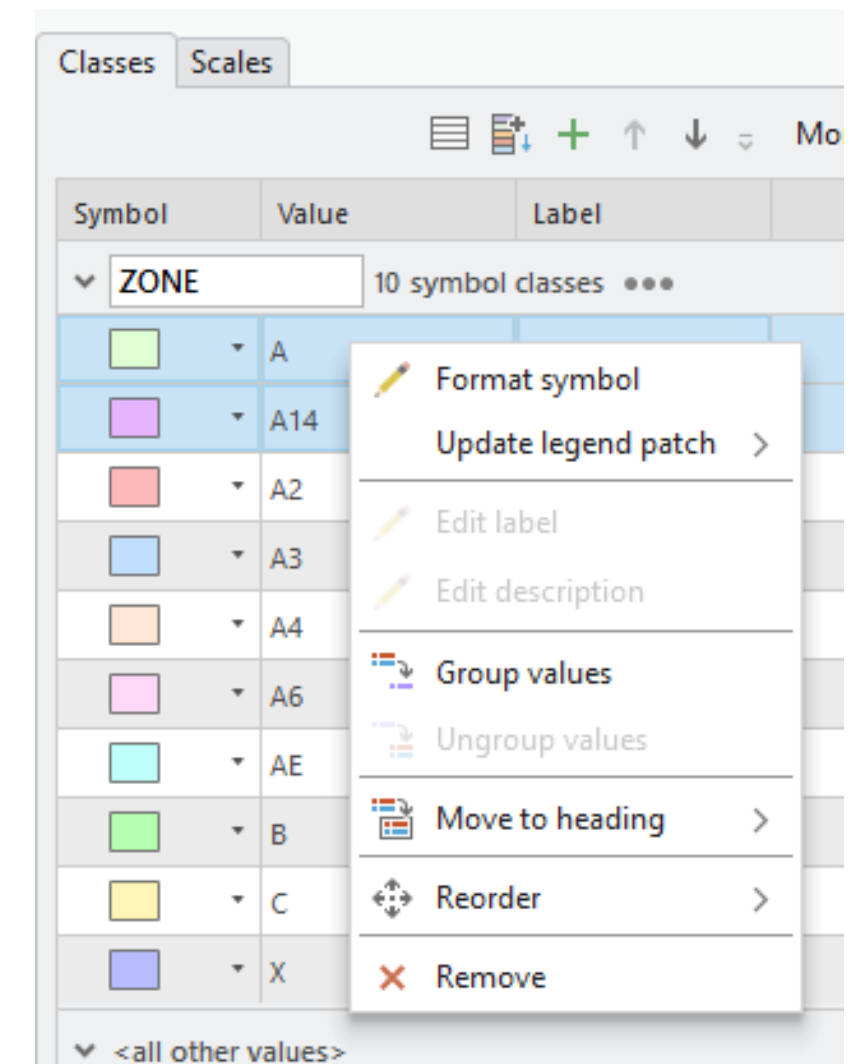
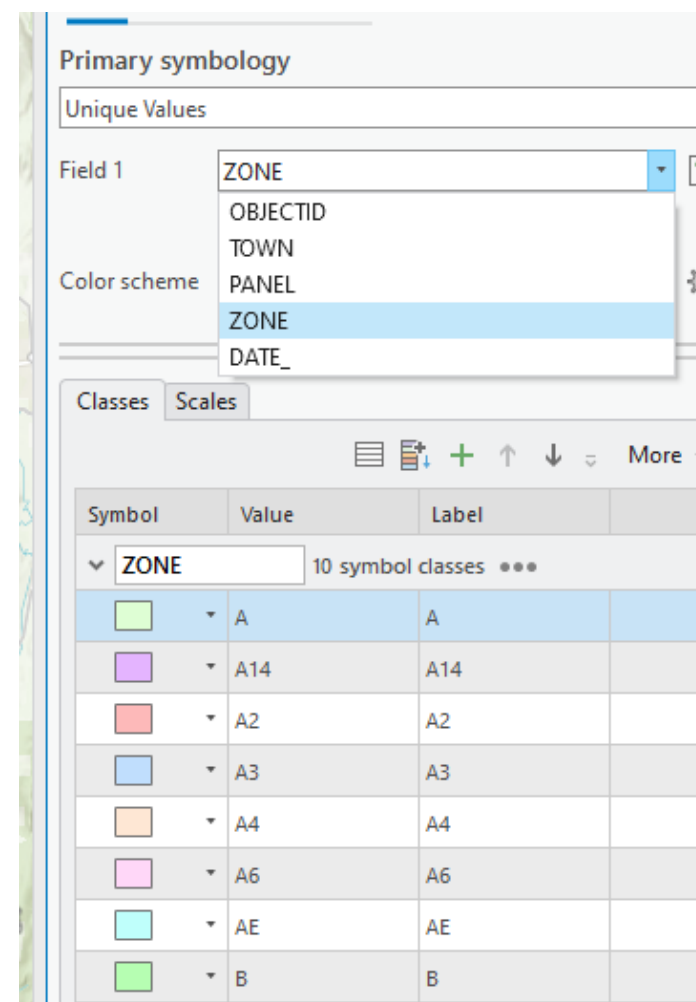
Right click on layer in Contents pane and choose Symbology for more options

Symbology Overview

In Symbology Pane, dropdown to choose desired Symbology type



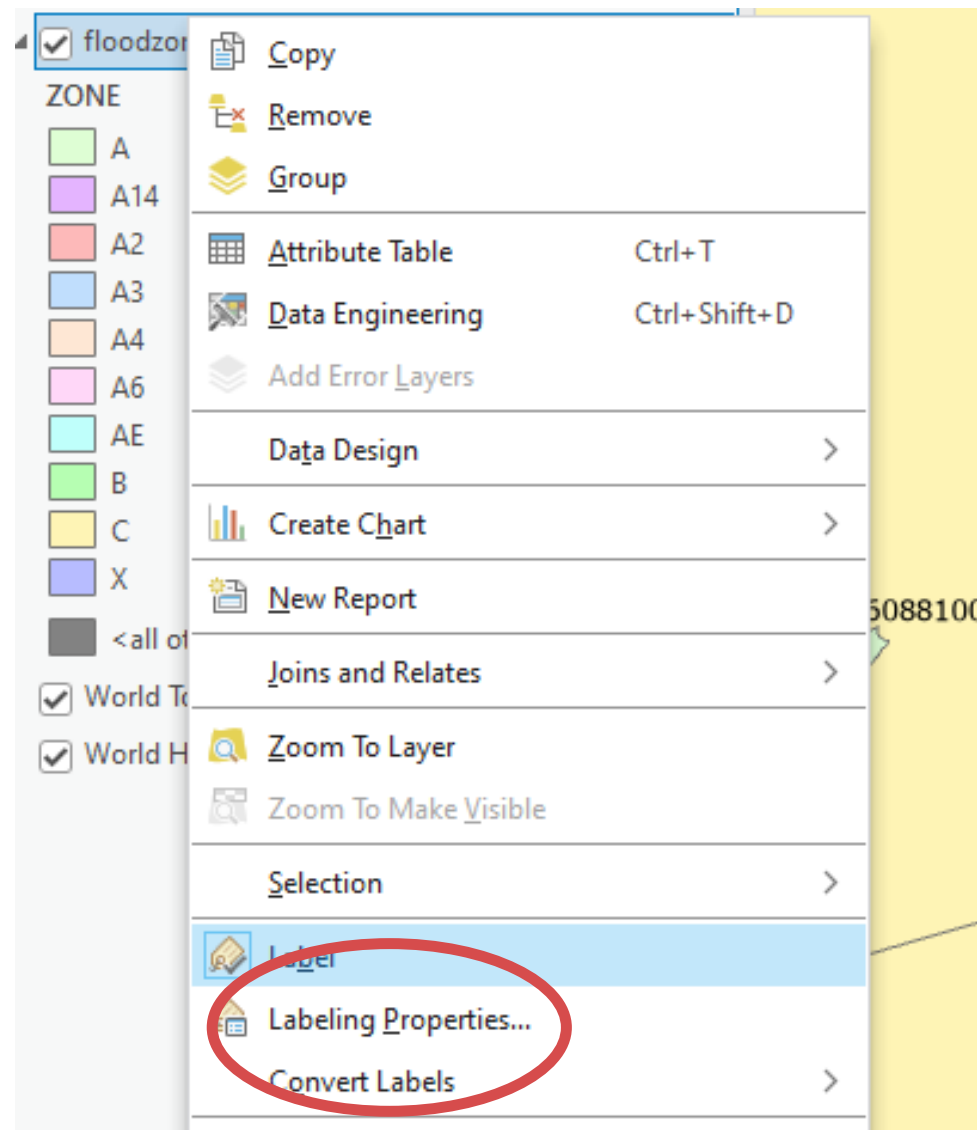
If using Unique Values, select desired Field



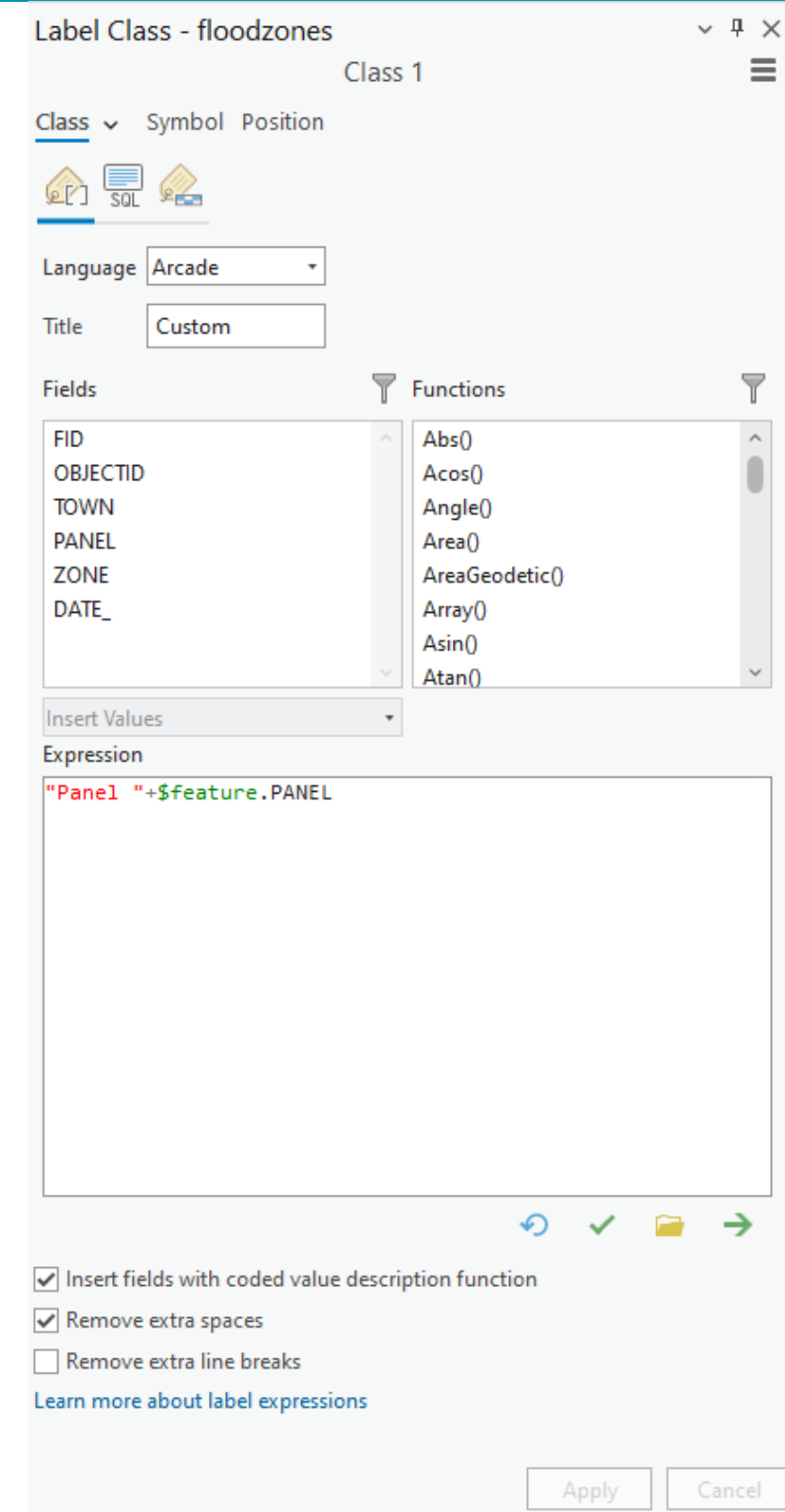
Right click on values to delete, group, change text for label, reorder or select different symbols

Labeling Overview

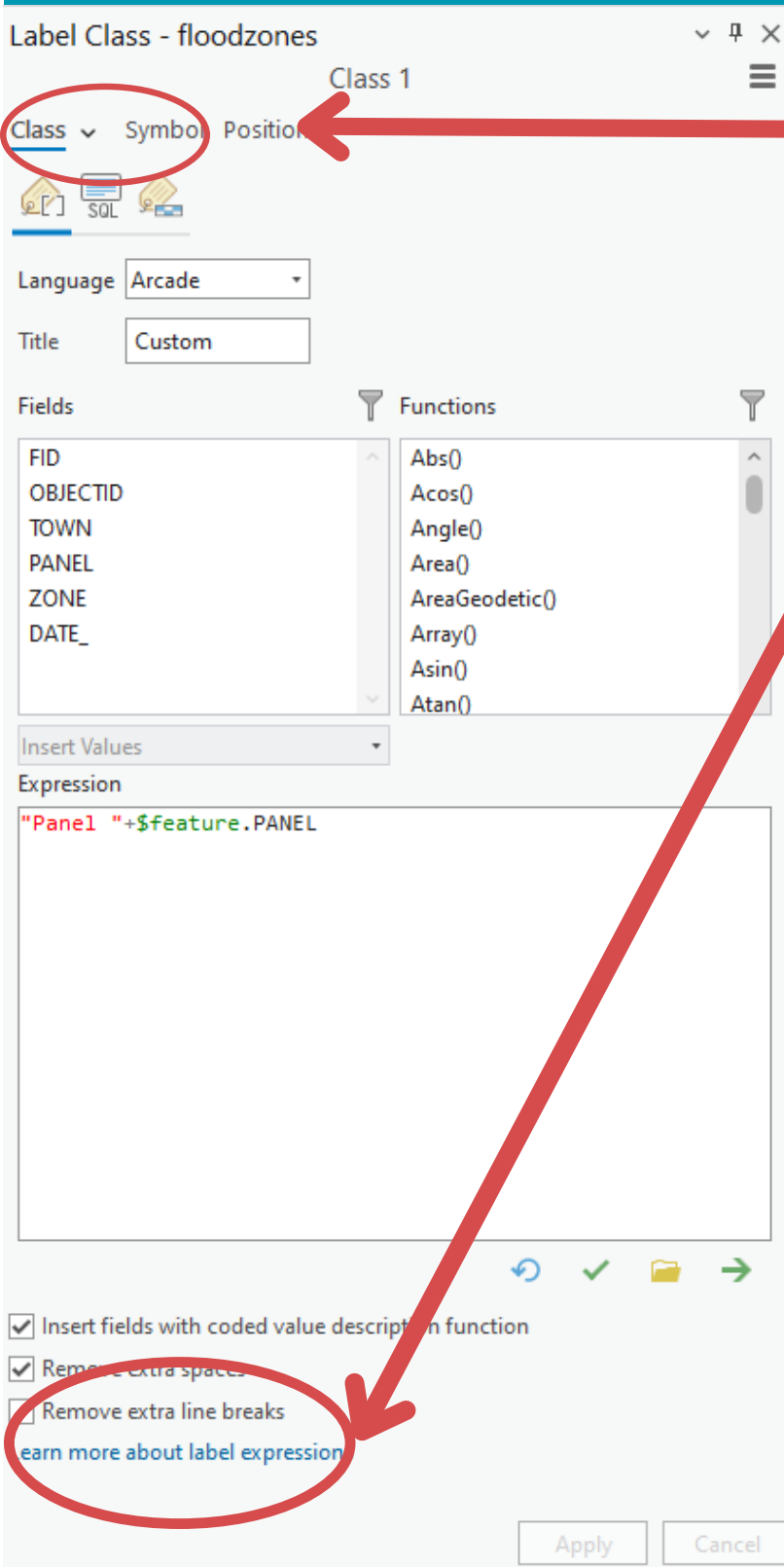
Right click on layer you want to label and choose Labeling Properties.



- There are TONS of options for labeling - way more than ArcMap. Default labeling engine is Maplex.
- There is a labeling ribbon with multiple tools as well as a labeling pane.
- You can label layers with expressions - default language is Arcade.
- Same as ArcMap, you can't move the labels - they're dynamic.

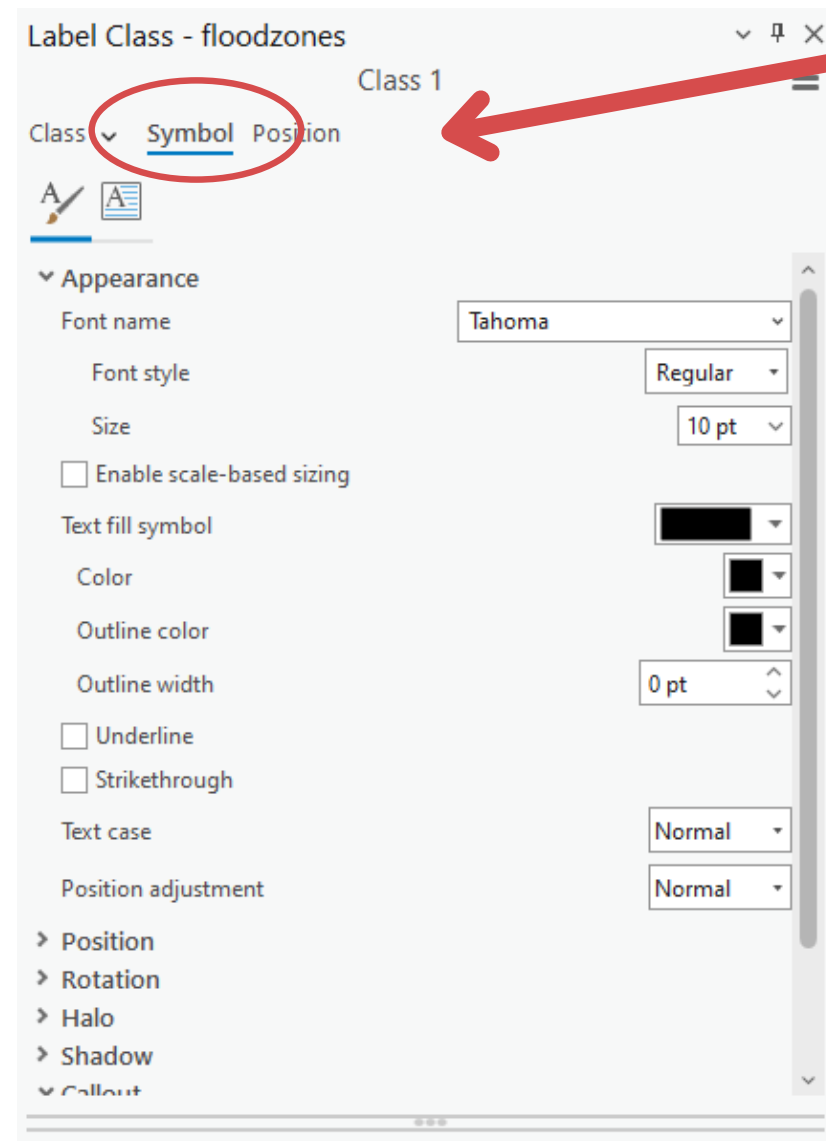


Labeling Overview



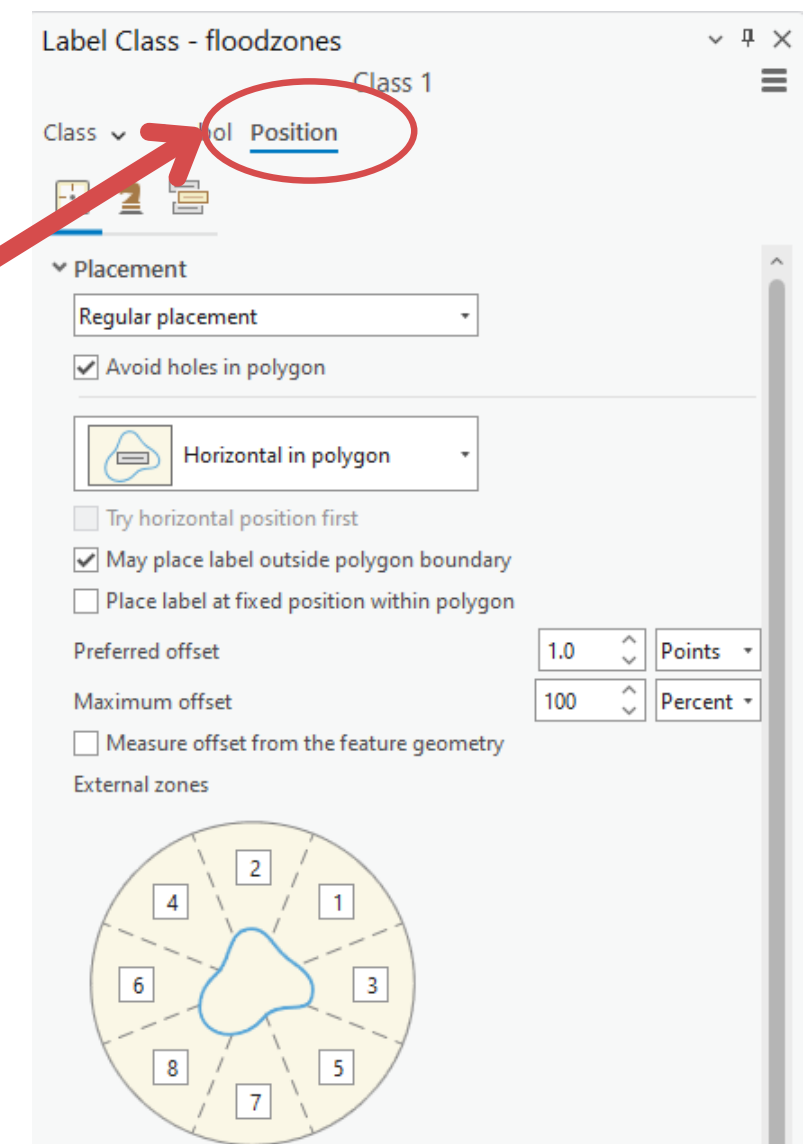
Click on **Class** tab for choosing label field or creating label expressions.

This link has lots of helpful examples of expressions.



The **Symbol** tab allows setting of font, size, color, halo, shadow, position, and background symbol

The **Position** tab has TONS of positioning options, including special placement for parcels, waterbodies, stacking, etc.



Q: Can you go over some of the autolabeling options for polygons? I always end up converting all the labels to graphics which takes forever

Me too!

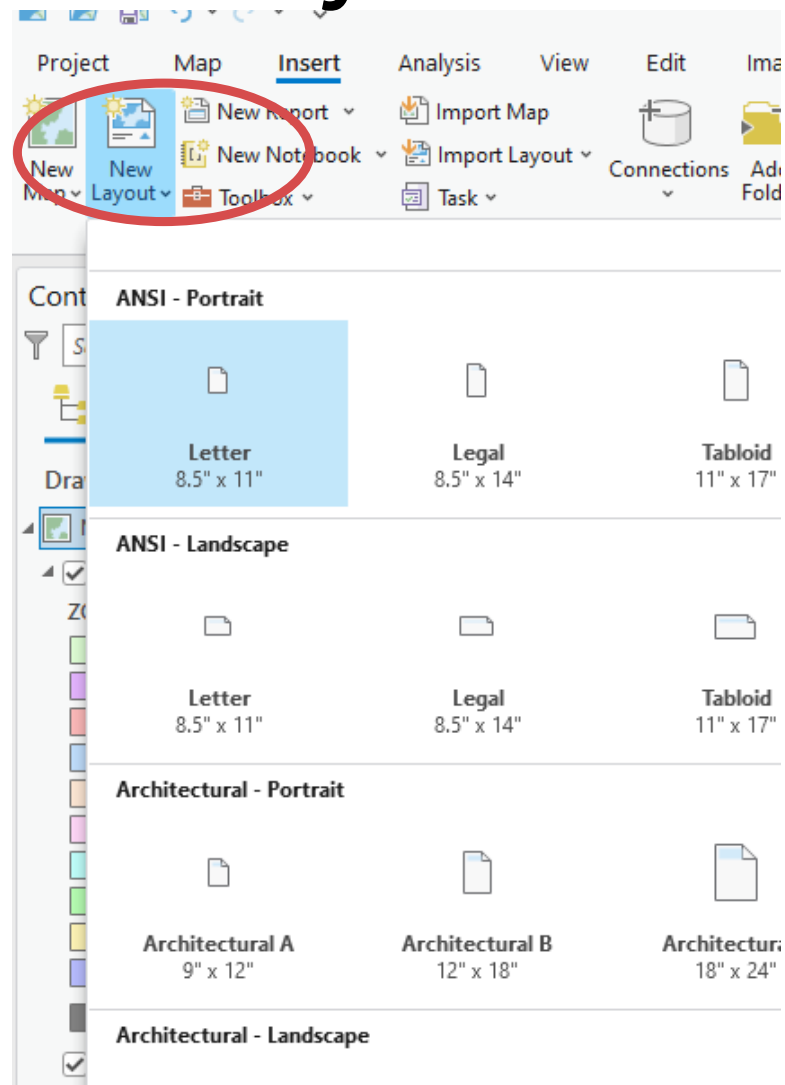


Tip: If you are making a map for print, create your layout and figure out the scale for the map on the layout. Then set the scale in the Map view to be the same (lower left hand corner). You can also set this as the reference scale for the map (right click on the map in the Contents Pane and choose Reference Scale). THEN go into labeling properties and set up labels.

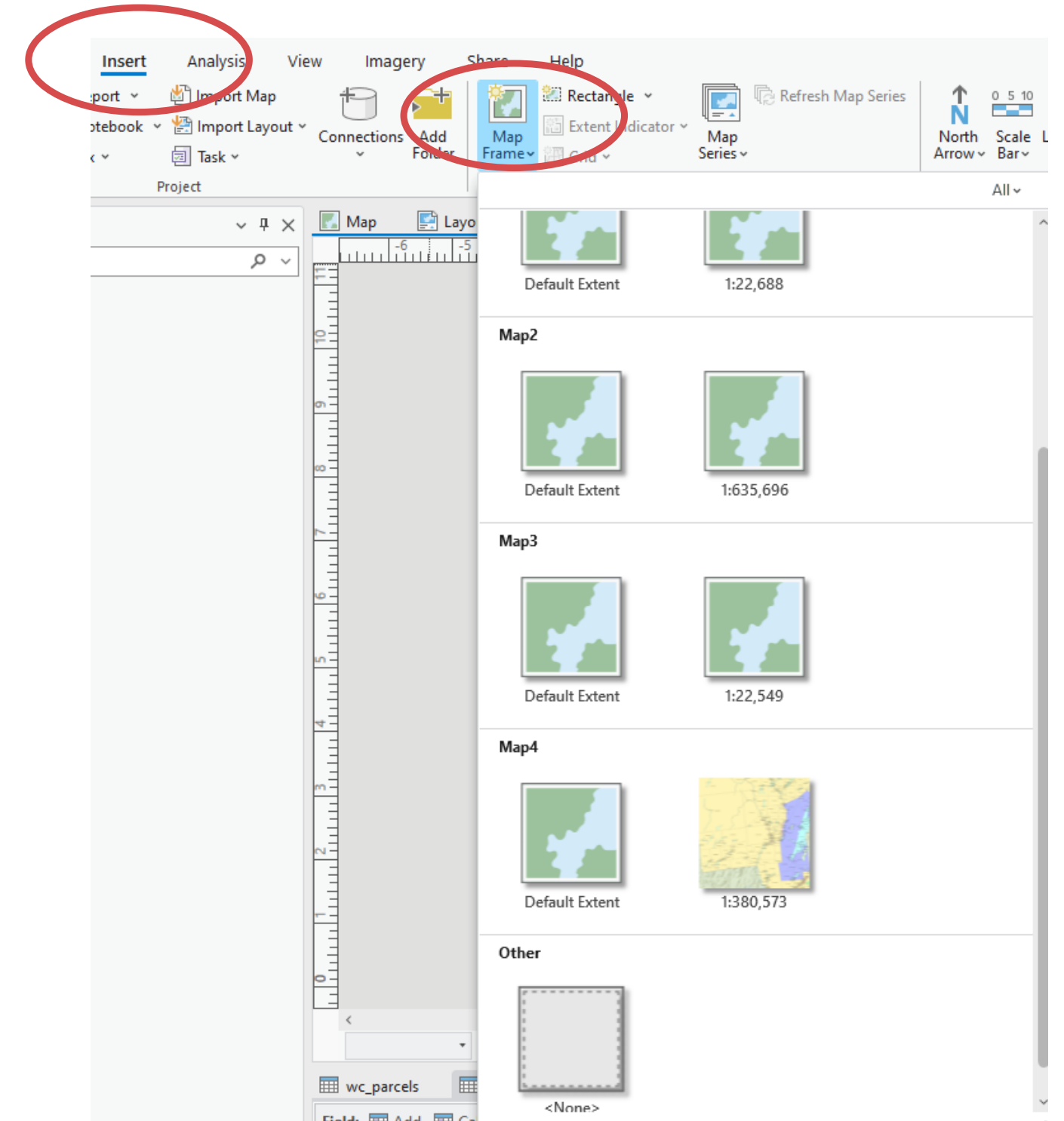
ANOTHER OPTION for converting to graphics: convert to annotation instead. You'll get lots of control over placement and then you can reuse the labels in other maps and projects.

Creating Layouts

1. In the **Insert** Tab, click on **New Layout** and choose **Size and Orientation**. This will create a new blank layout.

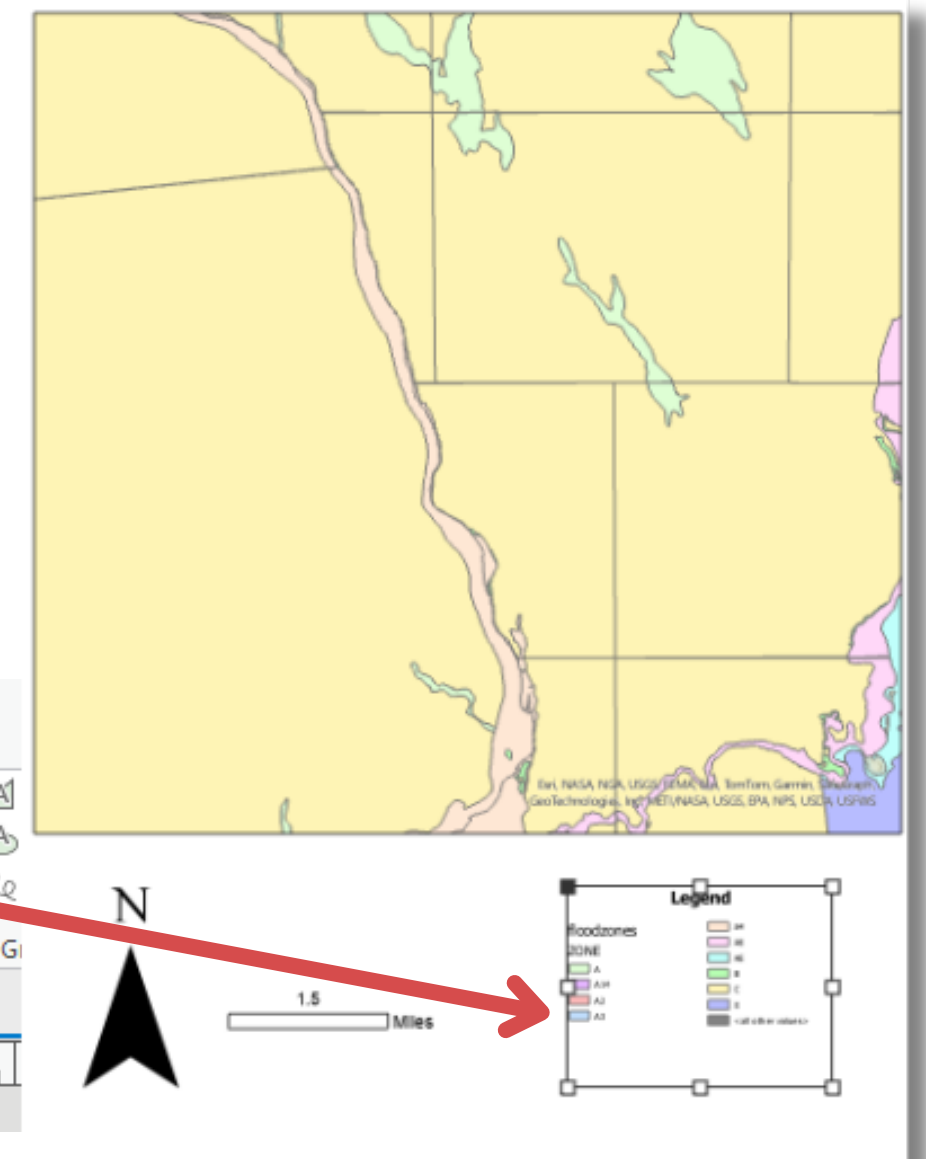
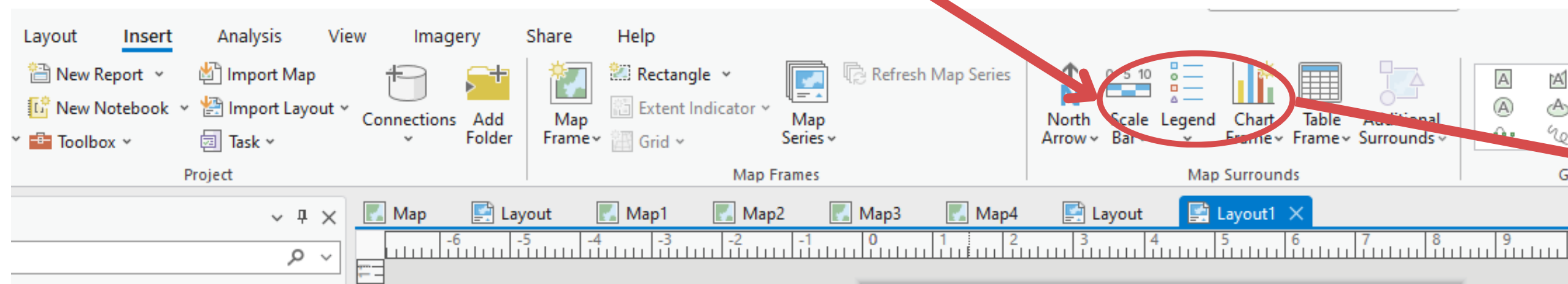


2. Layout Tools are on both the **Layout** and **Insert** tabs. Click on the **Insert** tab and select the **Map Frame** tool. Then select the map you want to insert on the layout and then draw the frame on the map to add it to the layout.



Creating Layouts

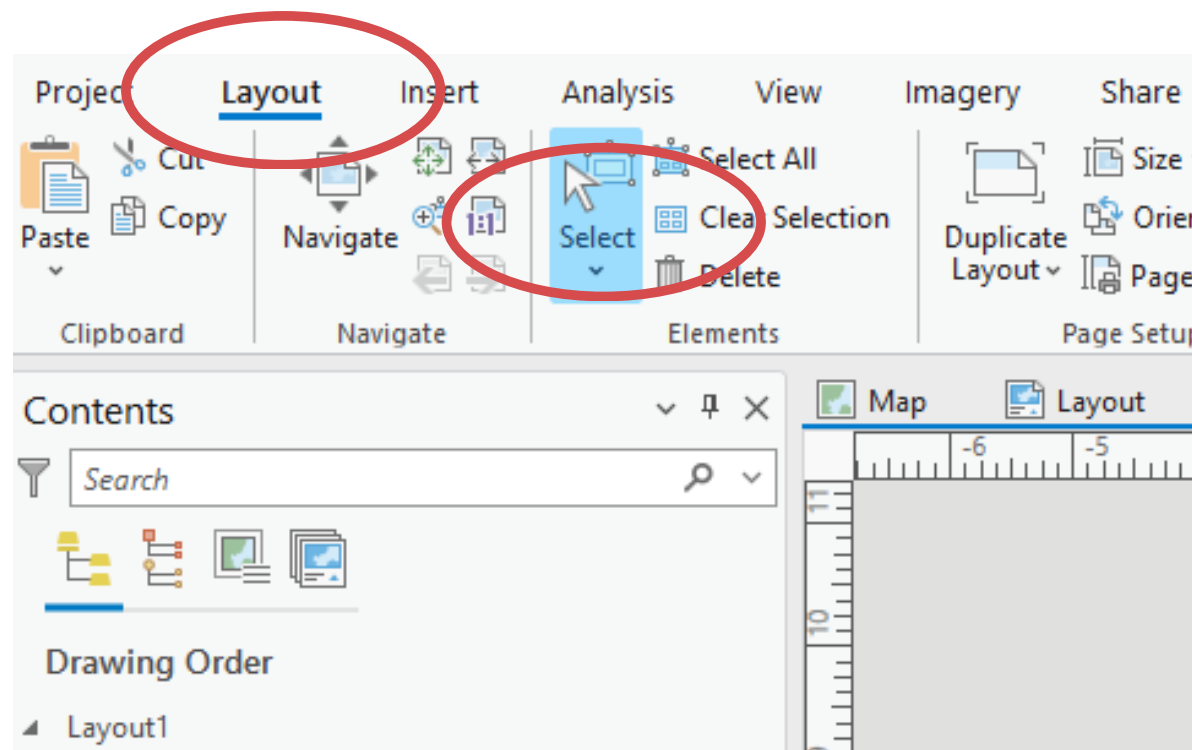
3. All of the traditional Layout tools (north arrow, scale bar, legend, graphic text etc) are on the **Insert** tab. Click on a tool to activate and then draw a box for the location for the item on the layout.



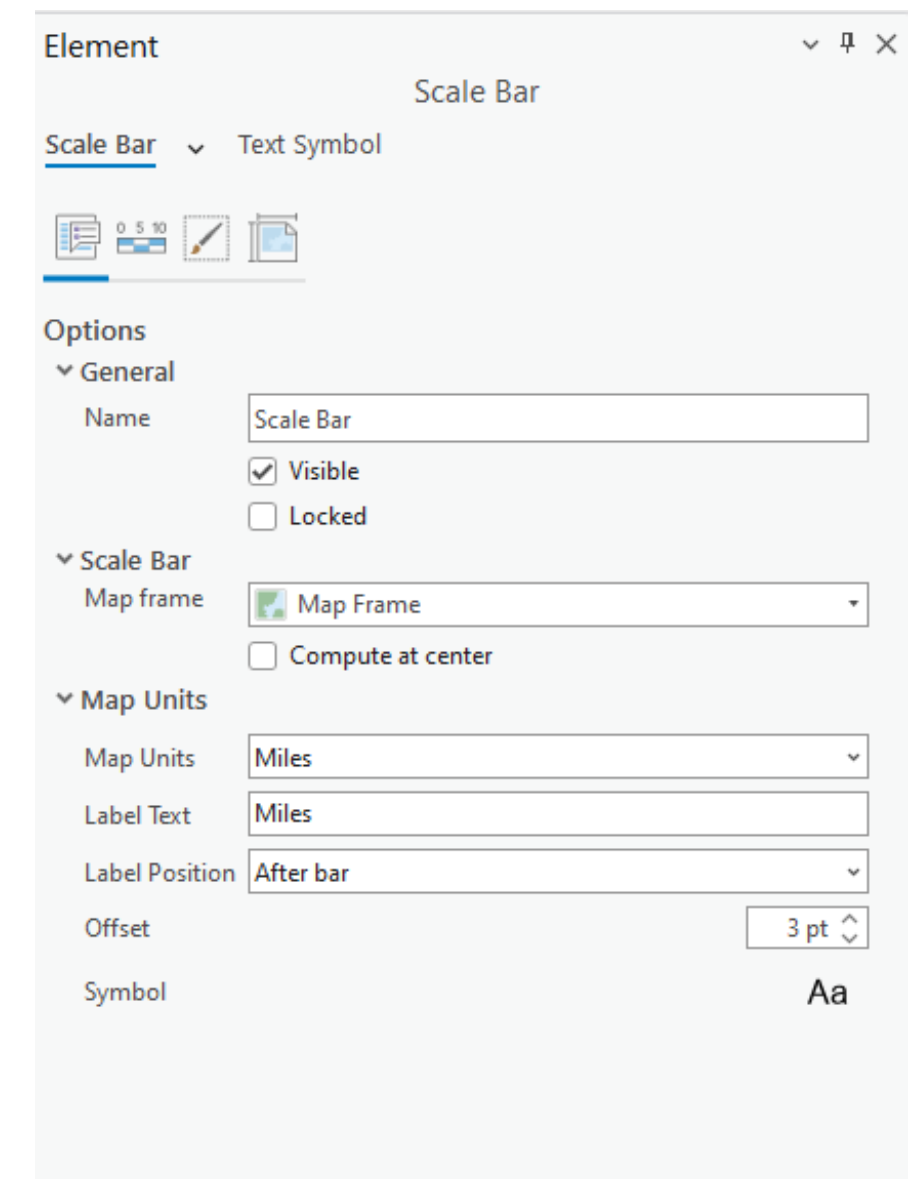
Creating Layouts

4. Each of the elements (map frame, legend, scale bar, north arrow, graphic text, etc) can be edited in the Elements pane.

On the Layout tab, click the Select tool and then select the element on the layout you would like to edit.

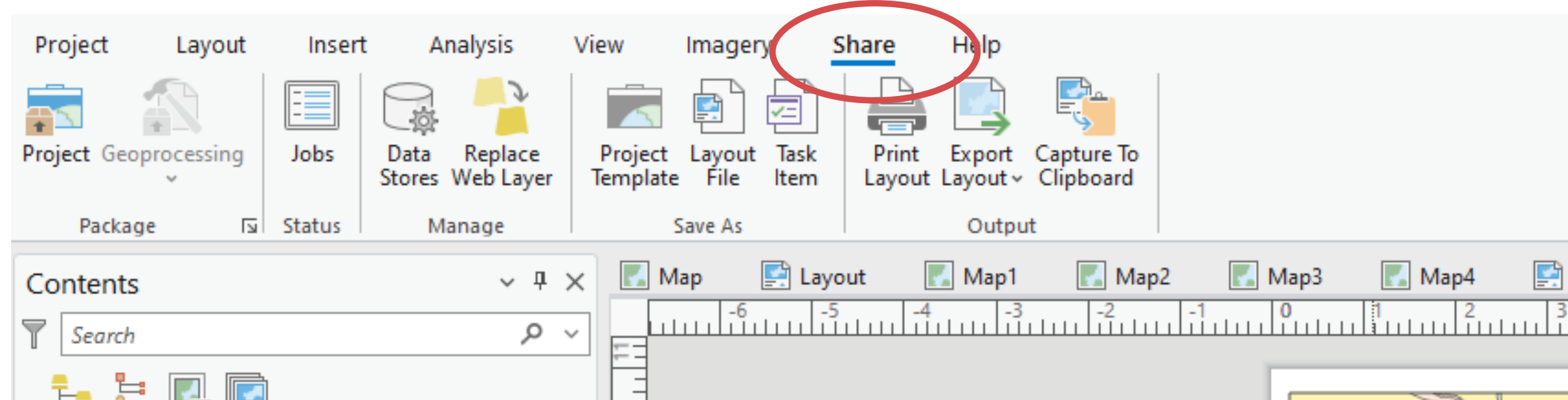


5. Right click on the selected element and choose Properties. This will open the Elements Pane where you can edit parameters.



Creating Layouts

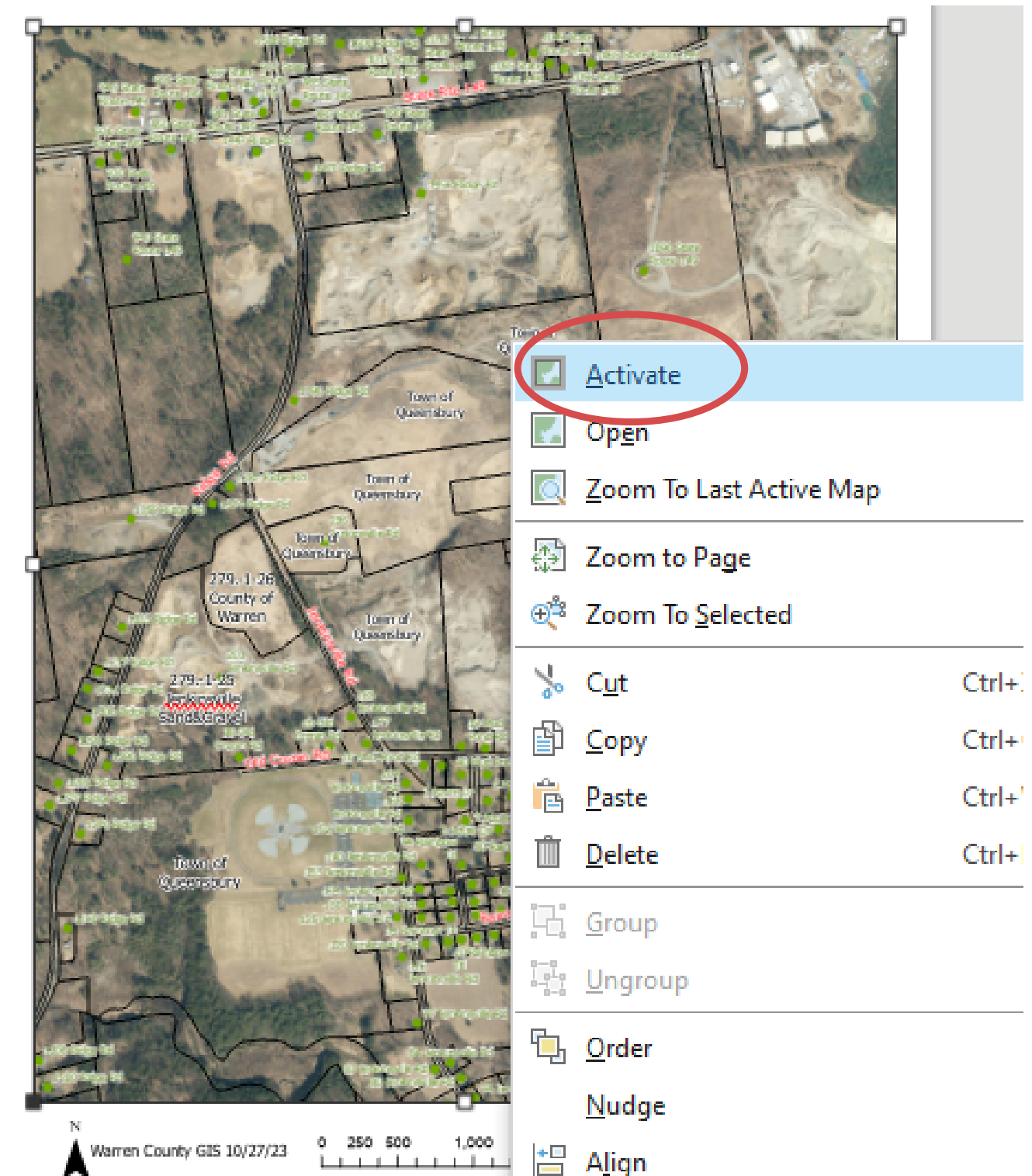
6. To print or export (to .pdf, etc) a layout, click on the **Share** tab.



Q: In the layout section, is there an easier way to move the map other than zooming to the selection?

Yes! This is a major difference with ArcMap.

Instead of the “Map Toolbar” in ArcMap, in ArcGIS Pro you need to select the data frame in the layout, right click and choose “Activate”. Then you can interact fully with the map (more than you can in ArcMap).



DEMO

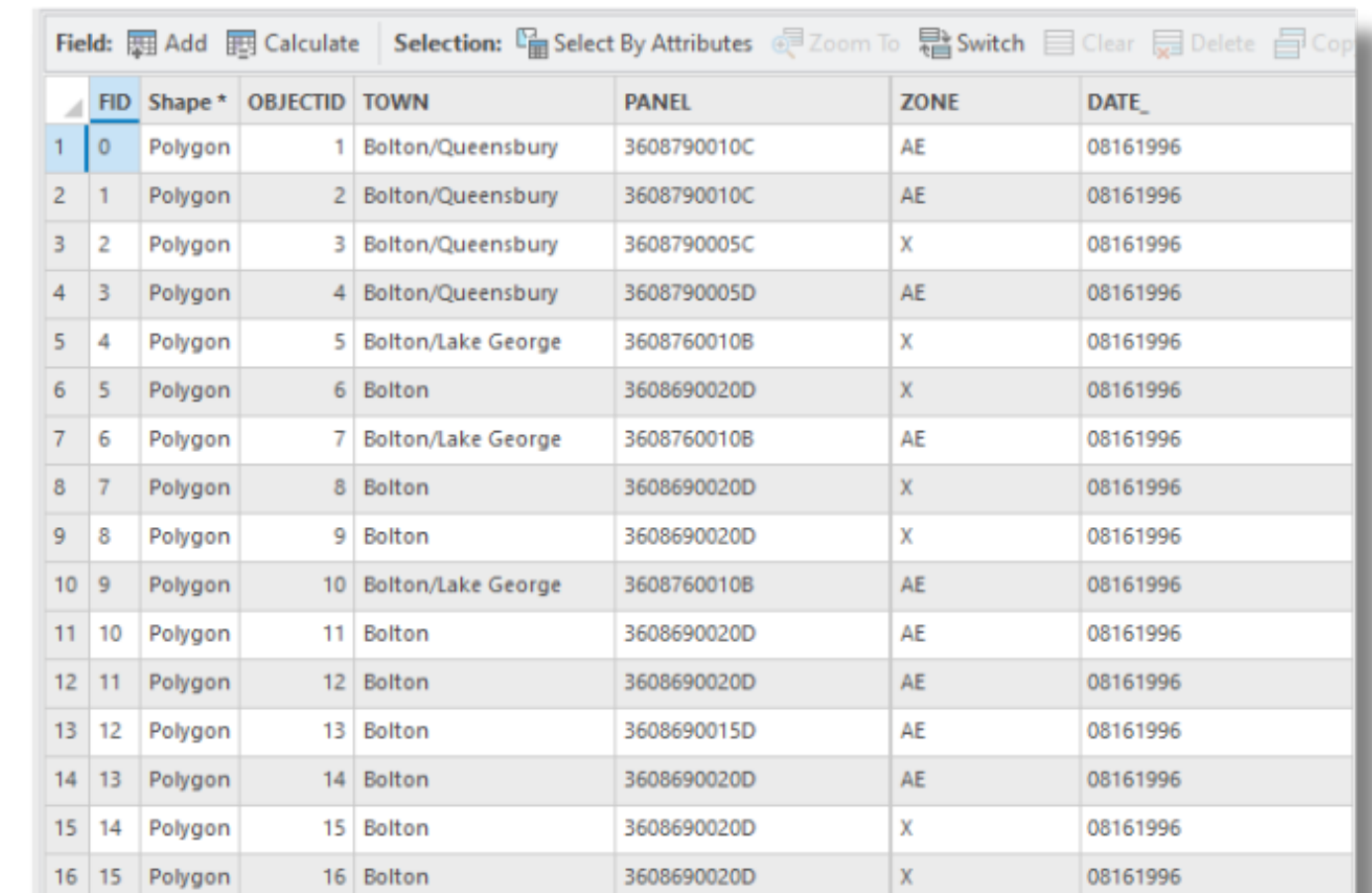


Working with Tables



Table Basics

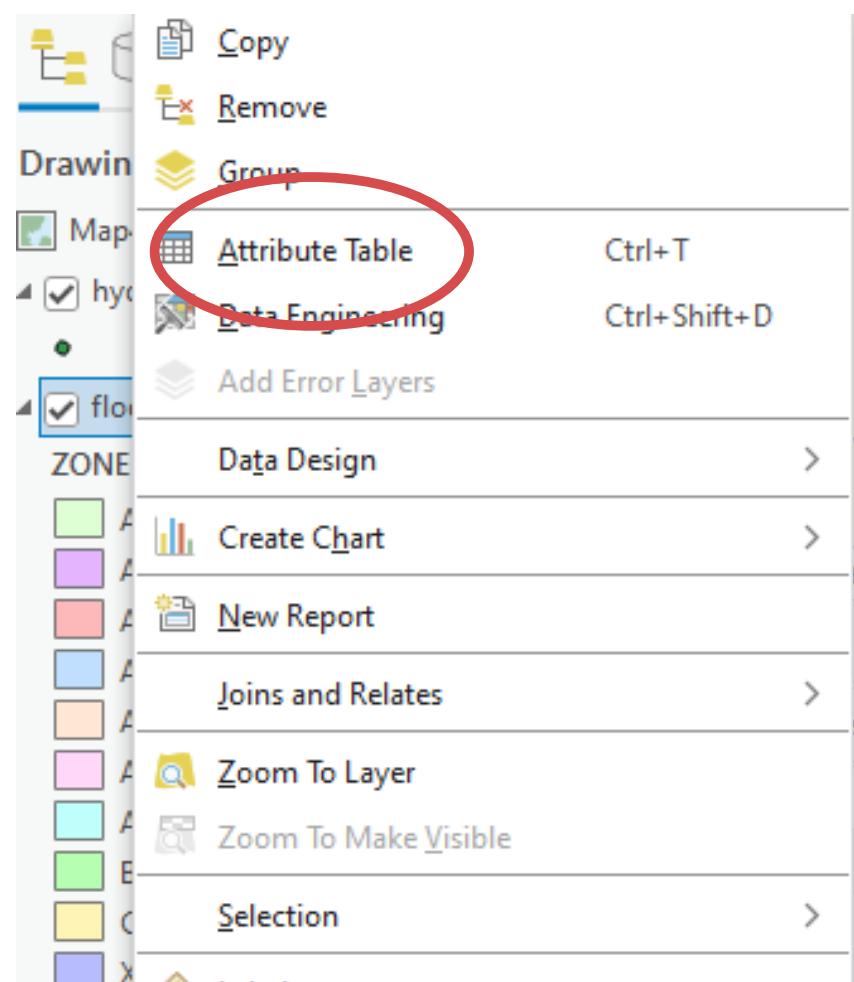
- Tables can refer to attribute tables for feature classes, or standalone tables.
- Supported types of tables: geodatabase, database, feature layer attribute table, dbase (.dbf), excel, text, ASCII, csv
- In ArcGIS Pro, you work with tables in Views. Like other Views and Panes, you can move them around and dock them and stack them however you'd like.
- ArcGIS Pro has much more flexibility for editing tables than ArcMap - it's much easier to add, delete and rename fields.



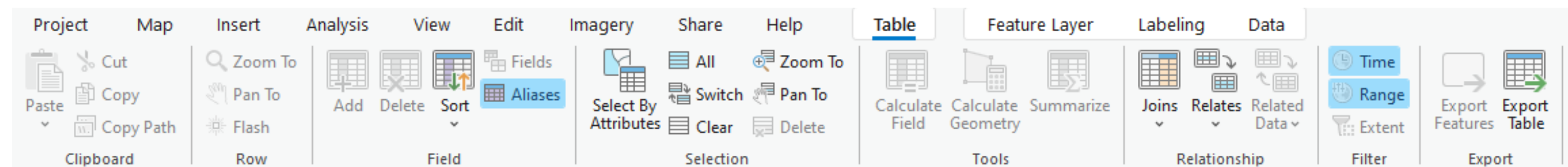
FID	Shape *	OBJECTID	TOWN	PANEL	ZONE	DATE_
1	Polygon	1	Bolton/Queensbury	3608790010C	AE	08161996
2	Polygon	2	Bolton/Queensbury	3608790010C	AE	08161996
3	Polygon	3	Bolton/Queensbury	3608790005C	X	08161996
4	Polygon	4	Bolton/Queensbury	3608790005D	AE	08161996
5	Polygon	5	Bolton/Lake George	3608760010B	X	08161996
6	Polygon	6	Bolton	3608690020D	X	08161996
7	Polygon	7	Bolton/Lake George	3608760010B	AE	08161996
8	Polygon	8	Bolton	3608690020D	X	08161996
9	Polygon	9	Bolton	3608690020D	X	08161996
10	Polygon	10	Bolton/Lake George	3608760010B	AE	08161996
11	Polygon	11	Bolton	3608690020D	AE	08161996
12	Polygon	12	Bolton	3608690020D	AE	08161996
13	Polygon	13	Bolton	3608690015D	AE	08161996
14	Polygon	14	Bolton	3608690020D	AE	08161996
15	Polygon	15	Bolton	3608690020D	X	08161996
16	Polygon	16	Bolton	3608690020D	X	08161996

Working with Tables

1. Open an attribute table for a layer by right clicking on it and choosing Attribute Table

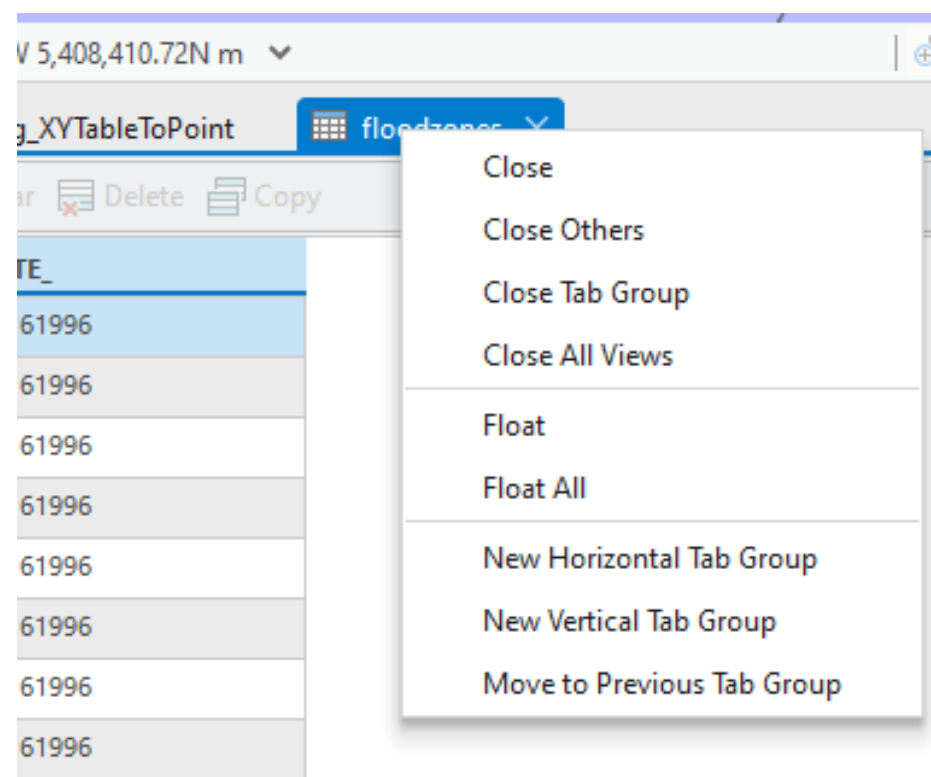


2. If desired, dock/move the table. Once a table is opened, a Table tab is added. This is where the majority of the Table tools are located.

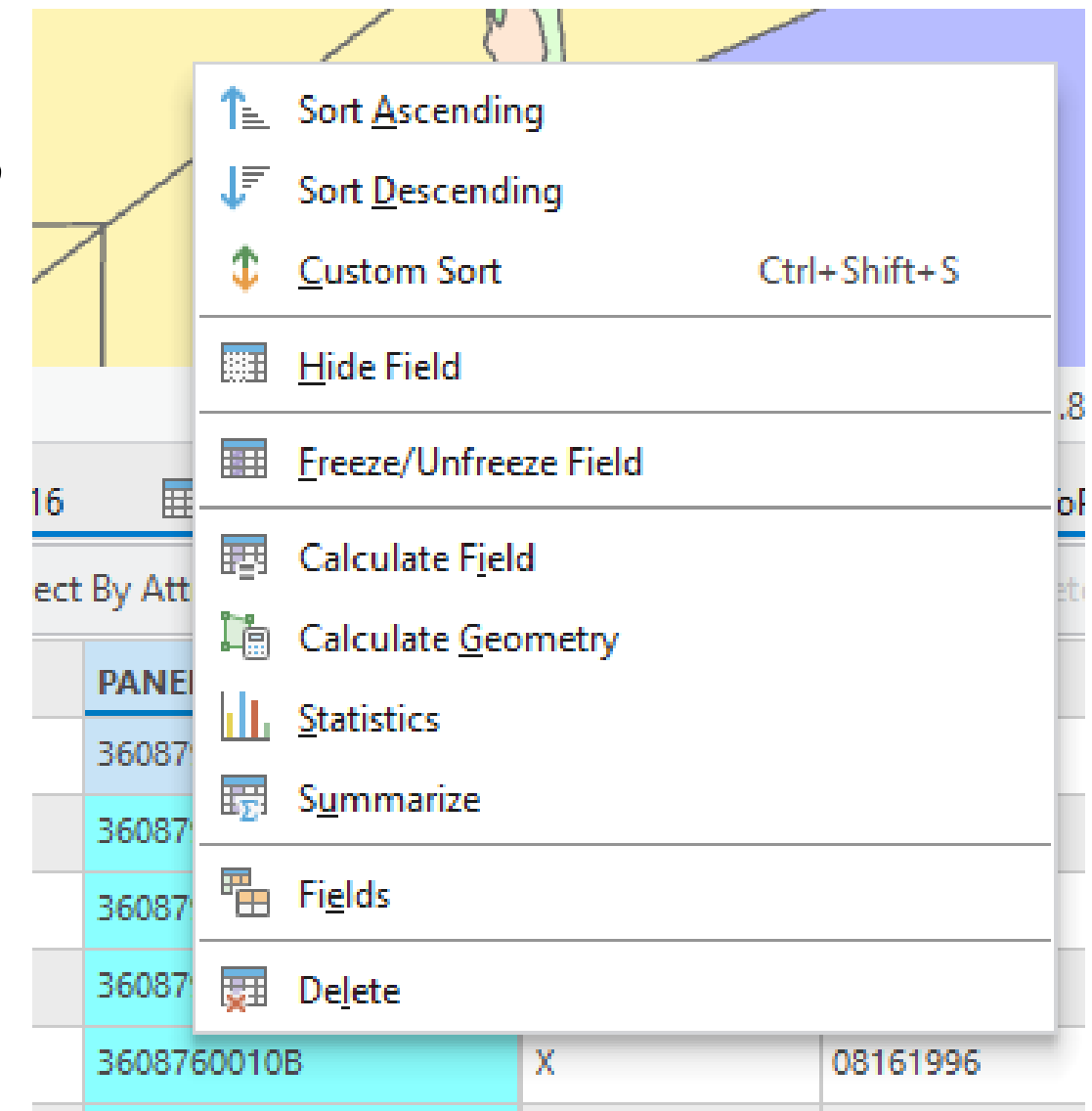


Working with Tables

3. Most of the tools are similar to ArcMap (Joins, Relates, Select by Attributes, display of selected records, etc). Multiple layers can be tabbed across the top. Right click on a tab for table arrangement options.



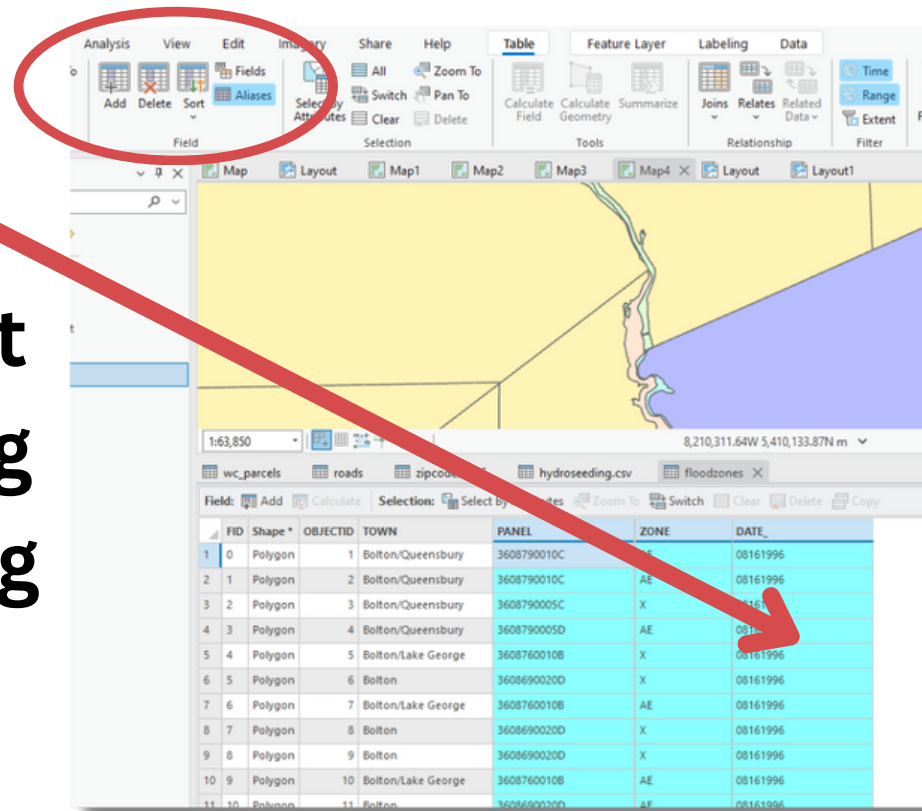
4. Right click on a field for field options (calculate field, calculate geometry, sort, statistics, etc).



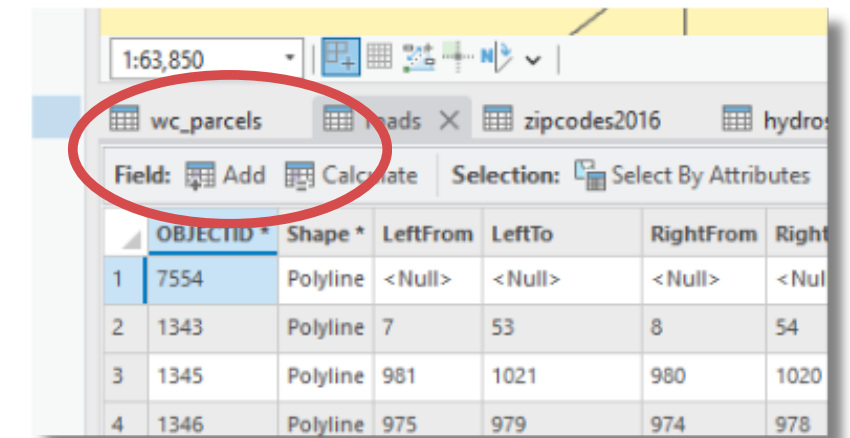
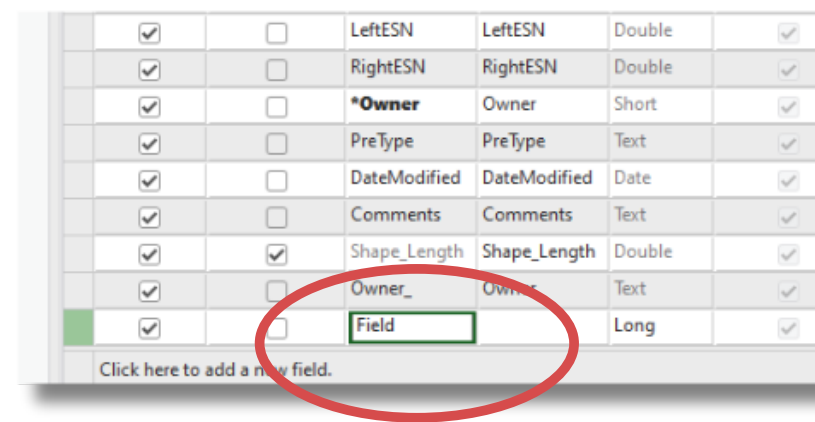
Working with Tables

5. Very different: managing fields.

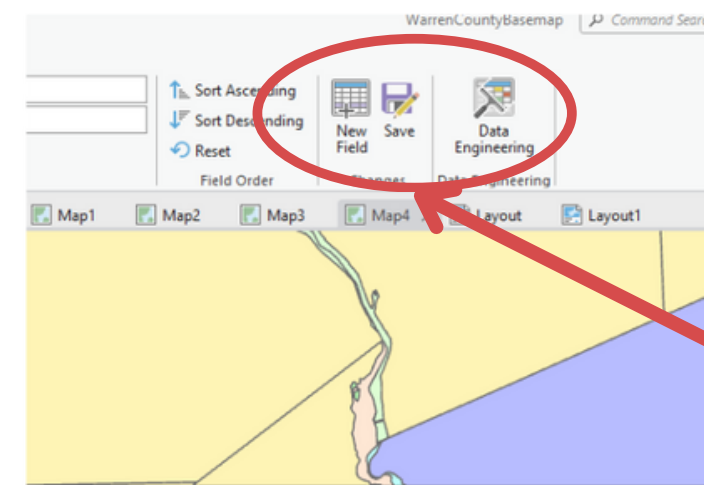
Multiple fields can be deleted at once by selecting them and clicking the Delete tool.



Click on the Add tool to add multiple fields at once and/or rename fields.



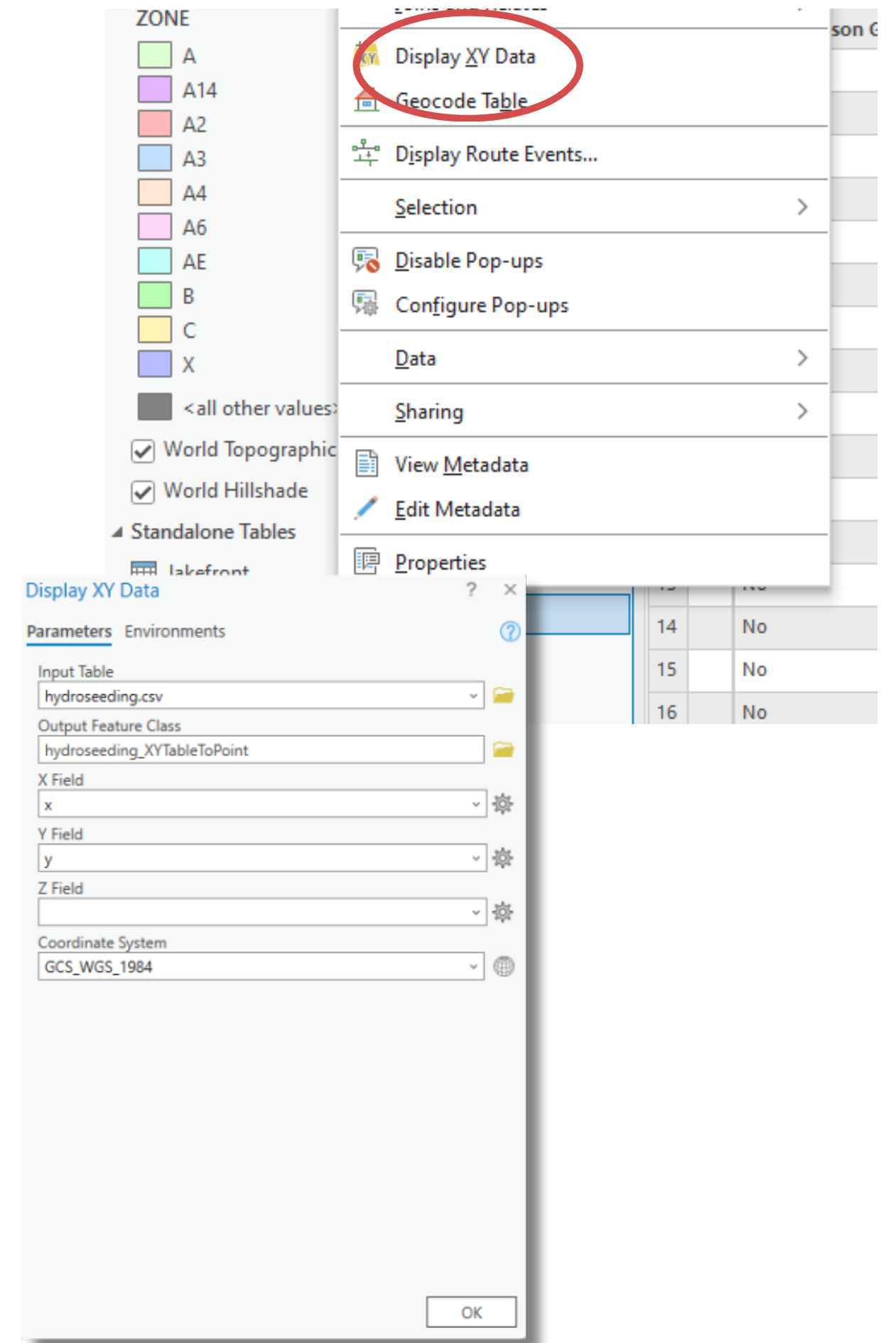
Click on the Add tool to add multiple fields at once and/or rename fields. Double click on a field name to rename it. Click in an empty row at the bottom to add fields. Click Save tool when finished.



Q: Please talk about excel and .csv point data sets

There is more flexibility with importing tables in ArcGIS Pro than there is in ArcMap. Excel files can come in in native format, which is great! However, tables need an ObjectID field to be used fully, so standalone Excel tables should be converted to .dbf or brought into a geodatabase. Use Excel to Table tool.

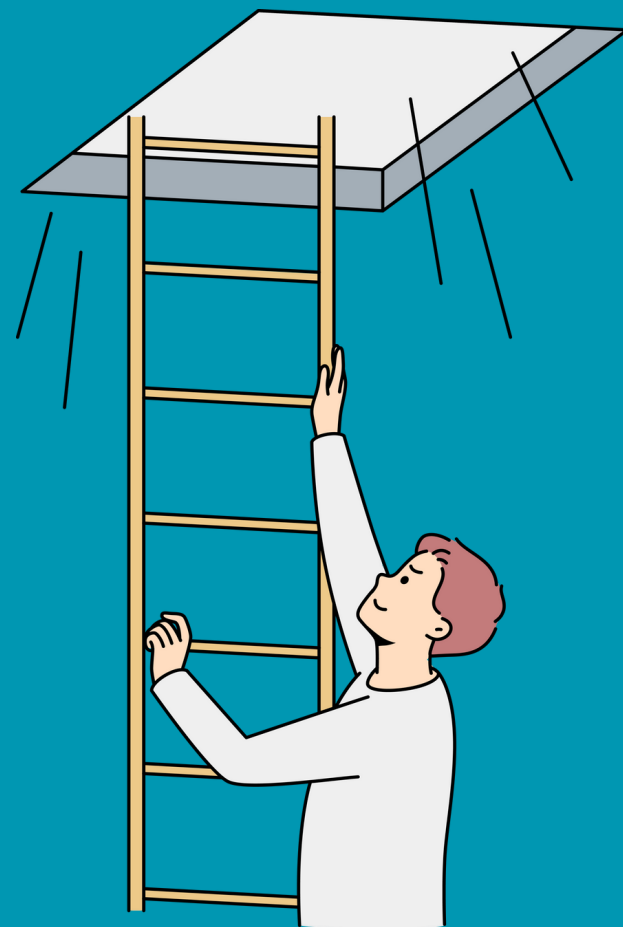
Tables (Excel or .csv) that have XY data can be converted to point feature classes using the XY Table to Point tool.



DEMO



Migrating from ArcMap



Q. As I use Pro I find many tools and interfaces that I found to be quite handy in ArcMap are either no longer an option or I cannot find them to use, or they are buried in layers that don't necessarily align with their location/uses in ArcMap.

One of the biggest pain points of transitioning is that the tools are in all different spots or “buried”. Here are some tips for helping to get over that hurdle:

- **Take advantage of Customize and the Quick Access toolbar. Put your favorite tools in easy to locate spots.**
- **Take time to go through all the tabs and dropdown menus.**
- **Use the Search boxes - there are tons of them.**
- **Use right click menus - lots of tools are located in them.**
- **Hover! Every tool tells you what it does.**

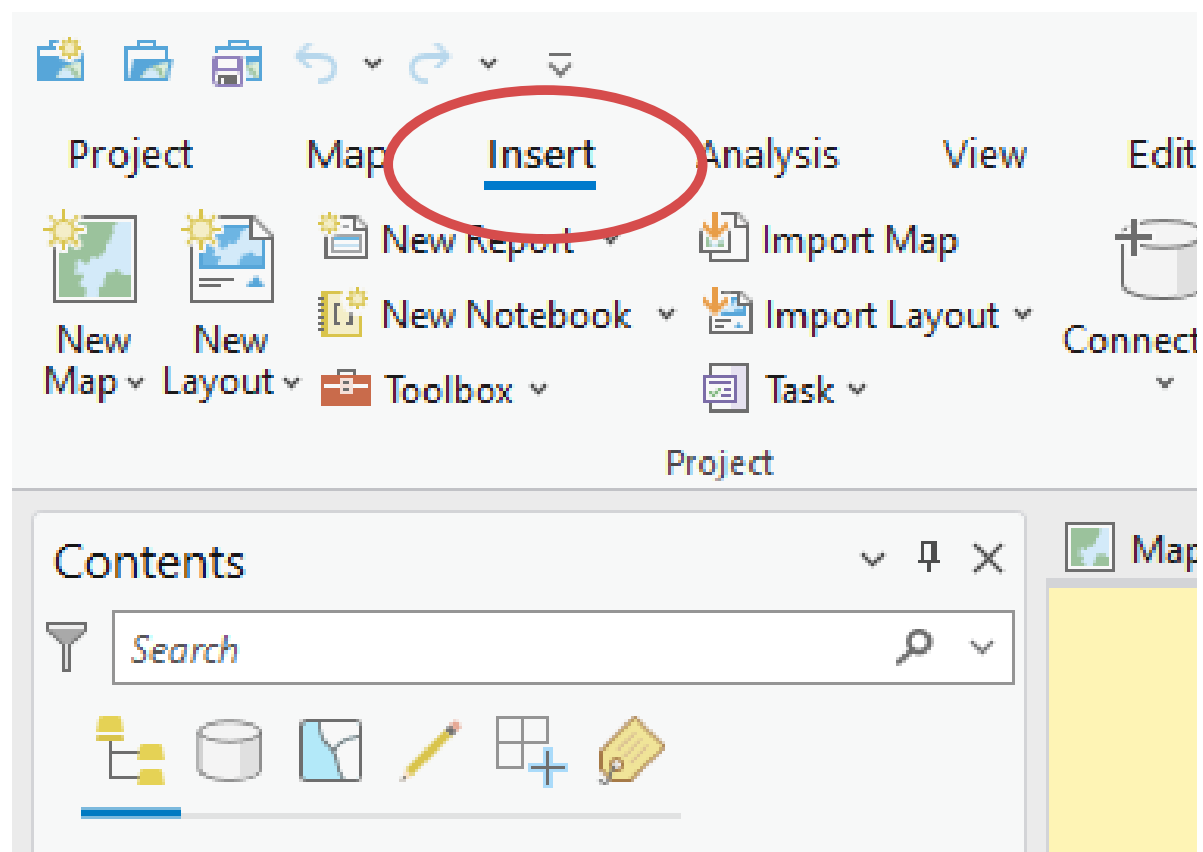
Transitioning Data

- In ArcMap, as in ArcGIS Pro, the data is stored separately from the project file. The project file contains tools, maps, layouts, symbology, labeling, and POINTERS to the data, but not the actual data itself.
- There are three common types of data used in ArcMap: shapefiles, personal geodatabases, and file geodatabases. Shapefiles and file geodatabases can be opened directly in ArcGIS Pro (some file geodatabase features will need to be upgraded). Most raster data will come in with no issue, but raster catalogs need to be migrated to mosaic datasets. (There is a simple tool to do this).
- Personal geodatabases are not supported by ArcGIS Pro and will need to be converted either in ArcCatalog or by using a sample conversion tool in ArcGIS Pro, which can be [downloaded here](#).

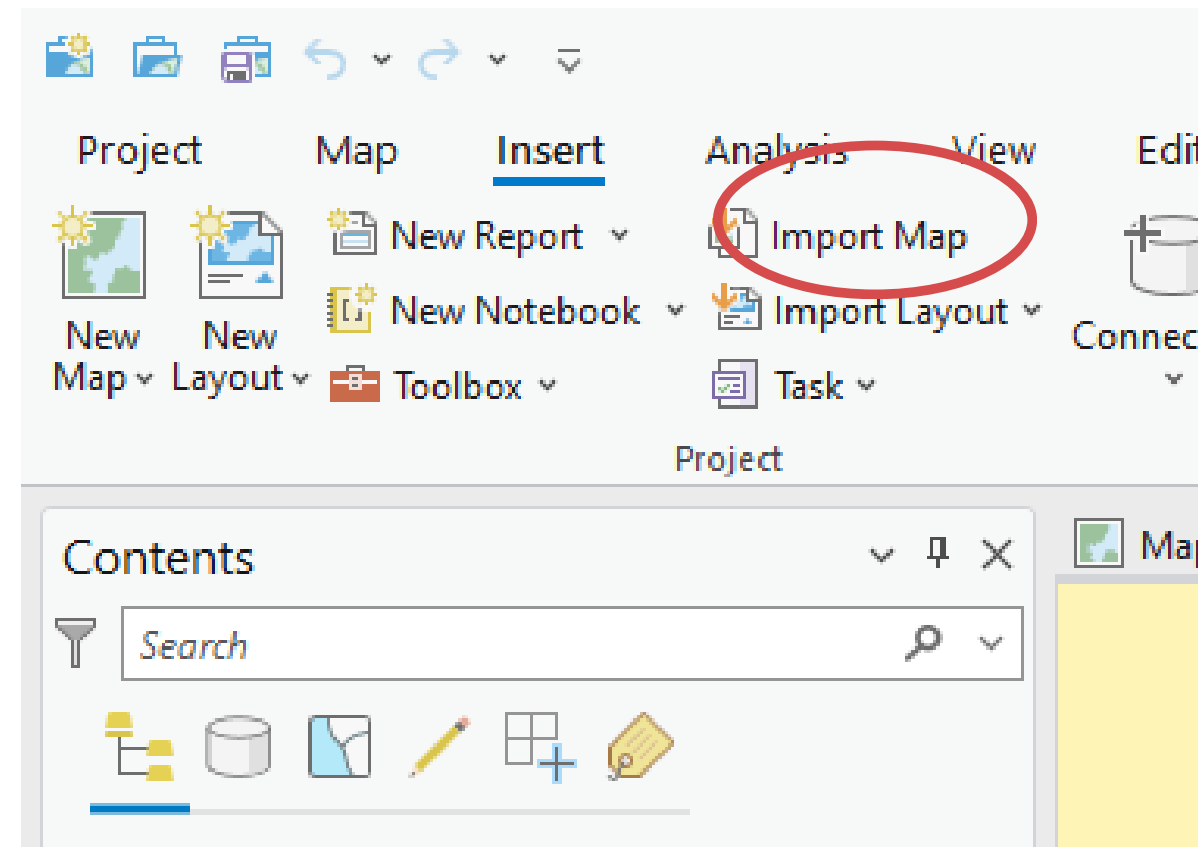
Transitioning Projects

Maps and Layouts can be imported using a tool in ArcGIS Pro.

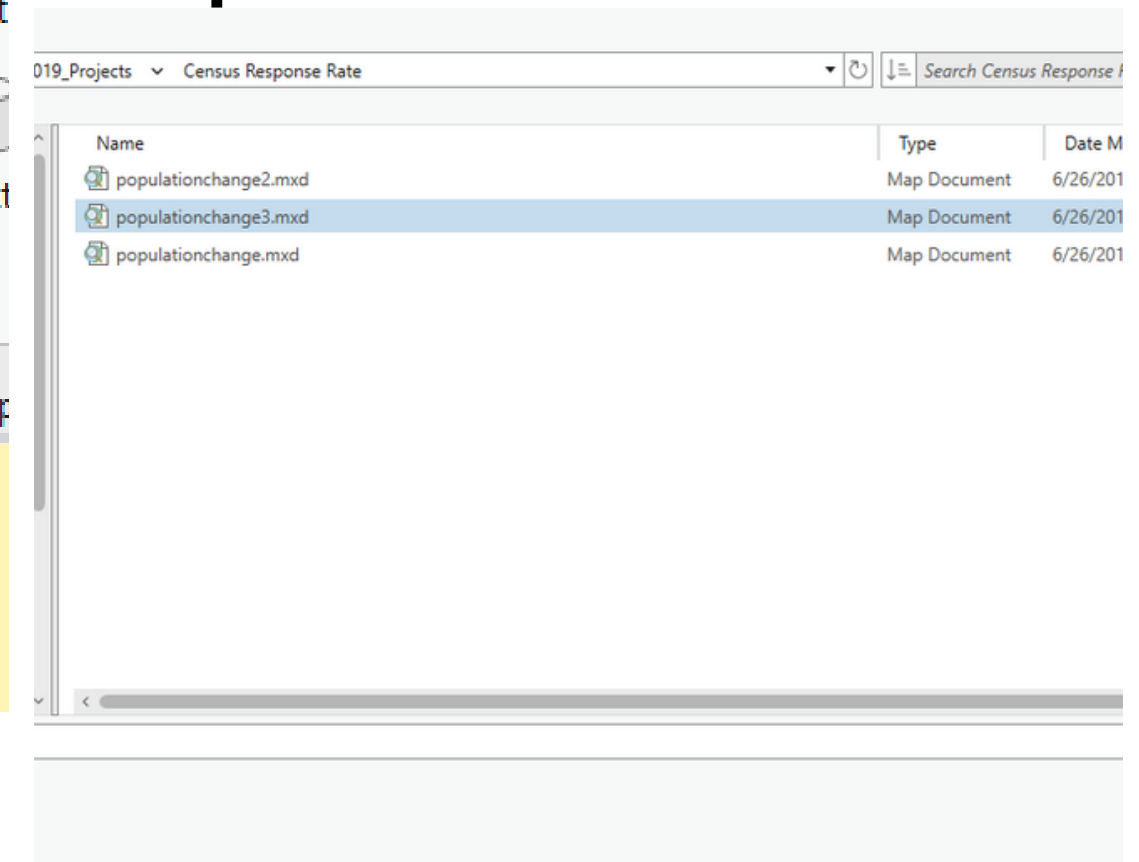
1. Click on the Insert tab



2. Click on the Import Map tool



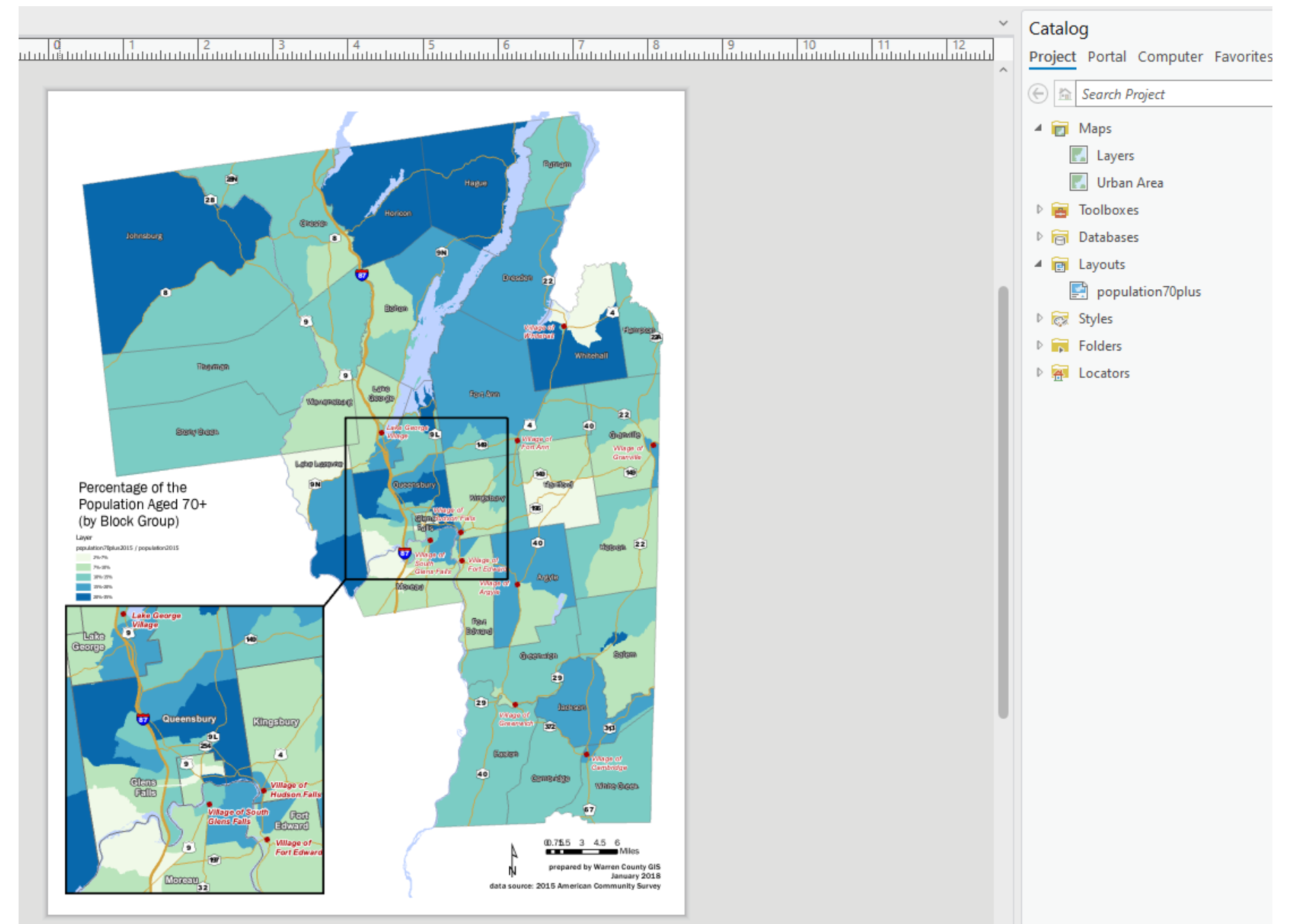
3. Navigate to and select the .mxd file you want to import. Click Ok.



Transitioning Projects

4. A new map with the same name as the data frame in your project will be added to ArcGIS Pro. If there was a layout in the project, it will be added as well. If there was more than one data frame in your ArcMap project, each one will be added as a new map.

REMEMBER that ArcGIS Pro can have more than one layout and map, so you can import multiple .mxds into a single ArcGIS Pro project.



Transitioning Projects

Also REMEMBER:

the data does NOT get imported into the new project geodatabase - it's still in the same spot it was previously

*Q.
Will we still be
able to use files
from ArcMap
after NRCS shuts
down the
program?*

Yes. Remember data is separate from projects, so it can still be accessed (aside from personal geodatabases).

ArcMap Projects (*.mxds) can be used after importing to ArcGIS Pro.

Custom tools will be lost if they have not been redeveloped for Pro.

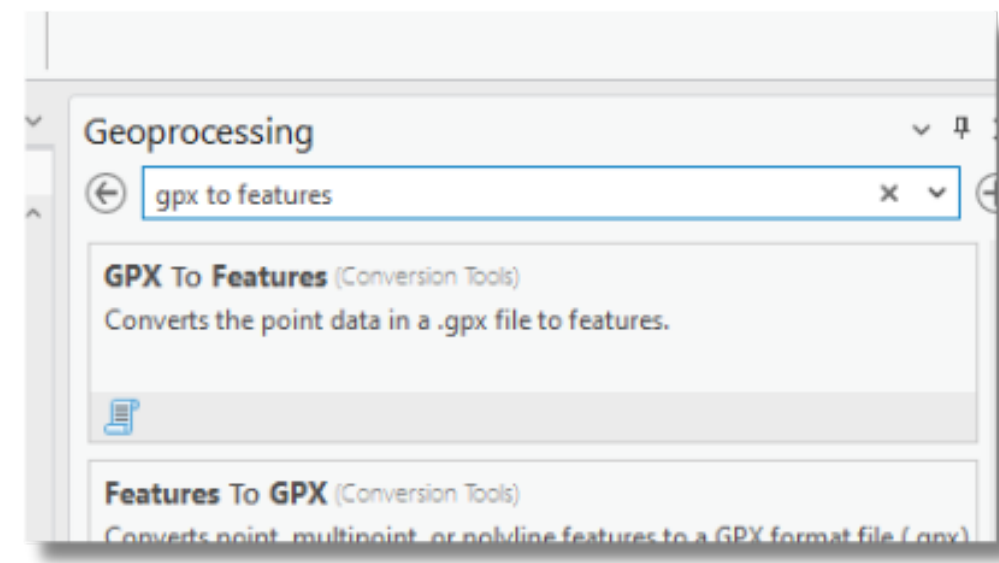
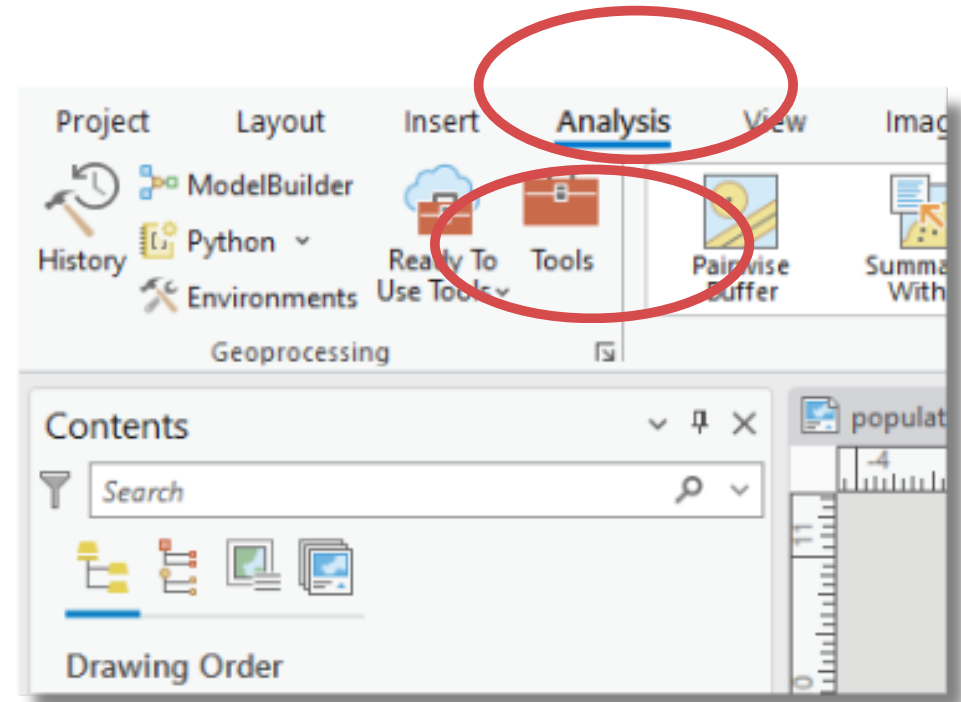
Using Field Collected Data



Q. How can I import GPS survey data into ArcGIS Pro? How do I work with it?

For “old school” GPS data (not collected using Field Maps or Survey123):

1. Export data out of your GPS unit into .gpx format (this is the standard GPS interchange format).
2. In ArcGIS Pro, click on the **Analysis** tab and then click on Tools
3. In the search bar, type “gpx to features”
4. Click on the **GPX to Features** tool. Select your GPX file and specify the output location (it can go in your project geodatabase).
5. Work with it like you would any other layer.

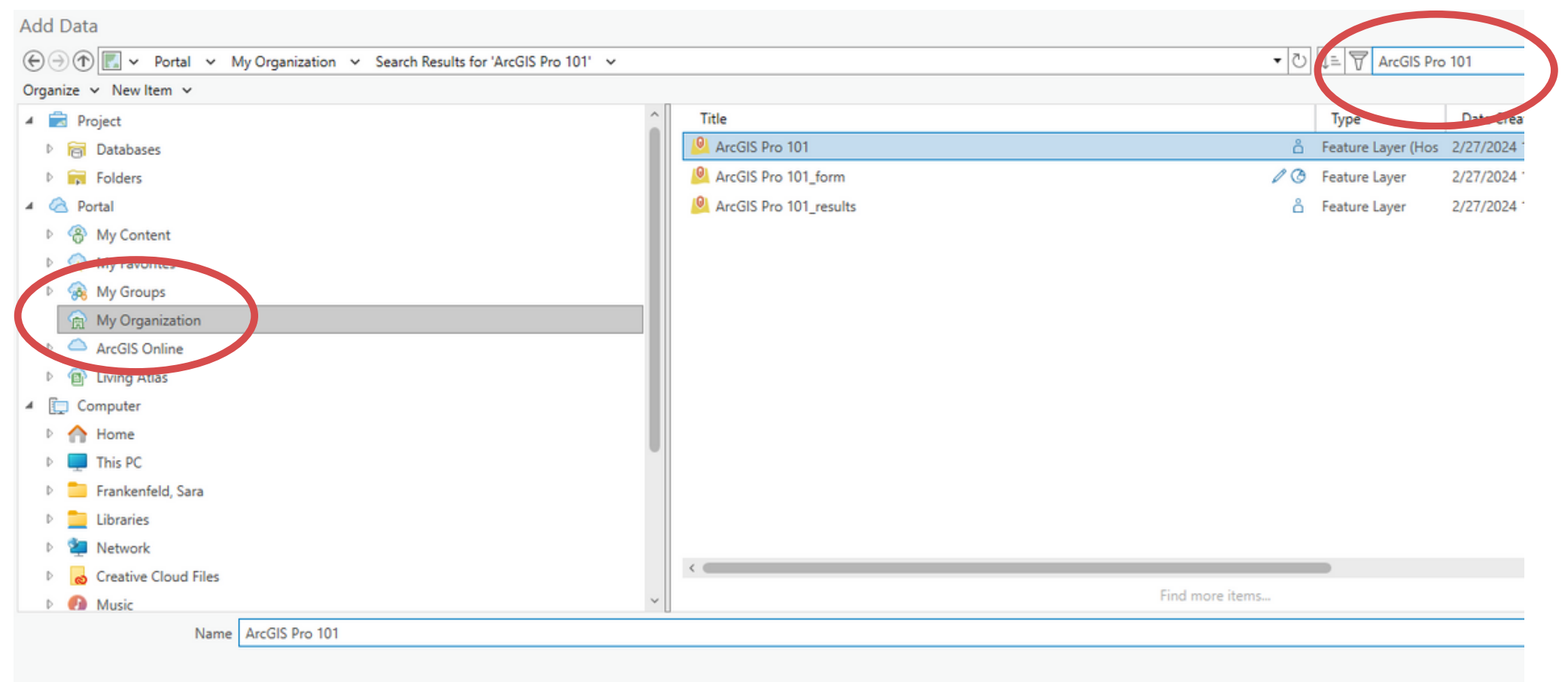


Using Field Data from Field Maps or Survey123

Data collected via the Field Maps or Survey123 apps is stored in a feature dataset in ArcGIS Online. It can be accessed via the “Add Data” button on the Map tab or via the Catalog Pane. Search in “My Organization” under Portal to find field data collected by someone in your office.

Search for it by name and add it to a map.

Remember it is live data! If it is still being used for data collection and you want to edit the data, make a copy of it.



DEMO



Questions and Answers



Resources for Additional Questions

How to Mosaic a DEM

How to Delineate a Watershed

How to Calculate the Volume of a Basin

How to make a pivot table

ESRI Academy - lots of good free classes!

Questions?

