



Getting started with ArcGIS Pro

Tool of the future

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Built for online



In the beginning...

- On the first day ESRI gave us
 - Arc/Info (pre-1999)
 - ArcView (day 1.6)
- On the second day ESRI gave us
 - ArcMap 8.0 (1999)
- On the third day ESRI gave us
 - ArcGIS Desktop 8.1 (April 24th, 2001)
 - **ArcGIS Online**
- On the fourth day ESRI gave us
 - ArcGIS 9.0 (May 11th, 2004)
- On the fifth day ESRI gave us
 - ArcGIS 10.0 (June 29th, 2010)



In the beginning...

- On the sixth day the GIS people cried out that ArcGIS Online is the future of GIS. We need a better tool.
- On the seventh day ESRI gave us
 - ArcGIS Pro (January, 2015)
 - And it was OK 😞
- The people cried out for something better
 - In June, 2017 ESRI gave us ArcGIS Pro 2.0
- **And it is awesome**
- And there was much rejoicing
 - I was there, I remember



What is ArcGIS Pro?

- Combines various elements of ArcMap
- Similar functionality to ArcMap
- Built for ArcGIS Online
 - Portal (follows AGOL)
- Feature Services
 - Creating
 - Managing
- Multiple
 - Maps
 - Layouts
- And more



What I will not be talking about

- Initial installation
- Licensing
- Network administration
- Database set up and administration
- Everything
 - Meaning there is enough material that a discussion could last weeks



What we will talk about

- Using ArcGIS Pro for the first time
- Basics of a new Project
 - I will talk about basics, even though some things may not feel basic
 - First time setup
 - Start a new Project
 - Add data
 - Customize a Domain
 - Customize a Feature Class
 - Pop-ups
 - Symbology
 - Labels



Map exchange document vs Arc GIS Project file

- ArcMap – **M**ap **E**xchange **D**ocument
 - MXD
 - One map
 - One layout
 - Common Toolbox
- **ArcGIS P**roject File(**X**)
 - APRX – Essentially creates a file system that links multiple functions together
 - Multiple maps
 - Multiple layouts
 - Project specific toolbox



MAJOR DIFFERENCES

- File Geodatabase, SDE, Feature services, or ShapeFiles
- ~~Personal Geodatabase~~
- Cannot edit Geometric Networks
- Auto backup of project
- Ease of switching between portals
- Edit sessions are optional
 - Can cause havok
- Editing can be more cumbersome
- Editing no matter what the source



Initial set up: Online connection(s)

- Have your licensing set up
- Connection documents
 - URL
 - Login
 - Password
- Start ArcGIS Pro >> Select Settings



Initial set up: Online connection(s)

- Select Portals
- Add Portal
 - Add first connection

The screenshot shows the ArcGIS Online interface. On the left, a blue menu is open with the 'Portals' option highlighted. A red arrow points from the 'Select Portals' bullet point to the 'Portals' menu item, and a pink arrow points from the 'Add first connection' sub-bullet to the 'Add Portal' button. The main content area displays a list of portals:

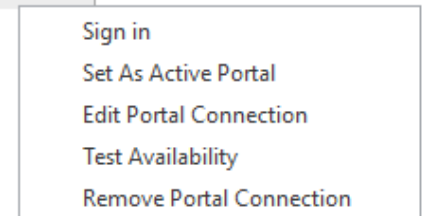
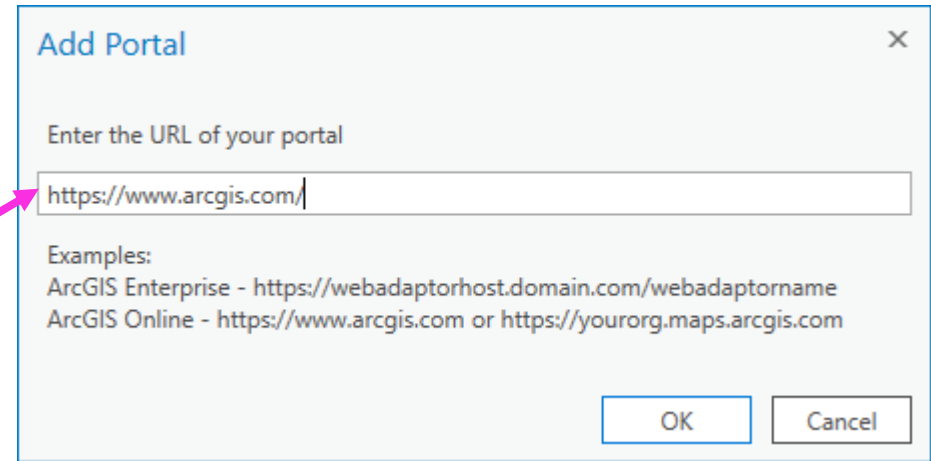
	https://www.arcgis.com/	Available : Signed in as rborcher_GRE	...
	https://dmaps.greenergy.com/arcgis/	Available : Not signed in	...
	https://maps.greenergy.com/arcgis/	Available : Signed in as rborchert@GREnergy.com	...

A yellow box highlights the text 'Existing connection(s)' in the center of the portal list. Below the list, there is a checkbox labeled 'Sign in using browser' which is checked, and two buttons: 'Add Portal' and 'Refresh'.



Add Portal

- Text and Case sensitive
 - FULL URL
- Select ellipses to
 - Sign in
 - Set As Active Portal
 - Edit Portal Connection
 - Test Availability
 - Remove Portal Connection
- Shows currently active portal
- Shows portal status



Sign In

- Sign into the portal connection you want to work in
- ArcGIS Online
 - AGOL
 - Most common
- Portal
 - Enterprise GIS
 - Less common

Portals

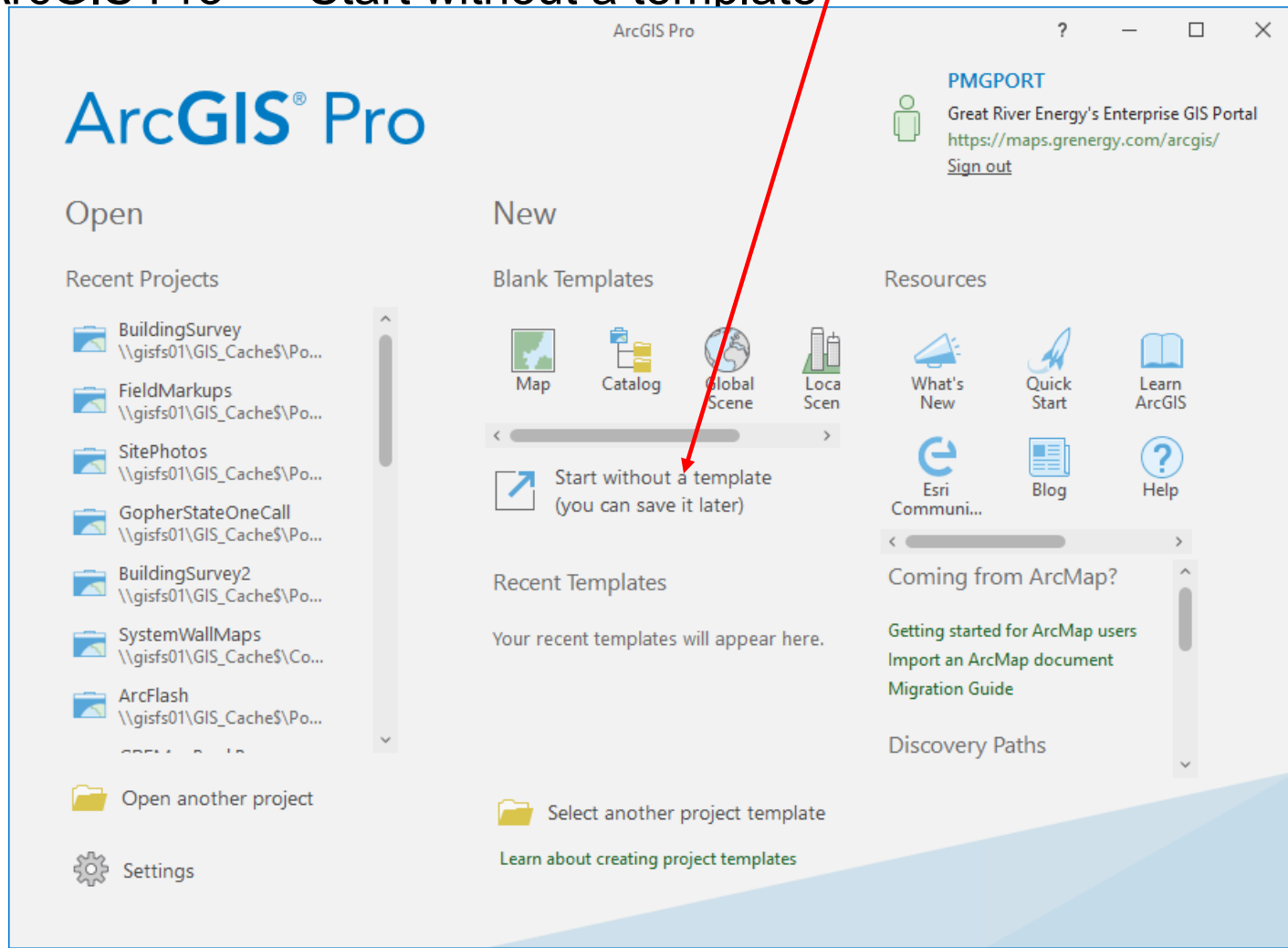
	https://www.arcgis.com/ Available : Signed in as rborcher_GRE
	https://dmaps.greenergy.com/arcgis/ Available : Not signed in
	https://maps.greenergy.com/arcgis/ Available : Signed in as rborcher@GREnergy.com

- Go back to the home screen



Initial set up

- Start ArcGIS Pro >> Start without a template



Untitled – ArcGIS Pro

- Pro will launch with an untitled project
- Why use untitled
 - Perform functions you don't need to save
 - Set up connections
 - Folders
 - Databases
 - Customize settings



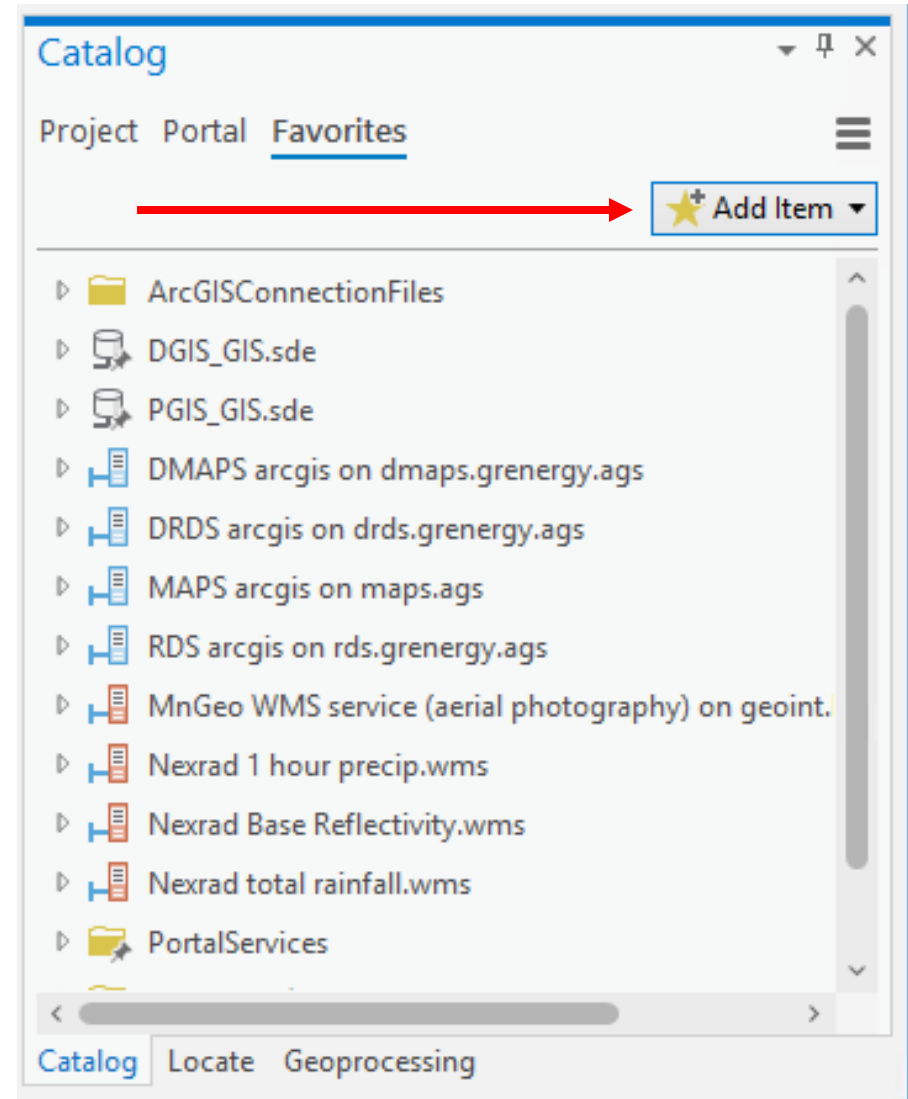
Familiarize yourself with the layout

The screenshot shows the ArcGIS Pro interface with several key areas highlighted and annotated:

- Quick Access:** A yellow highlight on the top-left toolbar.
- Project name:** A green highlight on the top-right window title bar.
- Current log in and portal:** A cyan highlight on the top-right user and portal information.
- Menu buttons:** A red highlight on the top ribbon tabs (Project, Map, Insert, etc.).
- Menu items:** A grey highlight on the ribbon icons.
- Contents:** A large white box on the left side with the text: "Table of contents and so much more will be here when a project is started".
- Maps, layouts, attribute tables, and more will go here:** A large white box in the center of the main workspace.
- Catalog:** A panel on the right side showing a tree view of project resources. A red arrow points from the "Favorites" section to the "Maps & Layouts" section.
- Connections Favorites Databases Portal Folders And more:** A list of items in the Catalog panel, with "Favorites" highlighted in red.
- Maps & Layouts:** A green label next to the "Maps & Layouts" section in the Catalog panel.

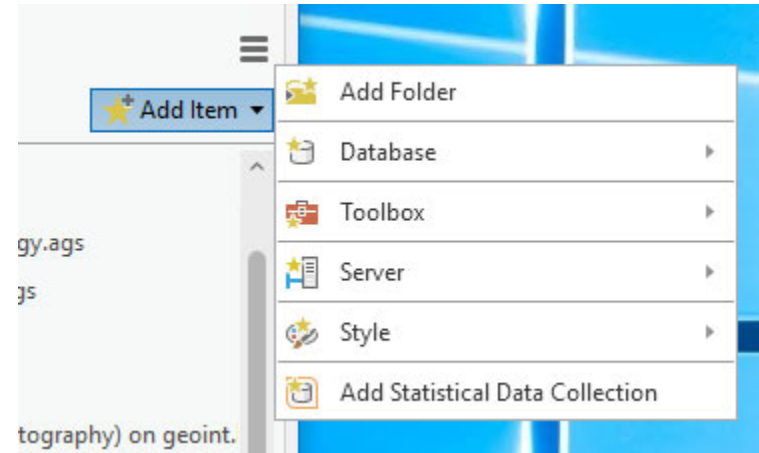
Set up Favorites

- One time set up of connections
 - Folders
 - Databases
 - Toolboxes
 - Servers
 - Styles
 - Statistical Data Collection
- Setting up Favorites will give you access to them for all new and existing projects
- Add Item to begin



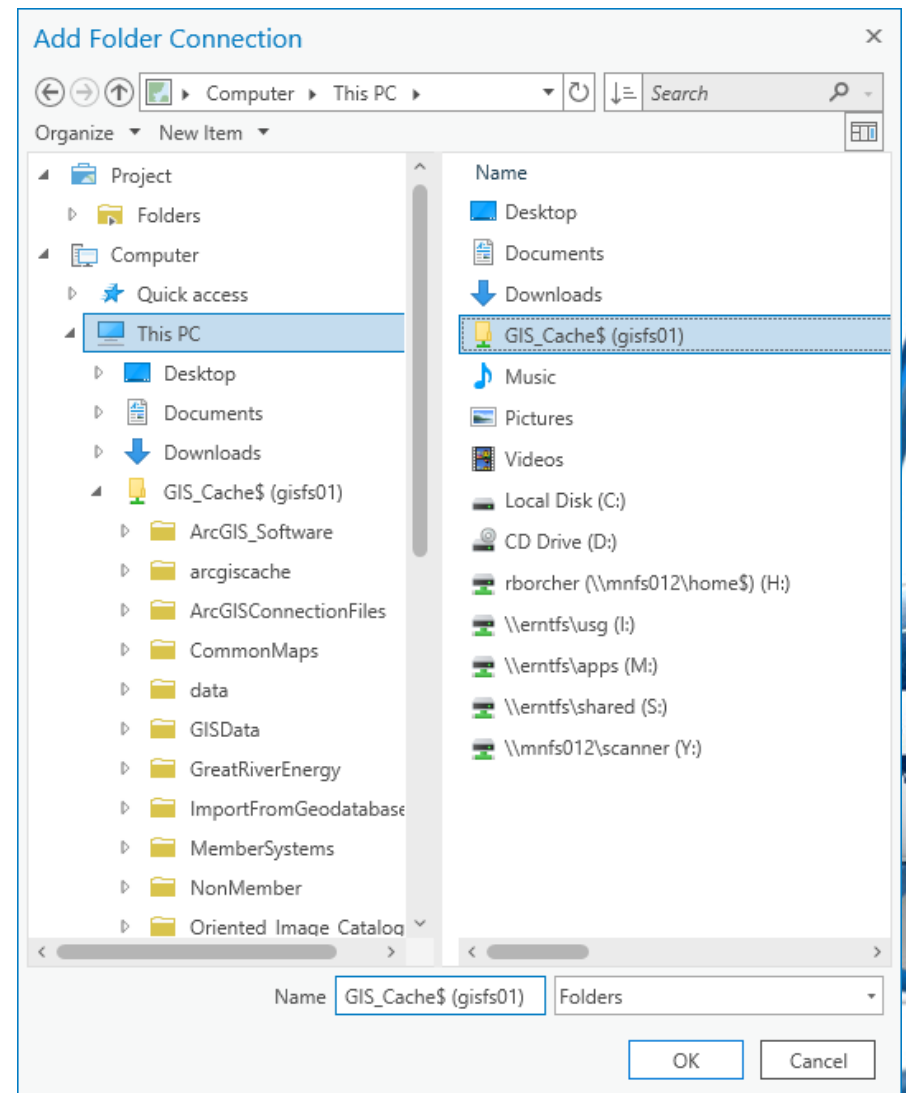
Add your first connection

- Six connection options
 - **Add Folder** ✓
 - **Database** ✓
 - Toolbox
 - **Server** ✓
 - Style
 - Add Statistical Data Collection



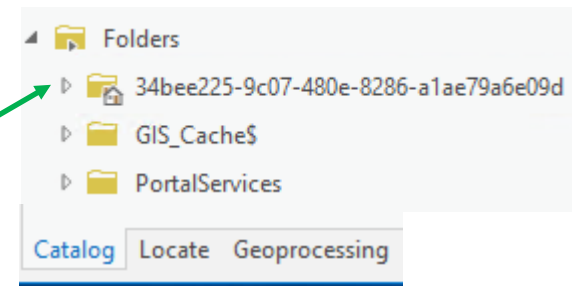
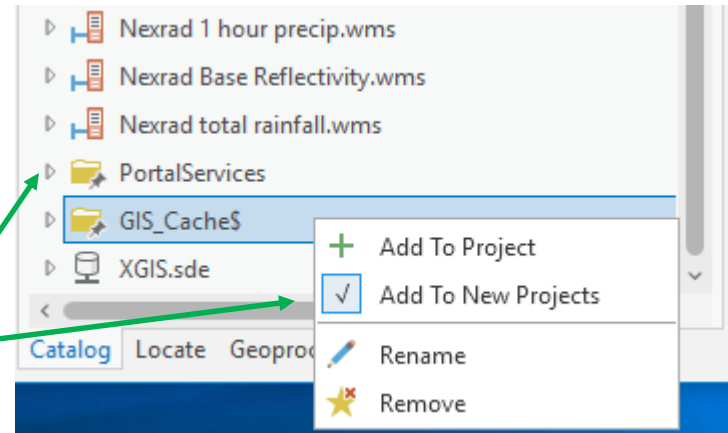
Add Folder

- Opens a Windows Explorer window
- Navigate to the folder you can to connect to and select OK
- Tip: we use a common folder with a defined structure to store all projects and files in a pre-defined manner



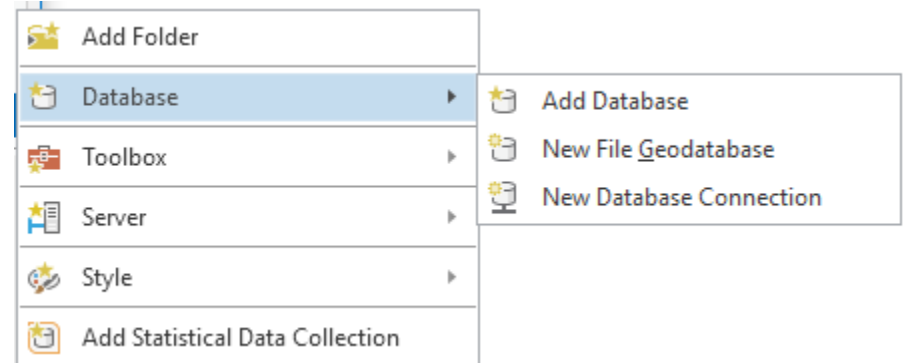
Add to New Projects

- The connected folder will appear in your list of folders
- Right click on the folder
 - Add to Project
 - Add the folder to your current project
 - Add to New Projects
 - Add this folder to all new projects
- Add sub folders
 - Portal Services (example)
- Folders in Catalog
 - Shows the folders in the catalog
 - 64-bit folder???
 - Will cover this in a bit



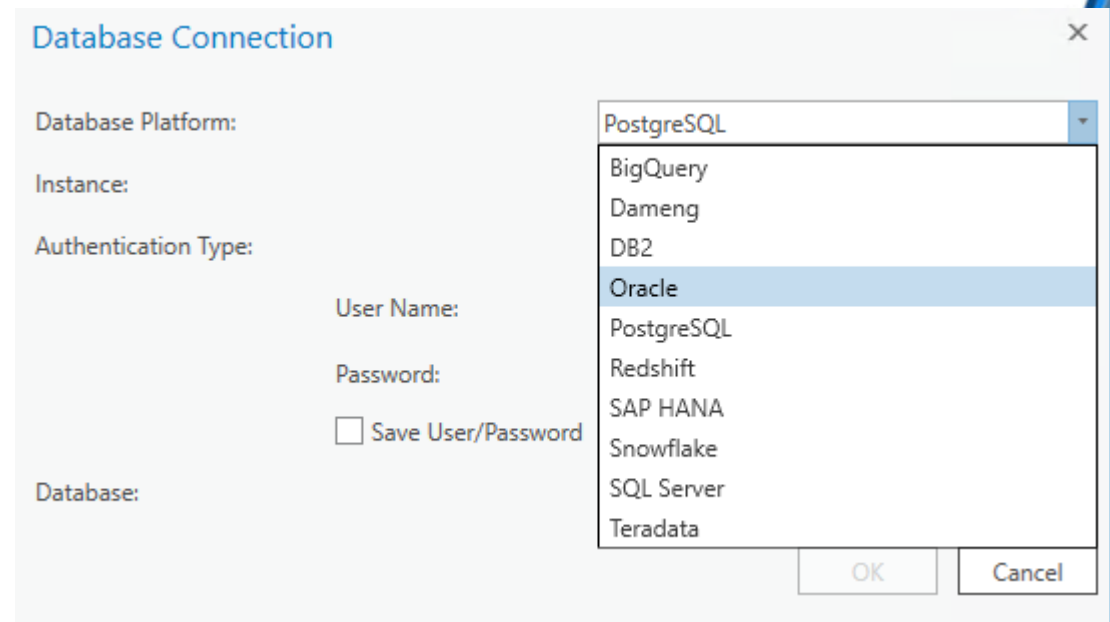
Add Database(s)

- Add Database
 - Just like adding a folder but a direct link to a database
 - **File Geodatabase only**
- New File Geodatabase
 - Create a new database that will be in Favorites
 - Can also create in Catalog but will not be in Favorites
- New Database Connection



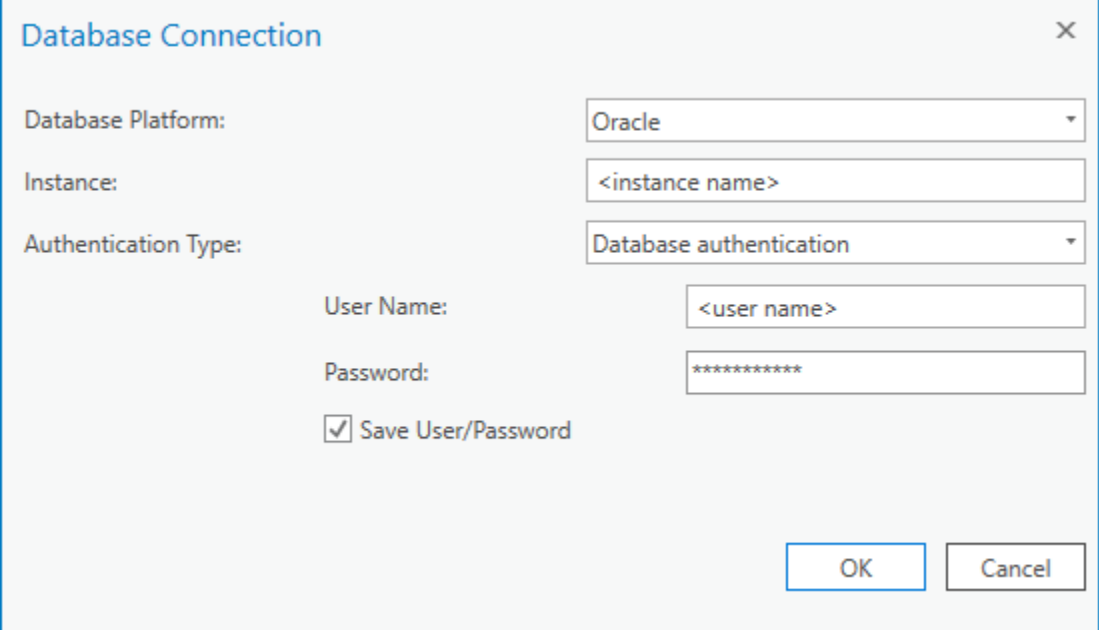
New Database Connection

- Database connection dialog
 - Network databases
- You will need specific connection information for a network or a database connection file before continuing
- Database Platform
 - Wide variety of database connections available
- Add Oracle connection
 - Depends on your situation



Add Oracle Connection

- Enter connection credentials
- Select OK
- Will now be a favorite in all new projects
- Main database
 - Same option to add to all new projects



Database Connection

Database Platform: Oracle

Instance: <instance name>

Authentication Type: Database authentication

User Name: <user name>

Password: *****

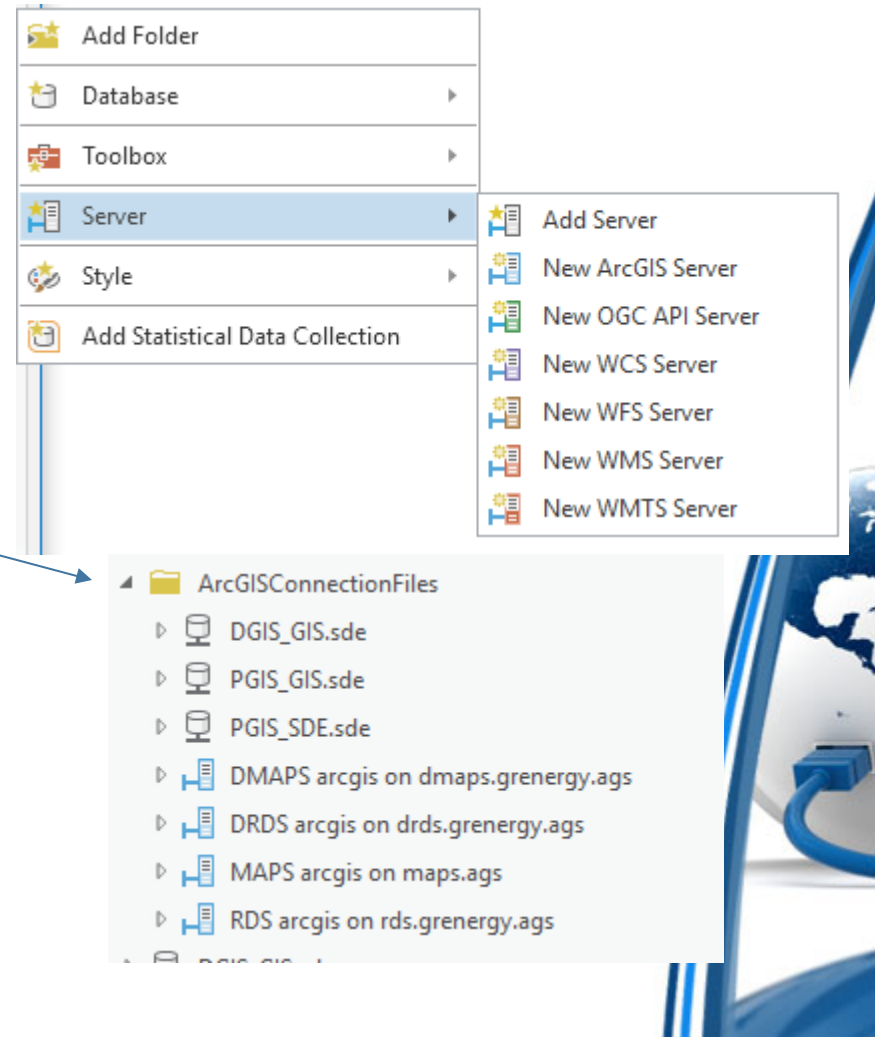
Save User/Password

OK Cancel



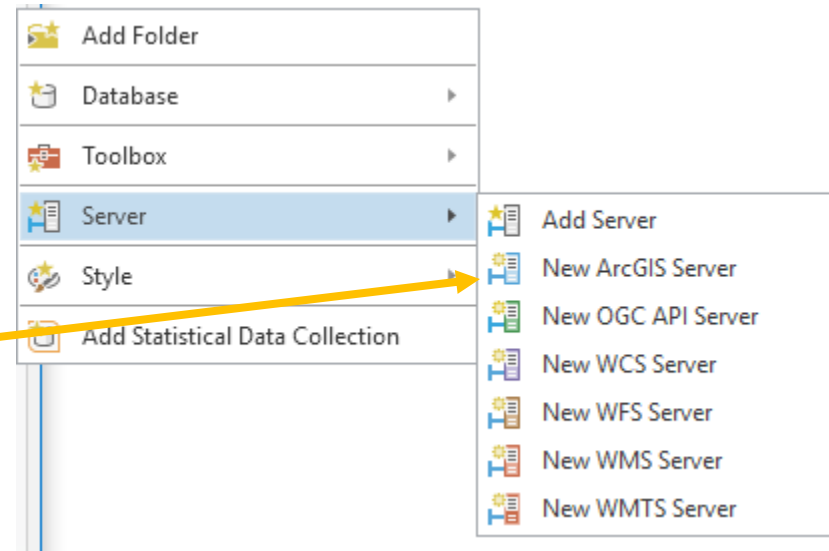
Add Server with Connection Files

- Multiple Server types
- Add Server
 - Can use Server Connection Files
 - Tip: create a folder on your common network folder with all your Connection Files. Make that folder a favorite first



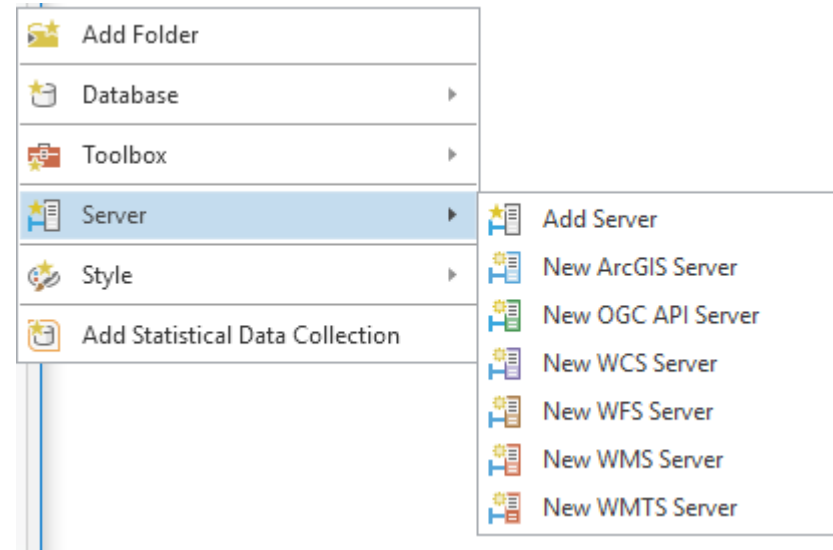
Add Server manually

- New ArcGIS Server (does not create a server)
- **NOTE: This information is case sensitive and must be entered exactly as it appears in your url**
- From here you can create a connection file
- This connection will allow you to directly access services and maps you have published

A screenshot of the 'Add ArcGIS Server Connection' dialog box. The 'Server URL' field contains 'https://'. The 'Authentication (Optional)' section has 'User Name' and 'Password' fields. There are two radio buttons: 'Save Username / Password to Windows Credential Manager' (selected) and 'Save Username / Password to connection file'. 'OK' and 'Cancel' buttons are at the bottom right.

Add other services

- You can also add other services from trusted sources
 - OGC API Server
 - WCS
 - WFS
 - WMS
 - WMTS



Add WMS Service

- Acquire the complete URL for the WMS service you want to add
- Complete URL starting with `https://`
- Best practice: if a WMS URL does not start with `https://` it may not be safe to use



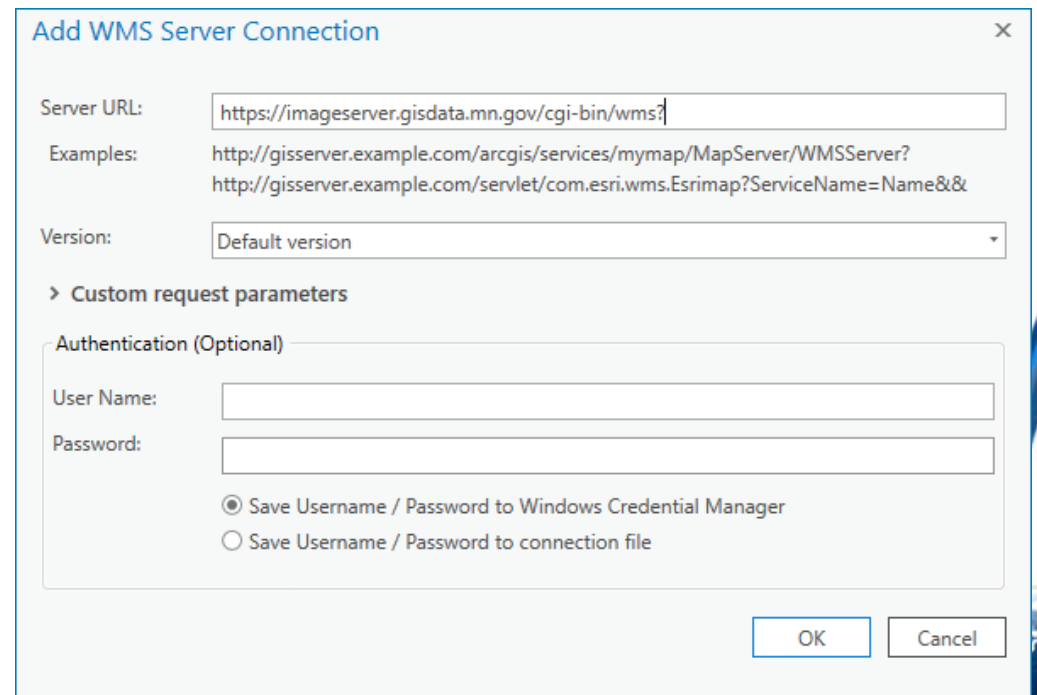
Minnesota Geospatial Image Service

MnGeo's Geospatial Image Service provides versatile access to Minnesota air photos, hillshades, and scanned topographic maps using a Web Map Service (WMS). Using this service means you don't need to download and store these very large files on your own computer. Many users report that this service provides faster display than using the same files on their own computer.

If you are having trouble connecting to the service, make sure you are using the current url: <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

Add WMS Service

- Select add New WMS Server
- Paste the complete URL into the Server URL: dialog
 - Authentication may be required depending on the source.
- The WMS service and all available layers will be added to your Favorites
- Use this option at your own discretion



Add WMS Server Connection

Server URL:

Examples:
http://gisserver.example.com/arcgis/services/mymap/MapServer/WMSServer?
http://gisserver.example.com/servlet/com.esri.wms.Esrimap?ServiceName=Name&&

Version:

> Custom request parameters

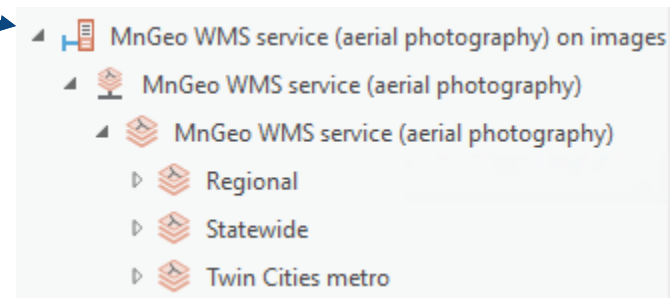
Authentication (Optional)

User Name:

Password:

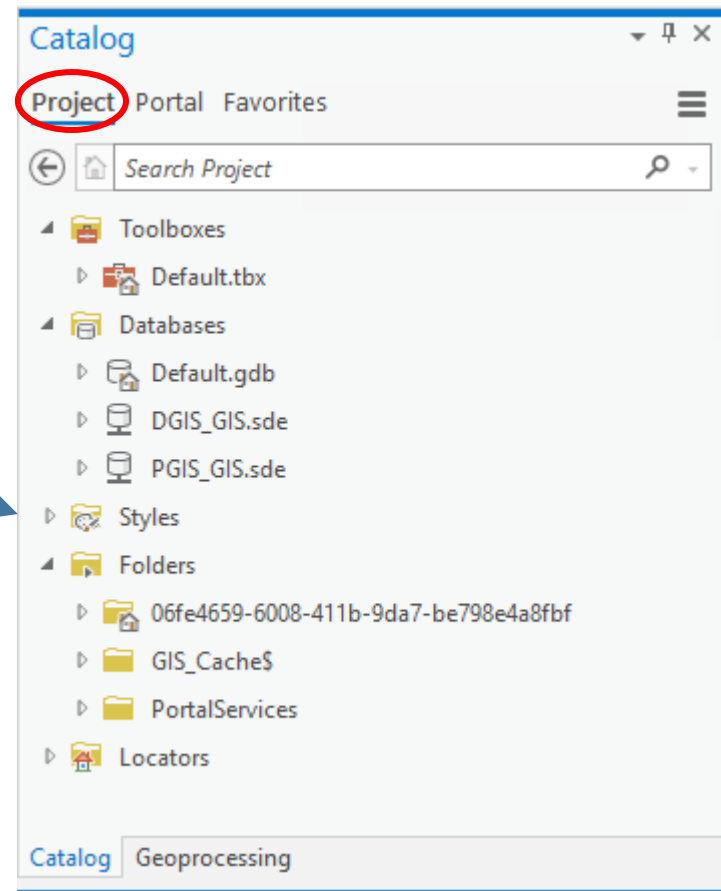
Save Username / Password to Windows Credential Manager
 Save Username / Password to connection file

OK Cancel



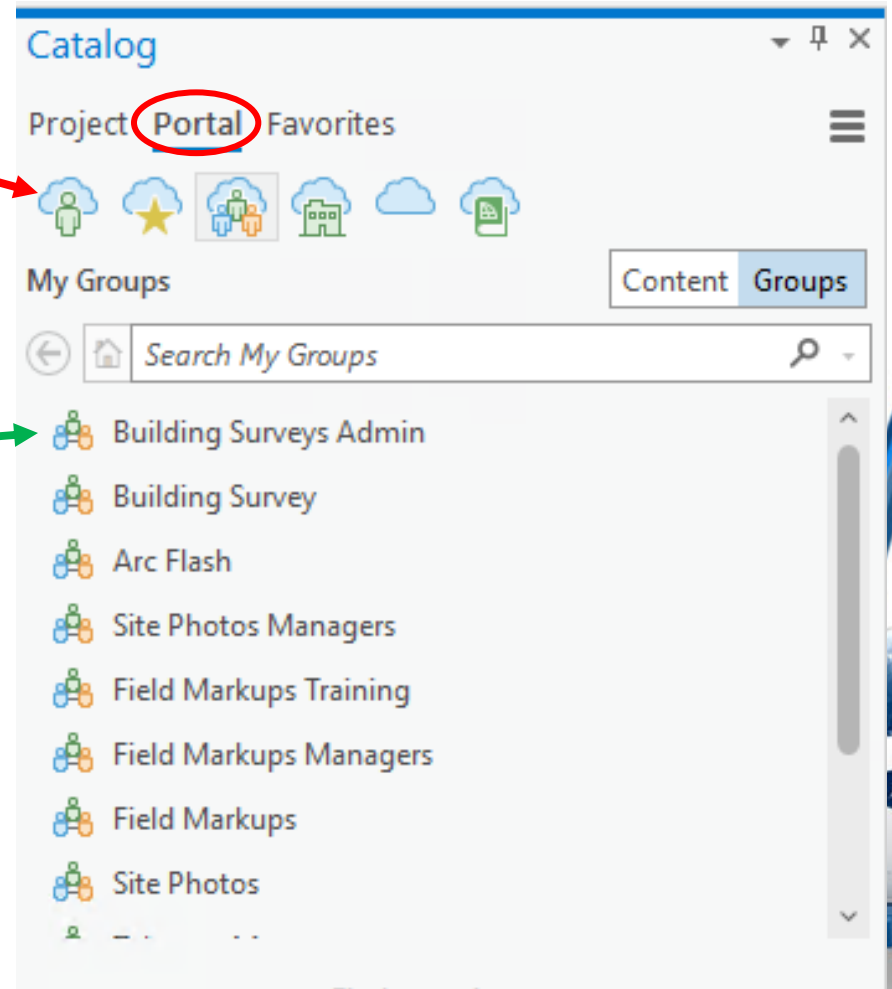
Review your Project Connections

- Check the Project tab in Catalog and verify the default connections you want for all projects are included
- Styles will be populated with default ArcGIS Pro styles
- You can alter the Favorites at any time



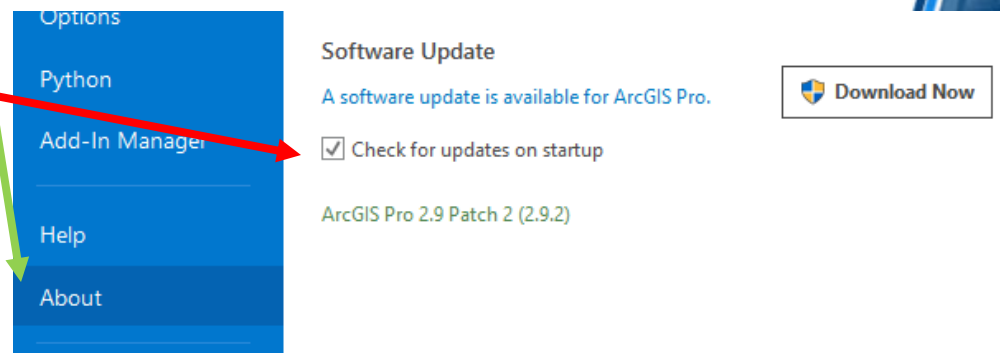
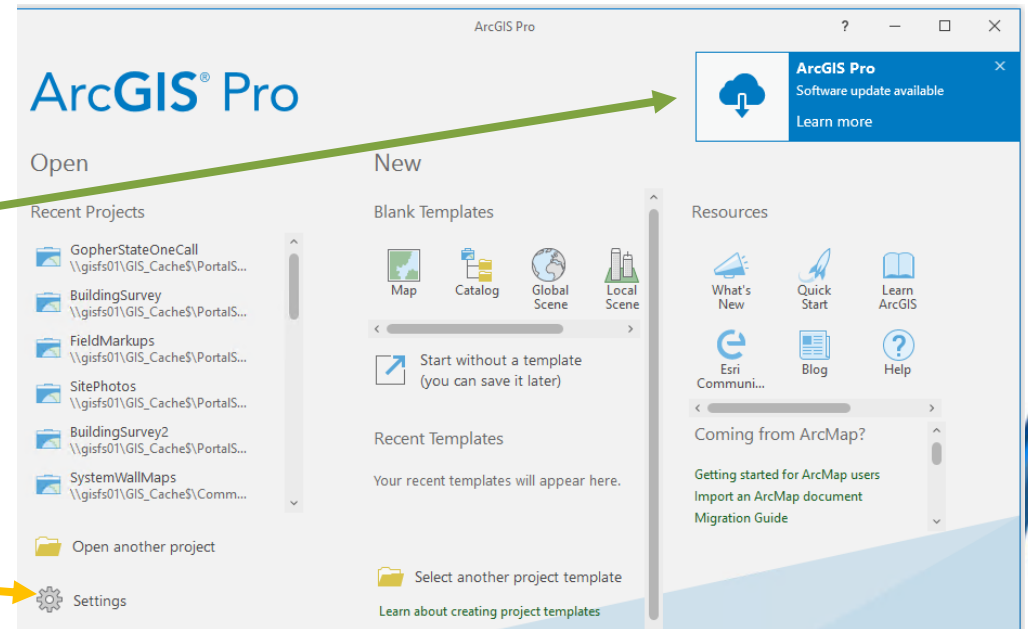
Review your Portal

- Portal view options (from left to right)
 - My Content
 - My Favorites
 - My Groups
 - My Organization
 - ArcGIS Enterprise
 - Living Atlas
 - 1436 items as of March 16th
 - ESRI approved
- Change are automatically saved



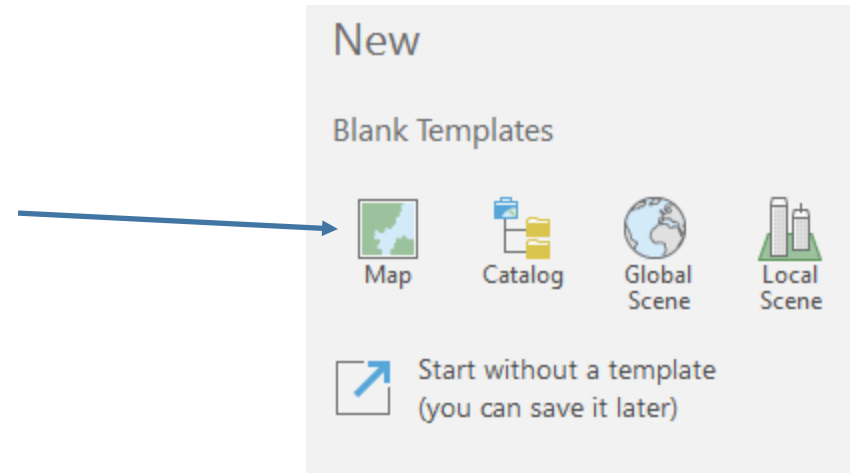
ArcGIS Pro updates

- When updates are available for Pro you will see a notification in the upper right corner if you activated Checking for updates on startup
- Select Settings
- Select About
- To receive notice of available updates, check the box
- Press Download Now to update



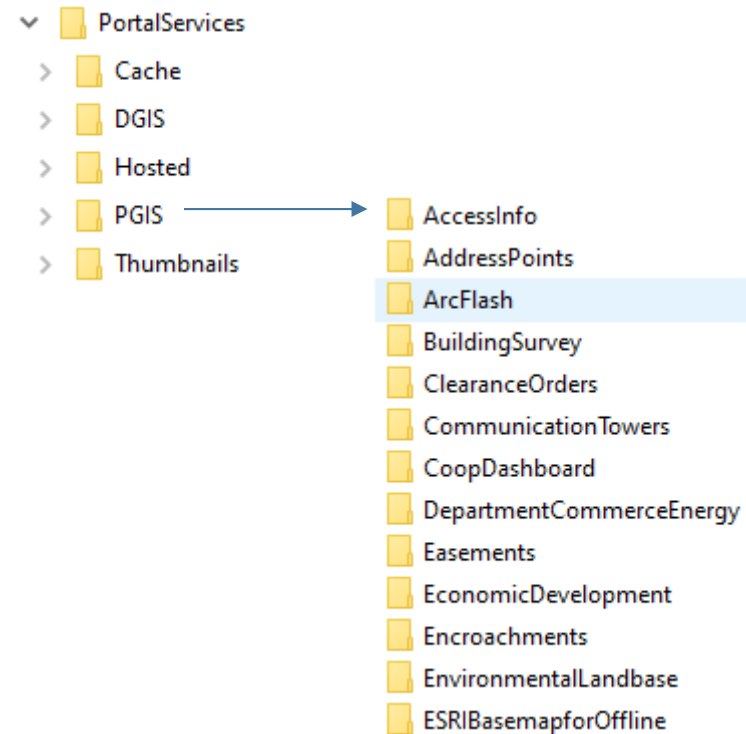
Start a New Project

- Start ArcGIS Pro (Pro)
- Select Map from Blank Templates
- Create a New Project dialog will use defaults
- TIP: create a structured Master Project Folder if multiple projects will work in this folder
- Strongly encourage thought and planning at the beginning
 - Everyone doing it the same way



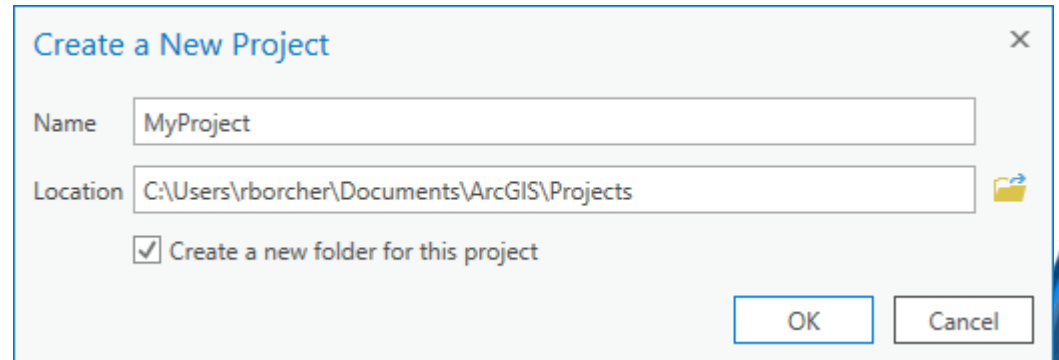
Structured Folders

- Example
 - PortalServices (network folder)
 - Contains all Projects (aprx or mxd)
 - Each folder contains ONLY information related to a specific project or feature service



Start a new Project

- Dialog will start with defaults
- Enter the logical **Name** for your Project that it will keep
- **Location**: this will create a new Folder that will store your project, or you can create a folder beforehand to place your project.
- You can store multiple Projects in the same Location
- Select OK



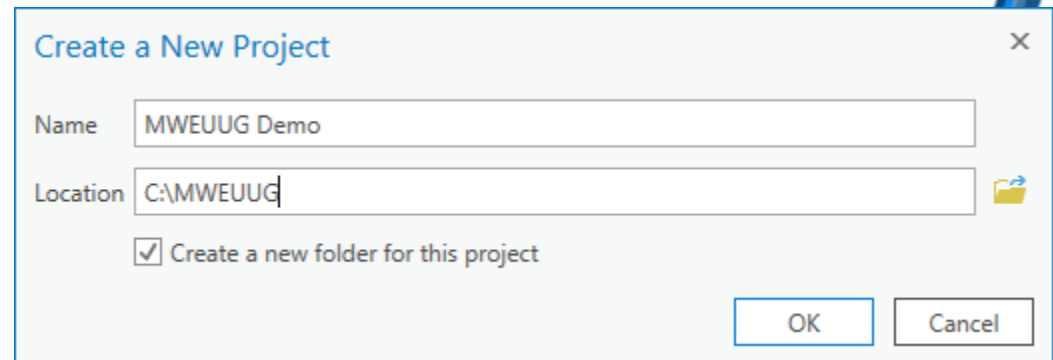
Create a New Project

Name MyProject

Location C:\Users\rborcher\Documents\ArcGIS\Projects

Create a new folder for this project

OK Cancel



Create a New Project

Name MWEUUG Demo

Location C:\MWEUUG

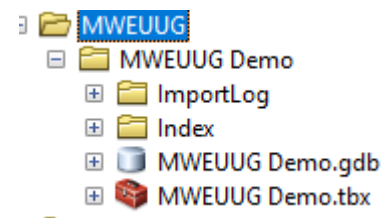
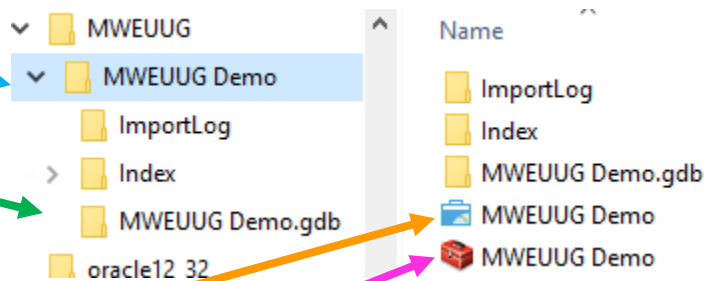
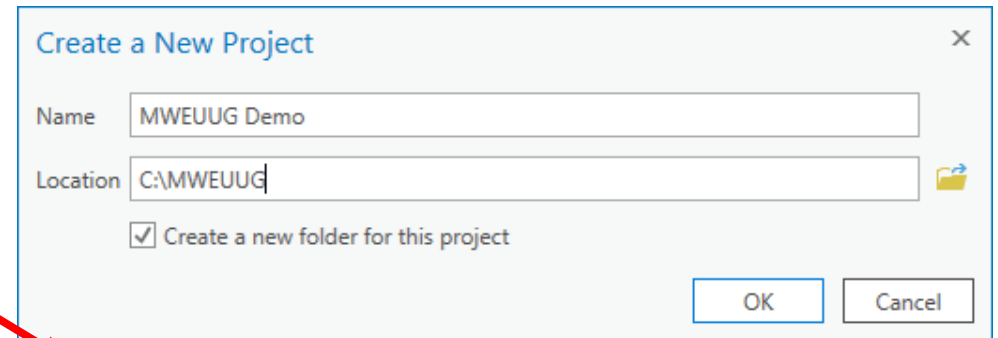
Create a new folder for this project

OK Cancel

REMEMBER THE VALUES
ENTERED HERE

Project folder in Explorer & Catalog

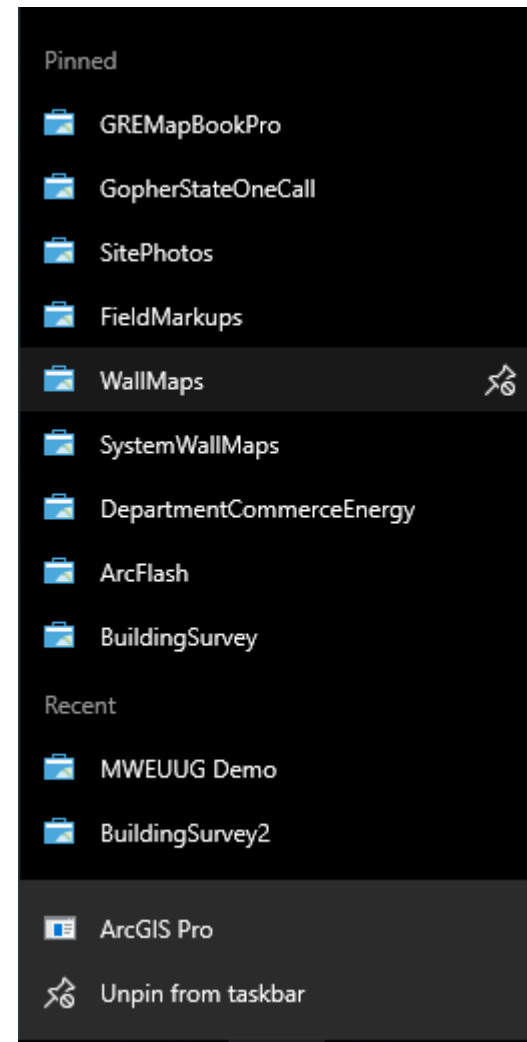
- Folder name is what you entered in the Location dialog
- Name of the project is what you entered in the Name dialog
- Created a File Geodatabase for THIS project
 - Replaces Default Database in ArcMap
- Created a Project .aprx
- Created a Project Toolbox
- ORGANIZED!



In Catalog you will not see the .aprx file.

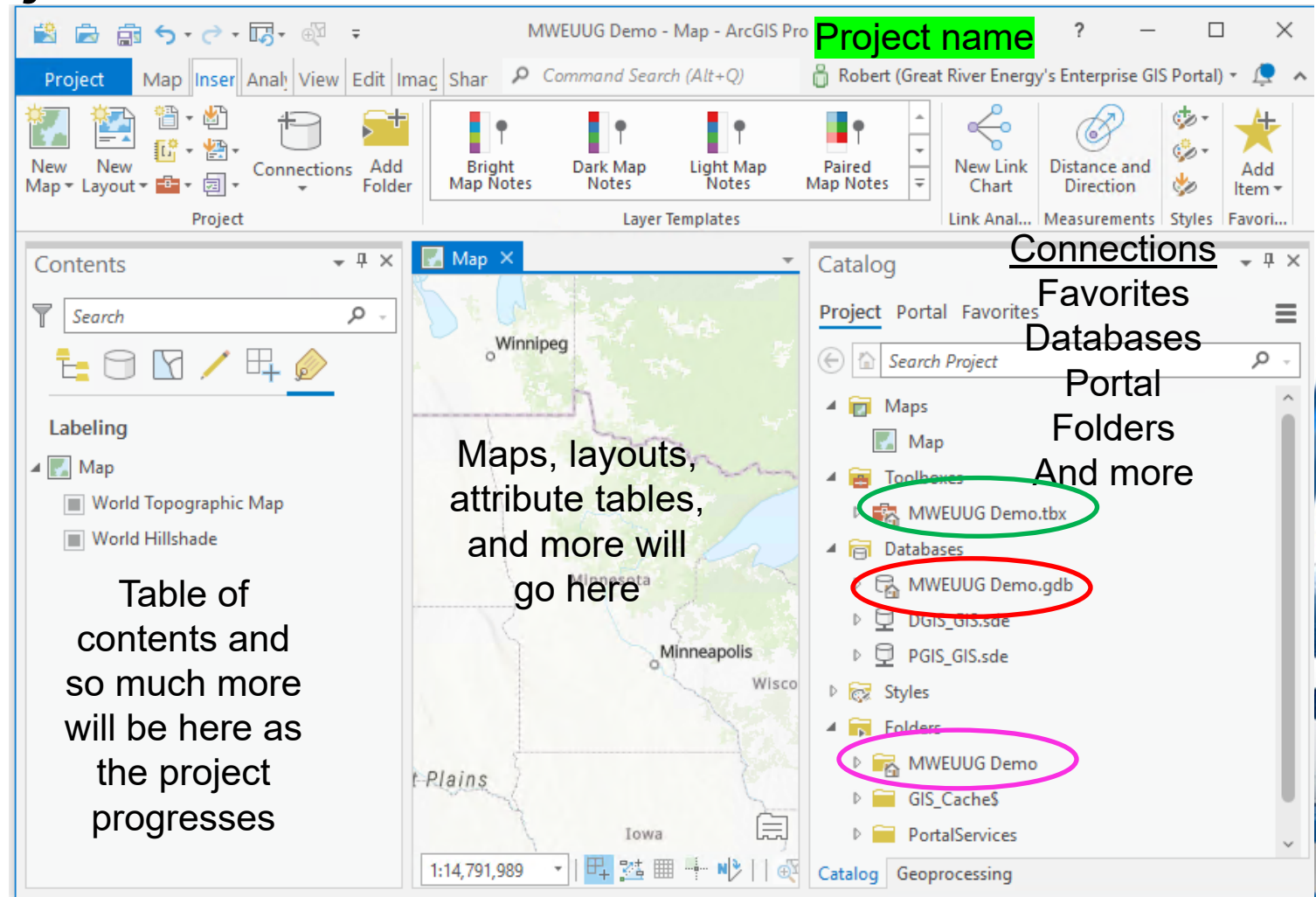
New perk to ArcGIS Pro

- Pin projects to the start icon



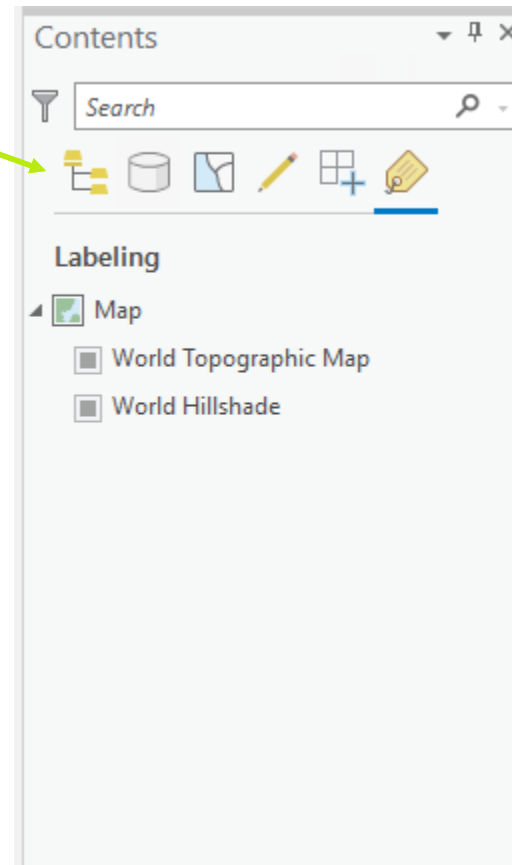
New Project

- Contents
- Map
- Catalog



Pro Project layout

- Contents (from the left)
 - Drawing Order
 - Data Source
 - Selection
 - Editing
 - Snapping
 - Labeling



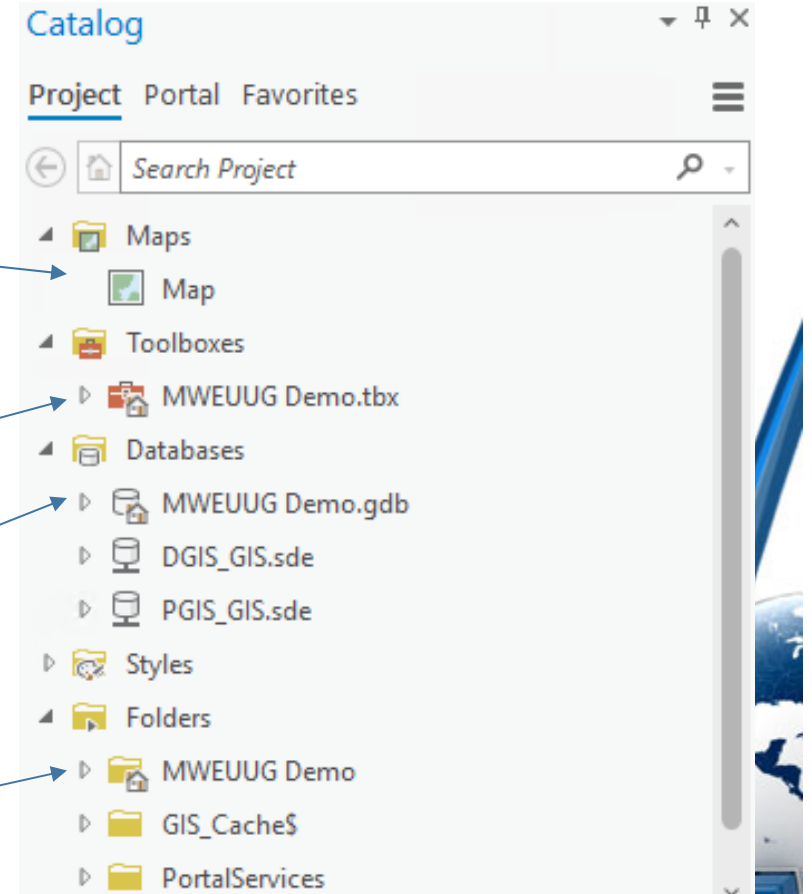
Pro Project layout

- Center Panel
 - Maps
 - Layouts
 - Tables
 - Customization dialogs
 - Domain management
 - Feature Class management



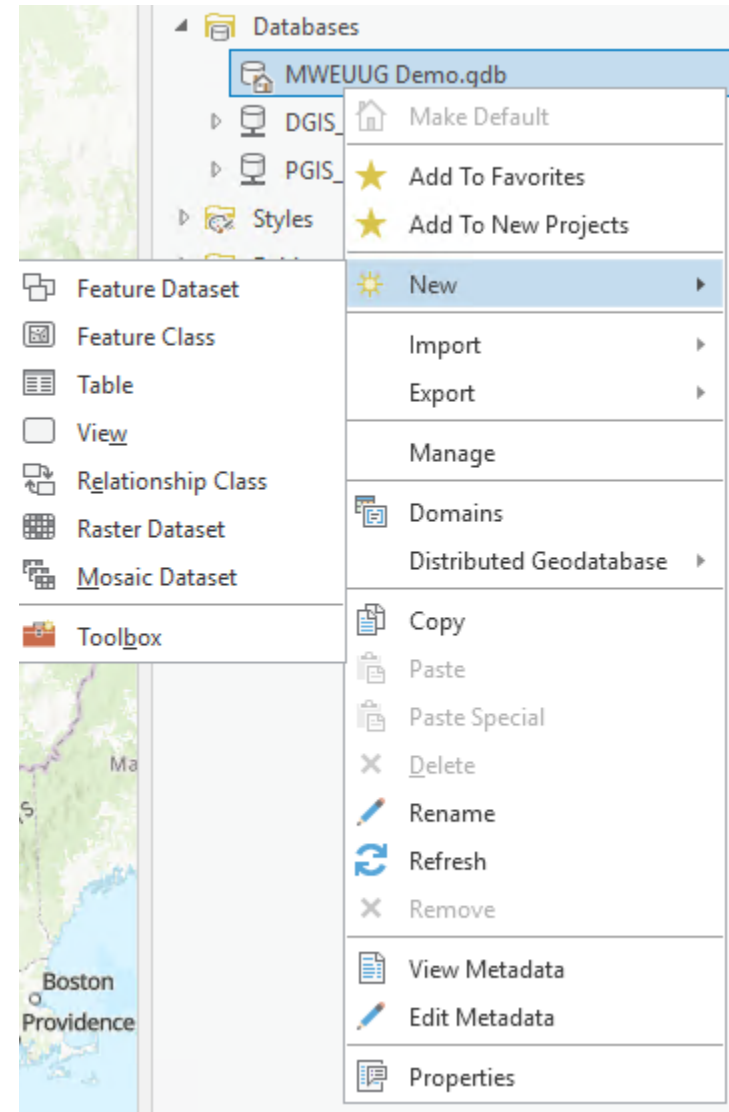
Pro Project layout

- Catalog (right side)
 - Folder for Maps
 - When you create one
 - Folder for Layouts
 - Toolboxes
 - Project Specific
 - Databases
 - Project Specific
 - Folders
 - Project Specific



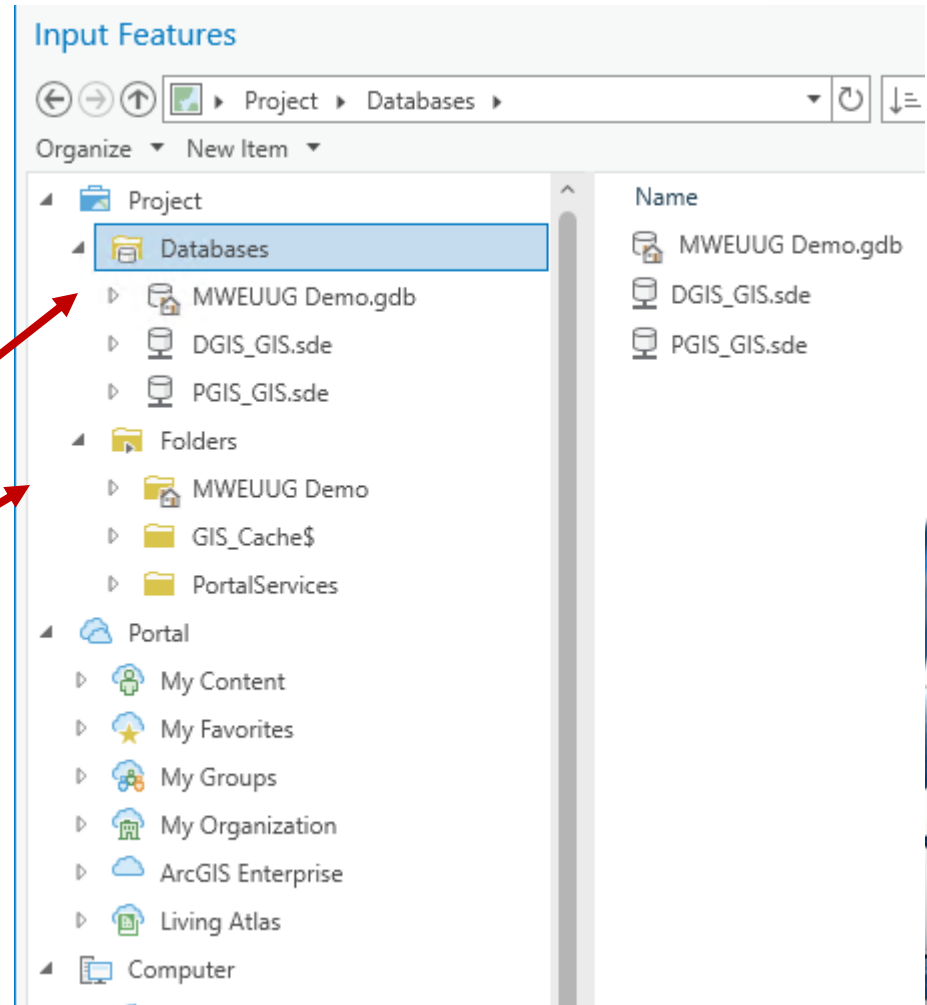
Project Database

- File GeoDataBase
- Catalog
 - Accessing
 - ArcCatalog
 - Catalog via ArcGIS Pro
- Create Feature Datasets
- Create Feature Classes
- Create Tables
- Import/Export Data
- Relationships
- Domains



A few key differences

- Accessing Databases specific to a project
 - Input
 - Export
 - Add Data
- All linked sources
 - Database
 - Folders
 - Portal
 - Computer



A Major Key Difference

Creating Feature Classes

- Creating a new Feature Class
 - Name and Alias
- Import
 - Can arrange the order of fields
- And/or Add New Fields
 - Cannot assign a Domain
 - At this time
- New Feature class is added to your map
- Remember this Feature Class
 - DemoPoint

Name: DemoPoint

Alias: Demonstration Point

Feature Class Type

Type of features stored in the feature class.

Point

Geometric Properties

M Values - Coordinates include M values used to store route data.

Z Values - Coordinates include Z values used to store 3D data.

Add output dataset to current map

Page 1/6

Previous Next Finish Cancel

Create Feature Class

Fields

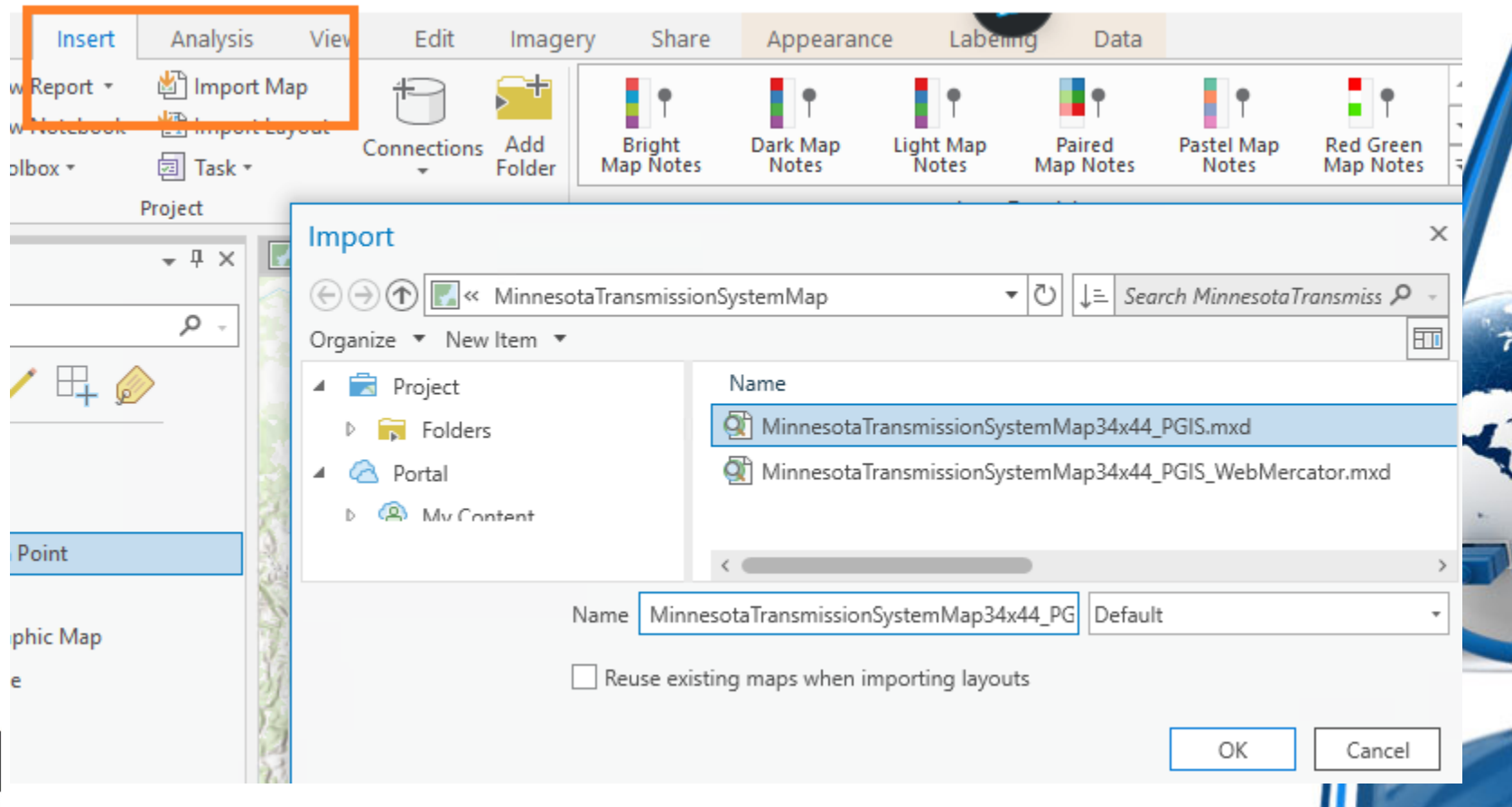
Import Delete

Field Name	Data Type
OBJECTID	OBJECTID
SHAPE	SHAPE

Click here to add a new field

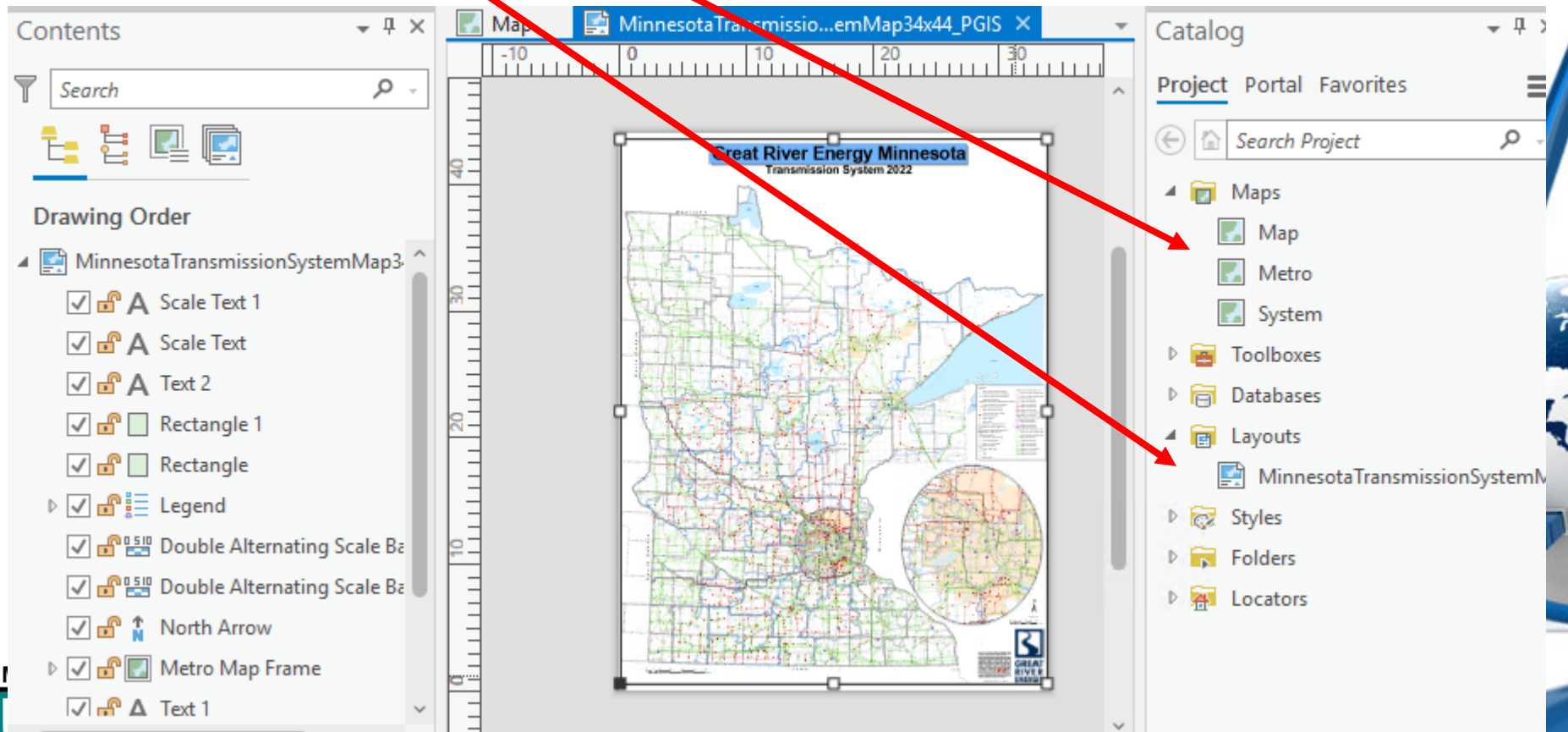
Adding existing MXD to Project

- Import from an MXD
- Insert > Import Map > Select MXD > OK



Adding existing MXD to Project

- Adds Maps
- Add Layouts



About importing MXD's to Project

- Will add multiple maps
 - May be the same map
- ArcGIS Online does not do well with complex symbology and non-standard colors
 - Stick to the basic Fonts
- Huge benefit to have one set of maps for multiple layouts.
- May be better off re-creating the MXD from scratch
 - Unless MXD's are identical in nature there may be differences in the layouts and display of data
- May change appearances of some objects

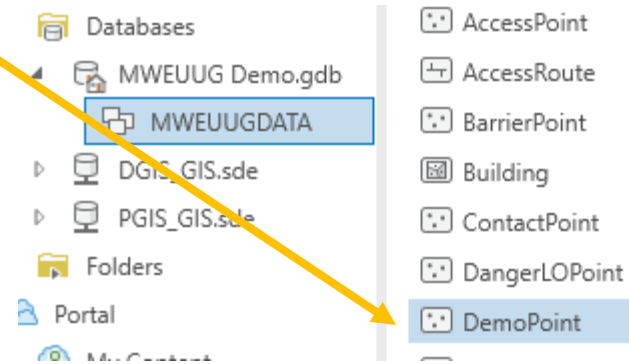
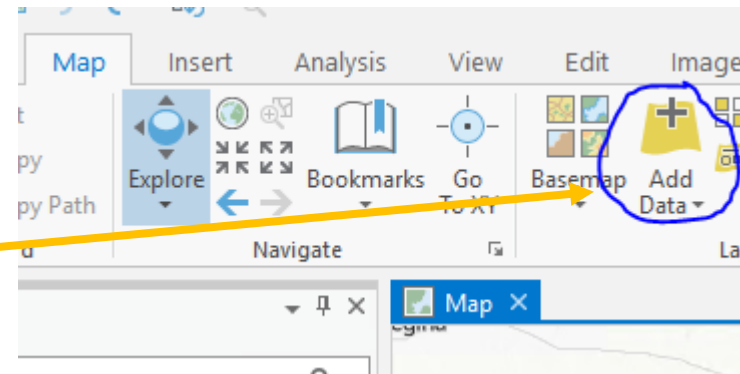
Great River Energy Minnesota
Transmission System 2022

Great River Energy Minnesota
Transmission System 2022

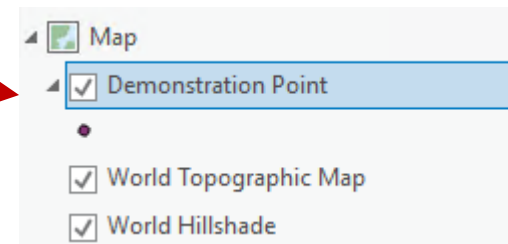


Adding Feature Classes to Map

- With the Map tab selected
- Select
 - Add Data
- Navigate to your data and add it

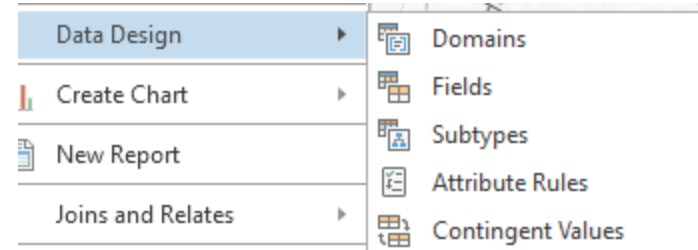


- It will appear in your Contents



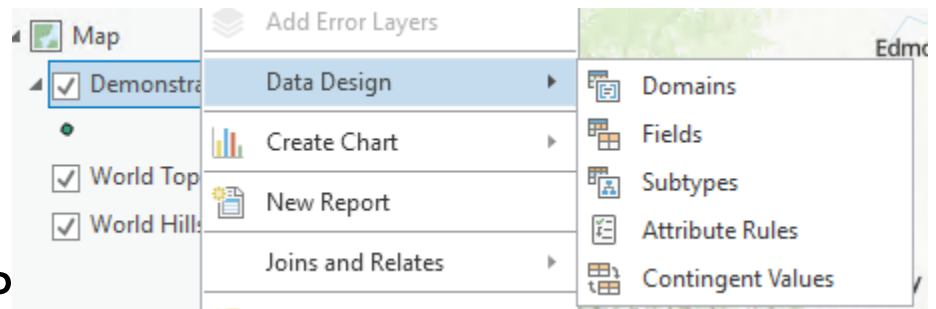
Data Design intro

- Data Design
 - Right click on Feature Class
- Design or alter
 - **Domains**
 - **Fields**
 - Subtypes
 - Attribute Rules
 - Contingent Values



Data Design: Domains

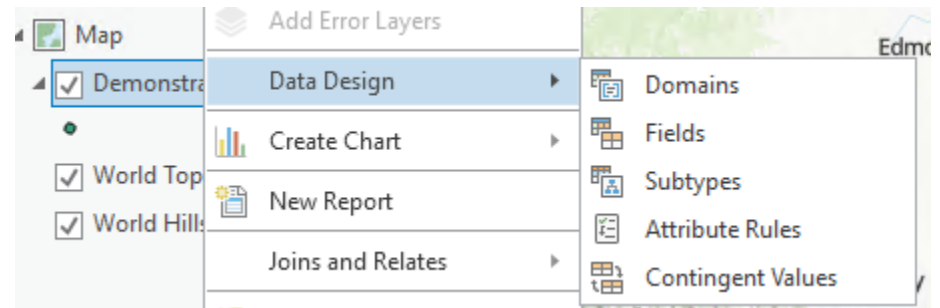
- Right click on the Feature Class
 - Data Design > Domains
- You do not need to do this first
- Domains are built similar to ArcMAP
- Stored in the database and not the project



Domain Name	Description	Field Type	Domain Type	Split Policy	Merge Policy	Code	Description
ACC_ACCESSROUTETYPE	Access Route Type	Text	Coded Value Domain	Default	Default	Trail	Trail
ACC_ACCESSTYPE	Access Type	Text	Coded Value Domain	Default	Default	Other	Other
ACC_ARESTYPE	Agency Restriction Type	Text	Coded Value Domain	Default	Default	Paved Road	Paved Road
ACC_BARRIERTYPE	Barrier Type	Text	Coded Value Domain	Default	Default	Gravel Road	Gravel Road
ACC_CONTROLAREA	Control Area	Text	Coded Value Domain	Duplicate	Default	Grass Trail	Grass Trail
ACC_COOP	Cooperative Names	Text	Coded Value Domain	Duplicate	Default	Dirt Road	Dirt Road

Data Design: Fields (permanent)

- Data Design > Fields
- Field Name
 - Feature Class Unique
 - Just like ArcMAP
- Changes go back to the database

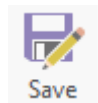


Visible	Read Only	Field Name	Alias	Data Type	Allow NULL	Highlight	Number Format	Domain	Default	Length
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OBJECTID	OBJECTID	Object ID	<input type="checkbox"/>	<input type="checkbox"/>	Numeric			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shape	SHAPE	Geometry	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Field		Long	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Visible	Read Only	Field Name	Alias	Data Type	Allow NULL	Highlight	Number Format	Domain	Default	Length
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OBJECTID	OBJECTID	Object ID	<input type="checkbox"/>	<input type="checkbox"/>	Numeric			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shape	SHAPE	Geometry	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Access	Access	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>		ACC_ACCESSTYPE		20

Click here to add a new field.

Save your changes



- Access Point
- Access Point (Perm. Required)
- Access Trail End
- Way Point
- Parking Point**
- Drop Point
- Other Point
- Electronic Access Point
- CIP Low Impact Entry Point

Data Design: Fields (Project only)

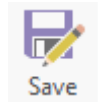
- What this means
- Certain changes in Data Design stay with the Project and are not permanent in the Database
 - Field Order
 - Visibility
 - Highlighted
 - Etc.
- Feature Class can be copied from one Map Tab to another Map Tab and maintain changes
- Allow you to display the exact same data in numerous ways



Data Design: Fields (Project only, mostly)

- Re-order fields
- Turn them on or off
- Make Read Only
- Changes are marked with in green
- Mostly Project only
 - If you delete a field, it is a permanent database change.

Save your changes



Current Layer: AccessPoint (Map)

<input checked="" type="checkbox"/> Visible	<input type="checkbox"/> Read Only	Field Name	Alias	Data Type
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OBJECTID	OBJECTID	Object ID
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SHAPE	SHAPE	Geometry
<input checked="" type="checkbox"/>	<input type="checkbox"/>	ACCTYPE	Access Type	Text
<input checked="" type="checkbox"/>	<input type="checkbox"/>	ACCCOMM	Access Comments	Text
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CREATEUSER	Creation User	Text
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CREATEDATE	Creation Date	Date
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MODIFYUSER	Modify User	Text
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MODIFYDATE	Modify Date	Date

<input type="checkbox"/> Visible	<input type="checkbox"/> Read Only	Field Name	Alias	Data Type
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OBJECTID	OBJECTID	Object ID
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SHAPE	SHAPE	Geometry
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MODIFYUSER	Modify User	Text
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ACCTYPE	Access Type	Text
<input checked="" type="checkbox"/>	<input type="checkbox"/>	ACCCOMM	Access Comments	Text
<input type="checkbox"/>	<input type="checkbox"/>	CREATEUSER	Creation User	Text
<input type="checkbox"/>	<input type="checkbox"/>	CREATEDATE	Creation Date	Date
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MODIFYDATE	Modify Date	Date

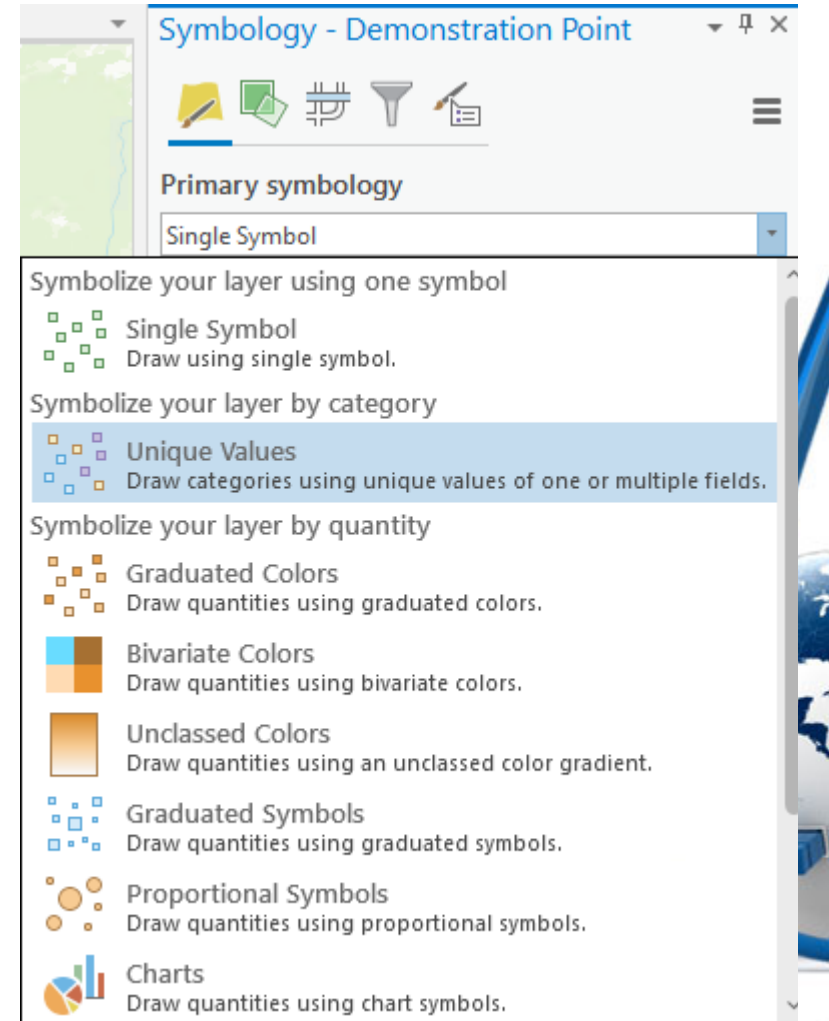
Symbology notes

- ArcGIS Pro was in strong part designed around publishing content for ArcGIS Online
- Complex symbols do not work well online
 - Fonts
 - Multiple symbol layers
 - Etc.
- You may need to adjust your symbols to what ArcGIS online can support
 - May not publish
- While symbols are designed to be simpler you will find there are a lot more options for configuring your symbols



Creating Symbology

- Right click feature and select Symbology to bring up the Symbology dialog
- Similar options to ArcMAP
 - Select Unique Values



Creating Symbolology

- Select Field 1
 - Add Fields if needed
- Add values
- Double Click a symbol to change it

Symbology - Demonstration Point

Primary symbology

Unique Values

Field 1: Access Type

Add field

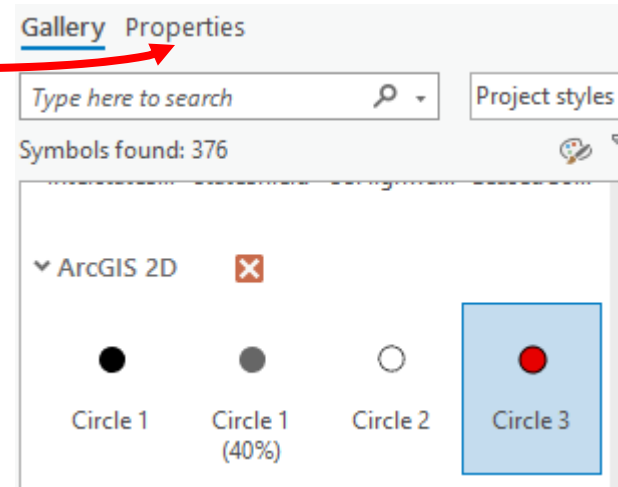
Color scheme

Classes Scales

Symbol	Value	Label
◉	Access Point	Access Point
◉	Access Point (Pe...	Access Point (Pe...
◉	Access Trail End	Access Trail End
◉	CIP Low Impact...	CIP Low Impact...
◉	Drop Point	Drop Point
◉	Electronic Acces...	Electronic Acces...
◉	Other Point	Other Point
◉	Parking Point	Parking Point
◉	Way Point	Way Point

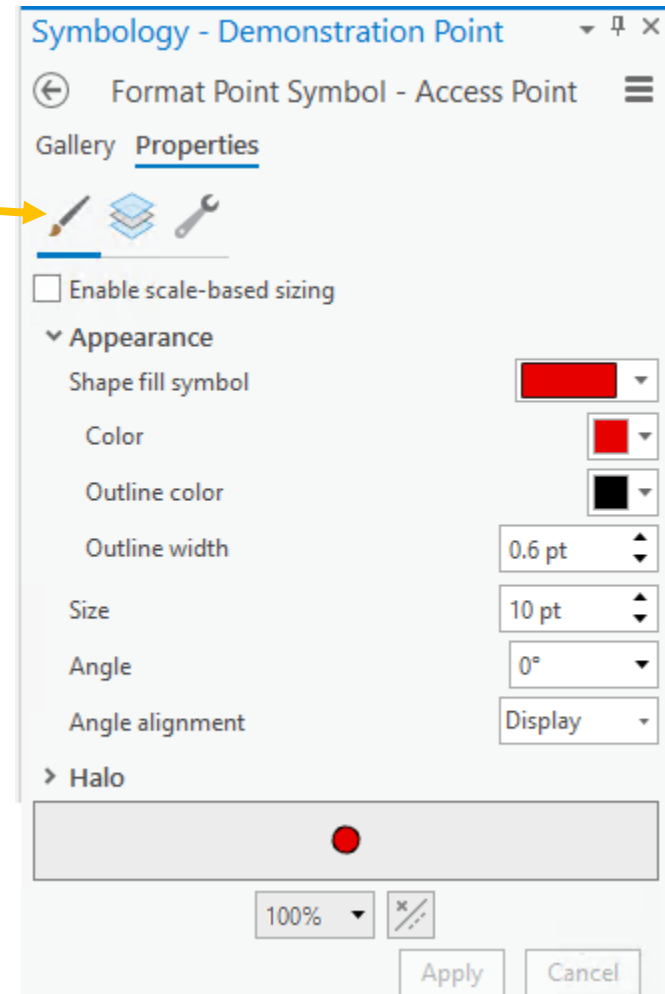
Modify Symbology

- Select your symbol
- Select Properties to customize it
- This is where it starts to get complex



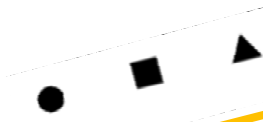
Symbol Properties Tabs

- Symbol tab
 - Color
 - Outline
 - Outline Width
 - Size
 - Angle
 - Angle alignment
 - Orient to Map (north) or Display
 - Halo
- All very similar to ArcMap



Symbol Properties Tabs

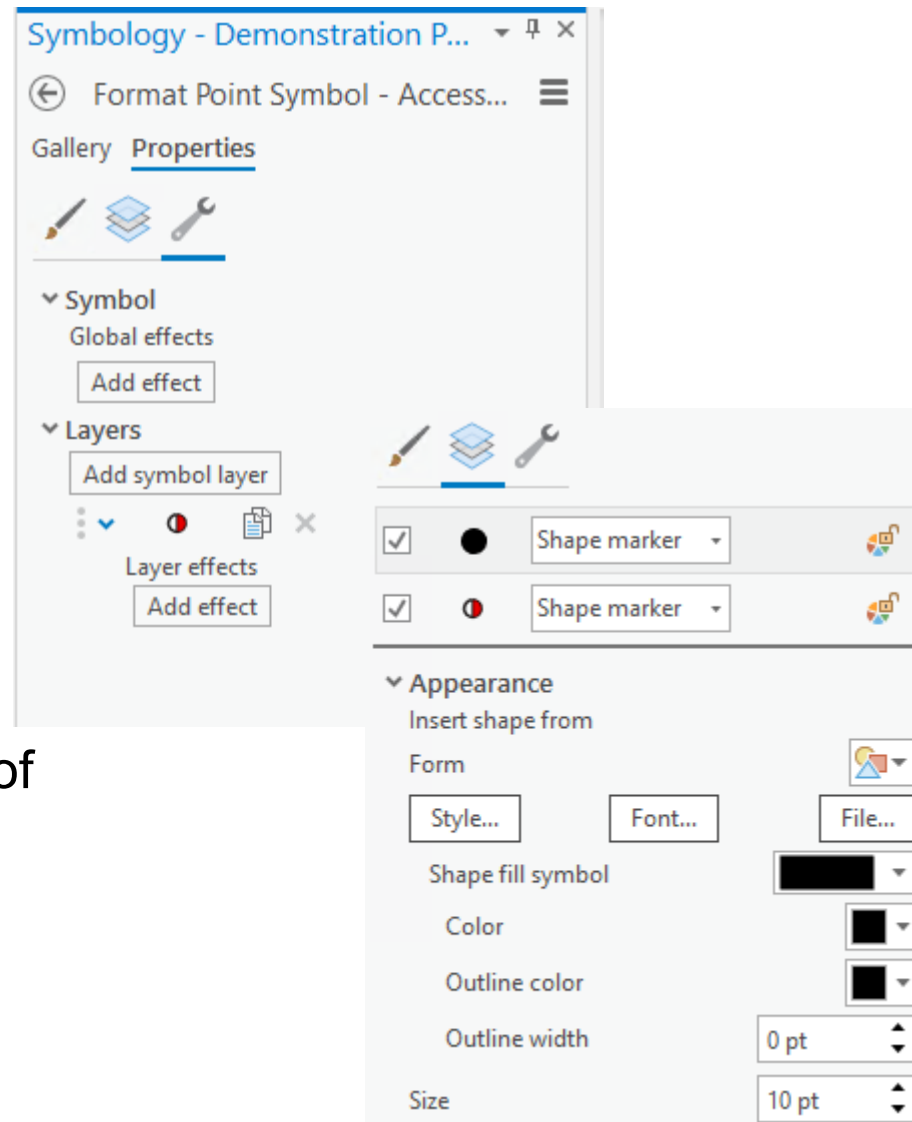
- Layers tab
 - Change shape of base symbol
 - Change original style of symbol
- Using ESRI Fonts you can create fonts similar to ArcMAP



Symbol Properties Tabs: Layers

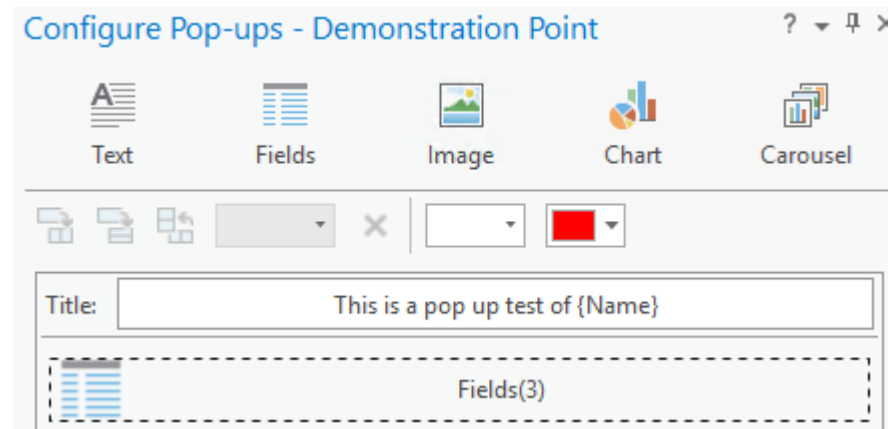
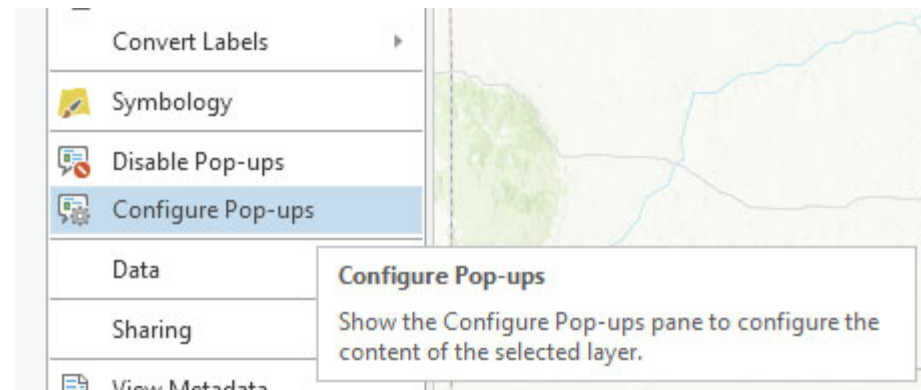
- Layers
 - Add effect
 - Add symbol layer
 - Add multiple layers

- This subject is a whole set of lectures



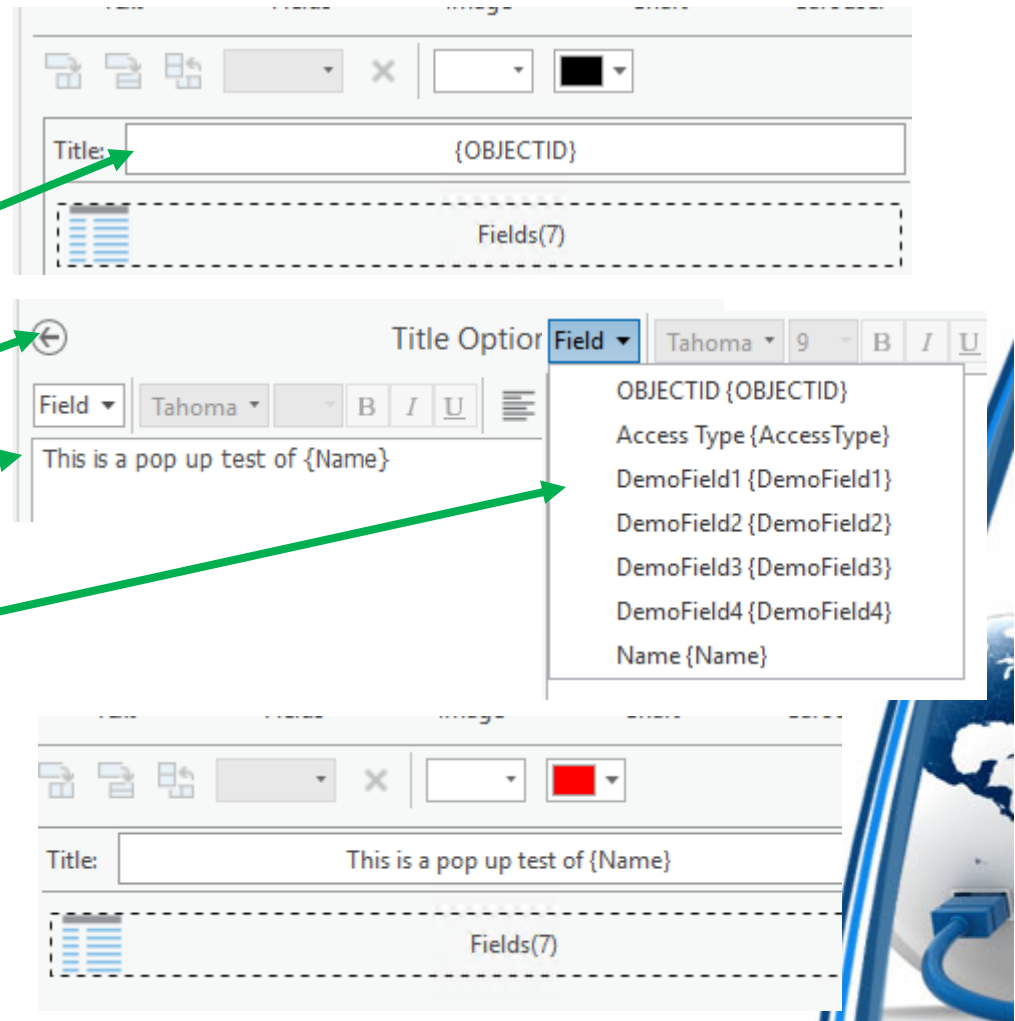
Pop-ups

- Powerful tool
 - Text
 - Hyperlink
 - URL
 - Fields
 - Images
 - Charts
 - Based on data
 - Carousel
 - Charts and Images
- Right click Feature Class and select Configure Popups



Pop-ups: Title

- Allows a combination of Text and fields
- Click on the Title dialog
- Select the back arrow to view your update
- Add custom text
- Pull fields in from drop down



Test your Pop-up

- Select a feature in your map to test your pop-up Title

▲ Demonstration Point (1)

This is a pop up test Demo Name 1

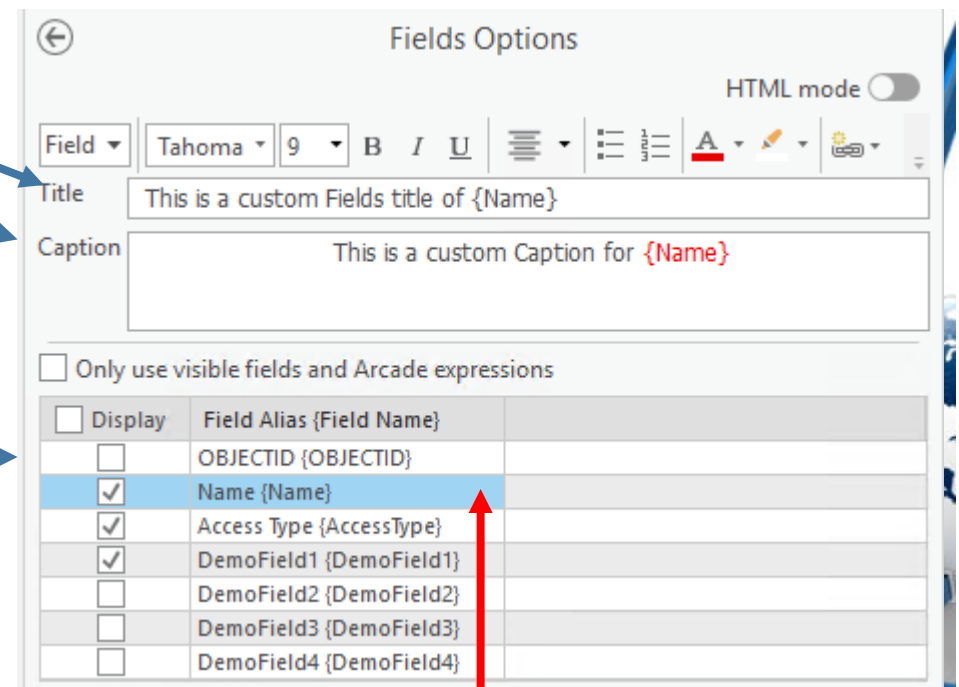
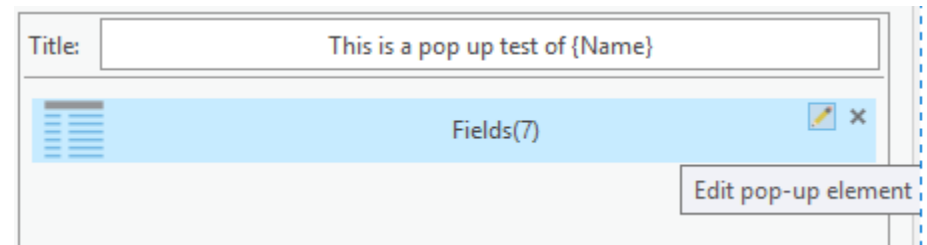
Demonstration Point - This is a pop up test Demo Name 1

OBJECTID	1
Access Type	Access Point
DemoField1	Field 1
DemoField2	Field 2
DemoField3	Field 3
DemoField4	Field 4
Name	Demo Name 1



Pop-ups: Fields

- Select Fields then the pencil icon to edit Fields
- Optional
 - Add custom title
 - Add custom caption
- Only use visible fields...
 - Uncheck to see Fields
- Uncheck fields you do not want to see
- Can re-order fields in the Pop-up
 - Only effects the Pop-up



Test your Pop-up

- Select a feature in your map to test your pop-up Title

▲ Demonstration Point (1)

This is a pop up test Demo Name 1

Demonstration Point - This is a pop up test Demo Name 1

OBJECTID	1
Access Type	Access Point
DemoField1	Field 1
DemoField2	Field 2
DemoField3	Field 3
DemoField4	Field 4
Name	Demo Name 1

▲ Demonstration Point (1)

This is a pop up test of Demo Name 1

Demonstration Point - This is a pop up test of Demo Name 1

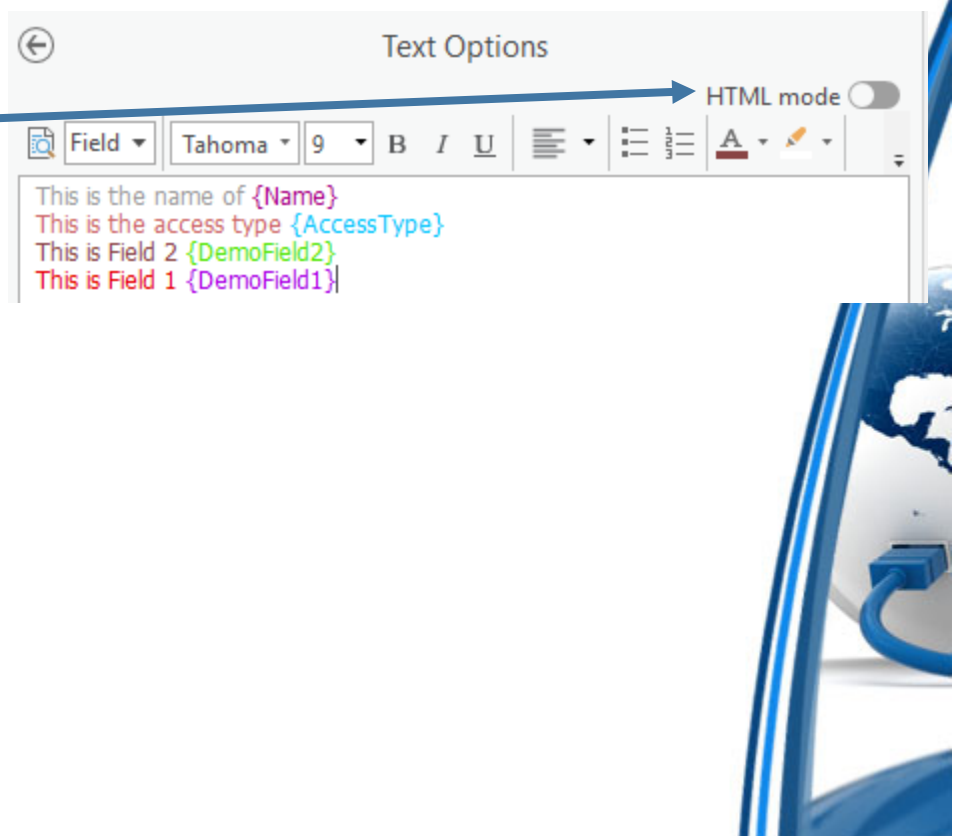
This is a custom Fields title of Demo Name 1

This is a custom Caption for **Demo Name 1**

Name	Demo Name 1
Access Type	Access Point
DemoField1	Field 1

Pop-ups: Text

- Add a text field and edit
- Like the title you can add text and fields in any combination
- Add colors
- HTML mode



Test your Pop-up

- Select a feature in your map to test your pop-up Title

▲ Demonstration Point (1)
This is a pop up test of Demo Name 1

Demonstration Point - This is a pop up test of Demo Name 1

This is a custom Fields title of Demo Name 1

This is a custom Caption for Demo Name 1

Name	Demo Name 1
Access Type	Access Point
DemoField1	Field 1

This is the name of Demo Name 1

This is the access type Access Point

This is Field 2 Field 2

This is Field 1 Field 1

▲ Demonstration Point (1)
This is a pop up test Demo Name 1

Demonstration Point - This is a pop up test Demo Name 1

OBJECTID	1
Access Type	Access Point
DemoField1	Field 1
DemoField2	Field 2
DemoField3	Field 3
DemoField4	Field 4
Name	Demo Name 1

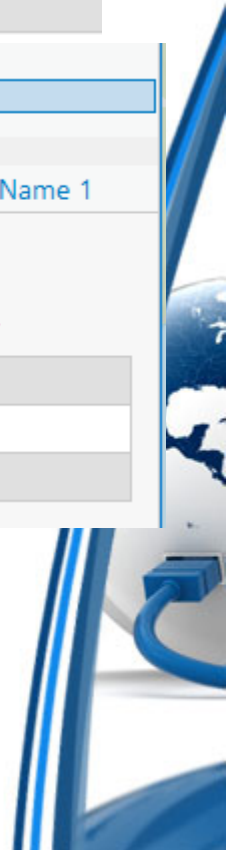
▲ Demonstration Point (1)
This is a pop up test of Demo Name 1

Demonstration Point - This is a pop up test of Demo Name 1

This is a custom Fields title of Demo Name 1

This is a custom Caption for Demo Name 1

Name	Demo Name 1
Access Type	Access Point
DemoField1	Field 1



Labels

- Right click to access Labeling Properties and turn on labels
- Can be very in depth
 - Similar to Maplex
 - More options
- Optional Languages
 - Arcade
 - VBScript
 - Jscript
 - Python
- Manage Classes

The screenshot shows the 'Label Class - Demonstration Point' dialog box in ArcGIS. A red arrow points to the 'Labeling Properties...' option in the context menu. A yellow arrow points to the 'Manage Classes' button in the top right corner. The 'Language' dropdown is set to 'Arcade', and the 'Title' is 'Custom'. The 'Fields' list includes 'Name', and the 'Expression' field contains '\$feature.Name'.

Fields	Functions
OBJECTID	Abs()
Access Type	Acos()
DemoField1	Angle()
DemoField2	Area()
DemoField3	AreaGeodetic()
DemoField4	Array()
Name	Asin()
	Atan()
	Atan2()

Customize an Arcade label

- Label Expression
 - Arcade uses specific pointers to the data
 - `$feature.OBJECTID`
 - Case Sensitive

- SQL

Where is equal to

- Visibility Range

▼ Visibility range

Do not show labels when zoomed

In beyond (maximum scale)

Out beyond (minimum scale)

Class ▼ Symbol Position

Language

Title

Fields Functions

Access Type	Abs()
DemoField1	Acos()
DemoField2	Angle()
DemoField3	Area()
DemoField4	AreaGeodetic()
Name	Array()
	Asin()
	Atan()
	Atan2()

Insert Values ▼

Expression

Insert fields with coded value description function

Remove extra spaces

Remove extra line breaks

[Learn more about label expressions](#)

Basic Arcade Scripting

- Requires Arcade database name

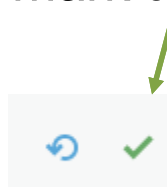
- `$feature.{Field}`

- Add fields with a double click

- Plus sign “+” instead of ampersand “&”

- Apostrophe ‘<text>’ instead of quotation mark “<text>”

- Select Check mark to verify expression



- Select Rewind to rest expression

Select Apply when finished

Class ▾ Symbol Position

Language

Title

Fields

Access Type	Abs()
DemoField1	Acos()
DemoField2	Angle()
DemoField3	Area()
DemoField4	AreaGeodetic()
Name	Array()
	Asin()
	Atan()
	Atan2()

Insert Values ▾

Expression

```
$feature.Name + 'has an Access type of ' + DomainName($feature, 'AccessType')
```

✓ Expression is valid

Insert fields with coded value description function

Remove extra spaces

Remove extra line breaks

[Learn more about label expressions](#)

Apply Cancel

View your Label

- You can customize the colors and position with the Symbol and Position options
- Dozens and dozens of options and variables
 - Stacking
 - Weight
 - Buffers
 - Halos
 - Etc.

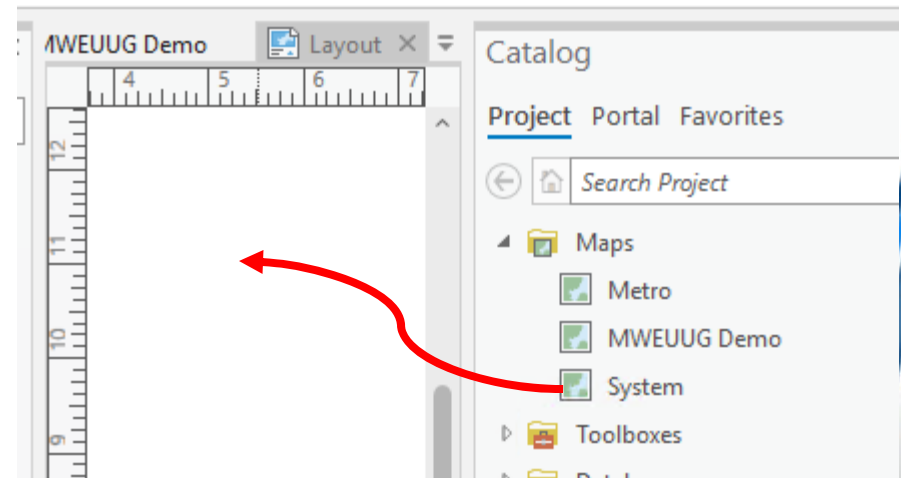
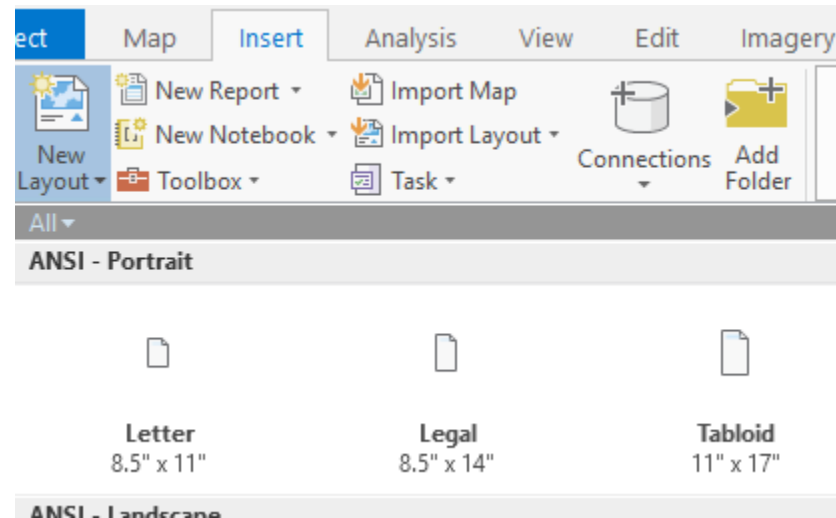
● Demo Name 1 has
an Access type
of Access Point

● Demo Name 2 has
an Access type
of Access Point



Layouts

- Insert
 - New Layout
 - Select size
 - Can change the size later
- Open the catalog
 - Maps
 - Drag desired map or maps into the Layout



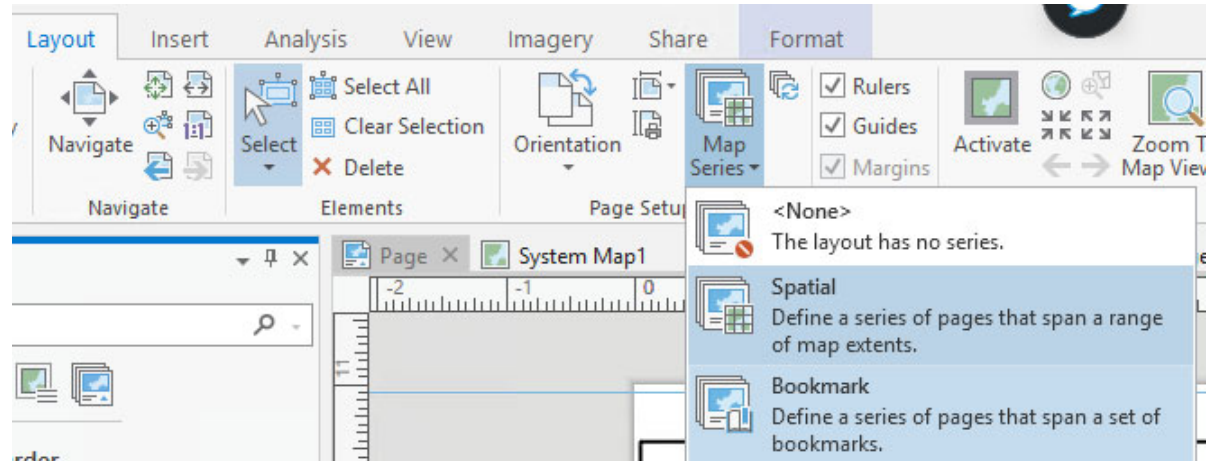
Layouts overview

Multiple layouts using the same System Map in a single project

The screenshot displays the ArcGIS Pro interface. On the left, the Contents pane shows a tree view of the project. A yellow box highlights the 'Layout elements' section, which includes 'System Map Map Frame' and various map frame components. A red arrow points from this section to the 'System Map1' tab in the top ribbon. Another red arrow points from the word 'Locks' to the lock icon next to 'Inset Map Map Frame'. The main map area shows a detailed map with a grid and various colored lines. The map is titled 'Munro & North Pole Detour Maps' and has a scale of 'X 10'. The page number '112' is visible in the bottom right corner of the map area.

Define a Map Series

- From the Layout Tab
 - Select
 - None
 - **Spatial**
 - Bookmark



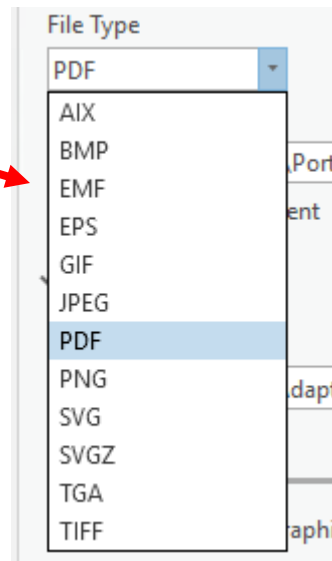
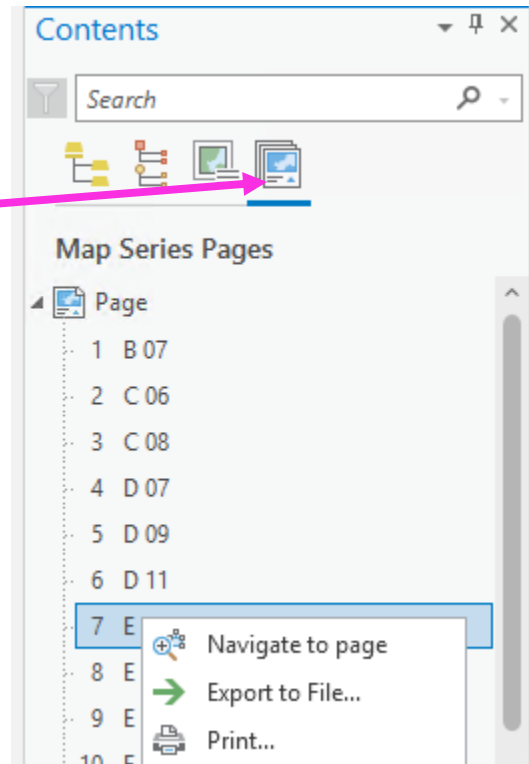
Define your Series

- Like Data Driven Pages
- However
 - Group by
 - Use an Attribute
- Page Number
 - Default will be ascending by Sort field
 - Can specify by Attribute

The screenshot shows the 'Layout Properties' dialog box with the 'Map Series' tab selected. The 'Enable' toggle is turned on. The 'Spatial' section is expanded, showing 'Define a series of pages that span a range of map extents.' The 'Index Layer' section is expanded, showing 'Map frame' set to 'System Map Map Frame', 'Layer' set to 'Mapbook Grid', 'Name Field' set to 'MAPNUMBER', and 'Sort Field' set to 'MAPNUMBER'. The 'Sort Ascending' checkbox is checked. The 'Optional Fields' section is expanded, showing 'Group By' set to '<None>', 'Page Number' set to '<None>', 'First Page' set to '1', 'Rotation' set to '<None>', and 'Spatial Reference' set to '<None>'. The 'Map Extent' section is expanded, showing 'Best Fit Extent' selected, 'Margin Size' set to '2' with a 'Percent' dropdown, 'Round scale to nearest' set to '10', 'Center and Maintain Scale' selected, 'Scale' set to '1:167,000', 'Use Scale From Field' selected, 'Scale Field' set to '<None>', and 'Clip to index feature' unchecked. The 'OK' and 'Cancel' buttons are at the bottom right.

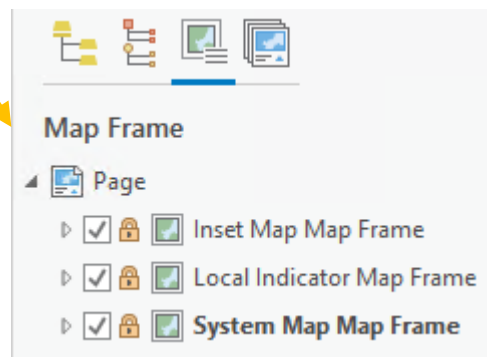
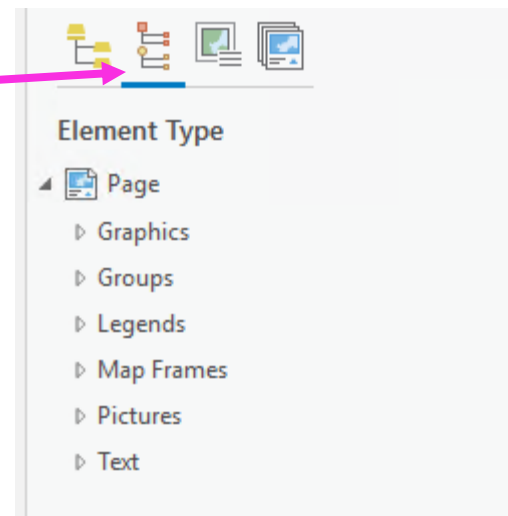
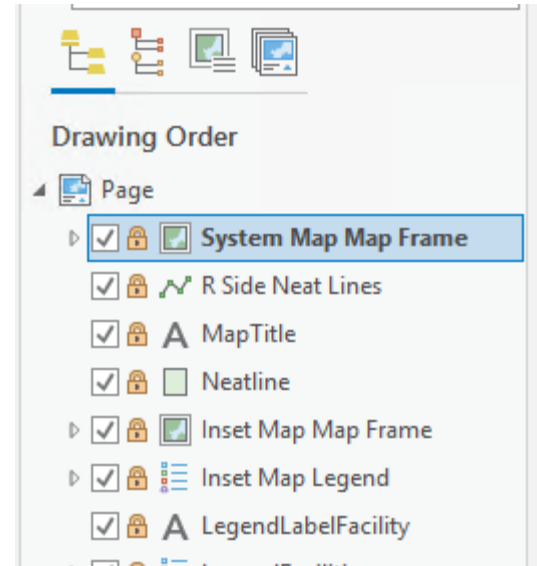
Layout elements

- Map Series Pages
- Right click
 - Navigate to page
 - Export to File...
 - 12 types
 - Print



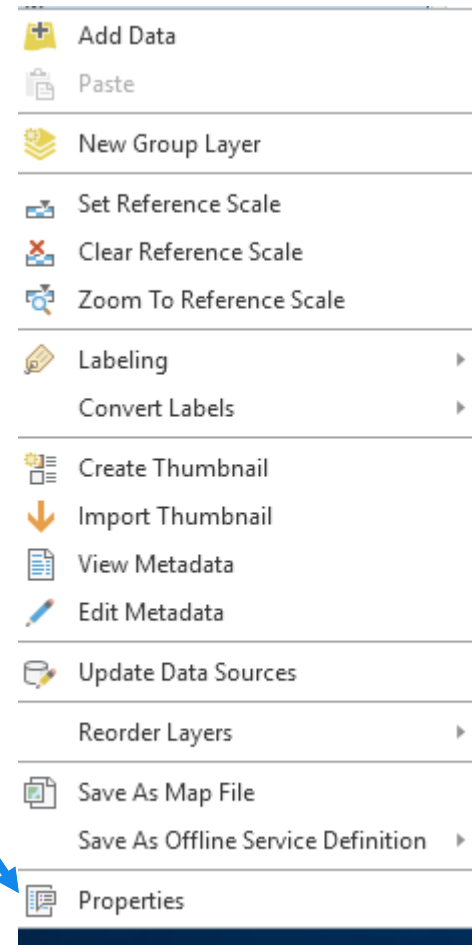
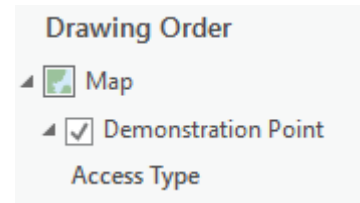
Layouts: other content types

- List by drawing order
 - All elements
 - No more sending to back or bringing to front
- Element Type
 - All elements sorted by type
- List by Map Frame
 - All Maps in a layout



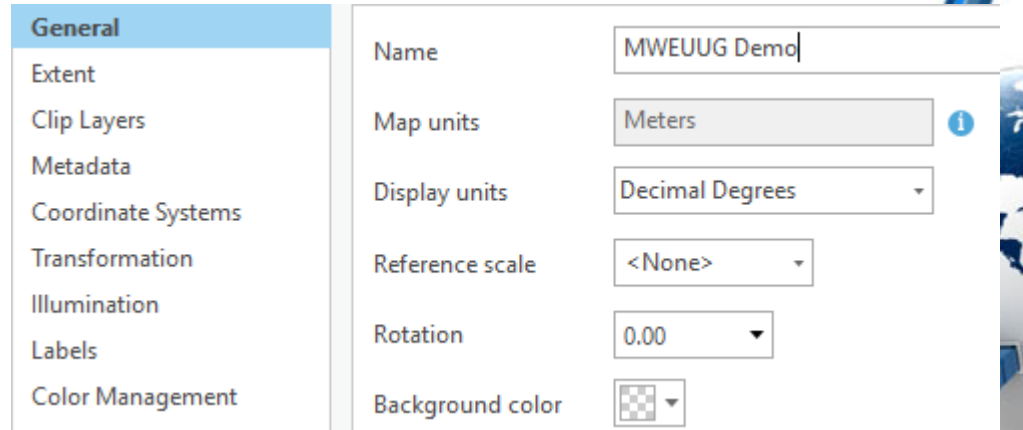
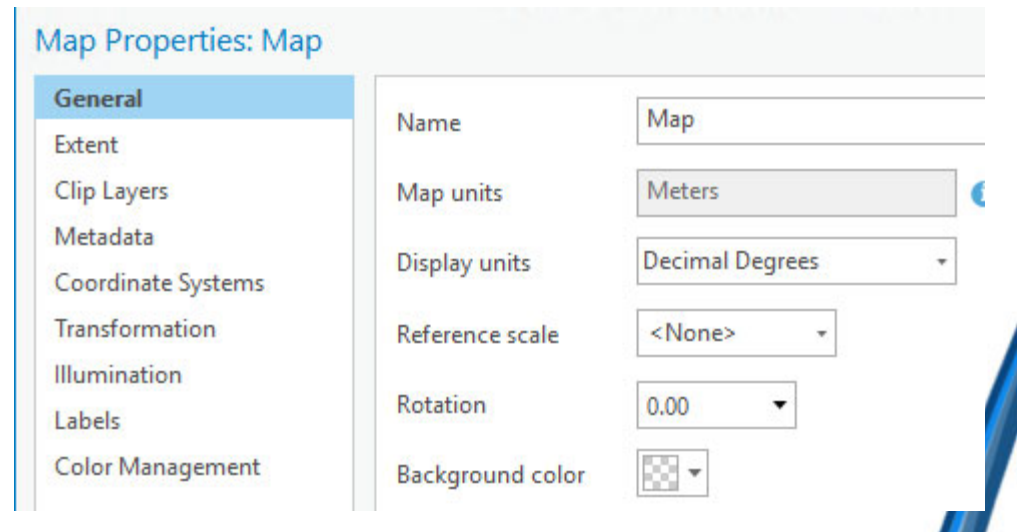
Setting Map Properties

- Right click on Map
 - Wide variety of options
- Select Properties



General properties

- Set Name
 - Hint: if you are going to publish this map name it after the service you are going to publish



Metadata

- Metadata
 - Title
 - Tags
 - Summary
 - Description
- Hint: if you are going to publish this map as a service fill in the Metadata as you will want it to be seen in ArcGIS Online

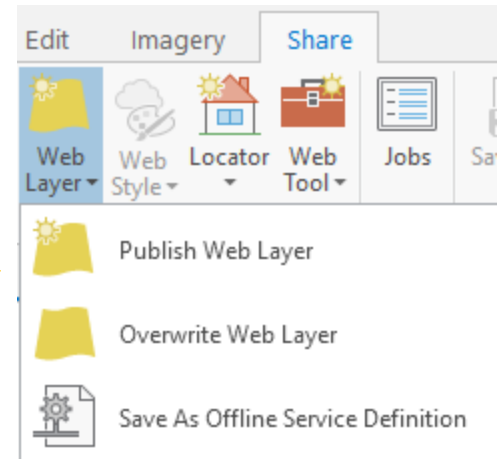
Map Properties: Map

General	Title
Extent	Map
Clip Layers	Tags
Metadata	
Coordinate Systems	Summary
Transformation	
Illumination	Description
Labels	
Color Management	Credits
	Use limitations

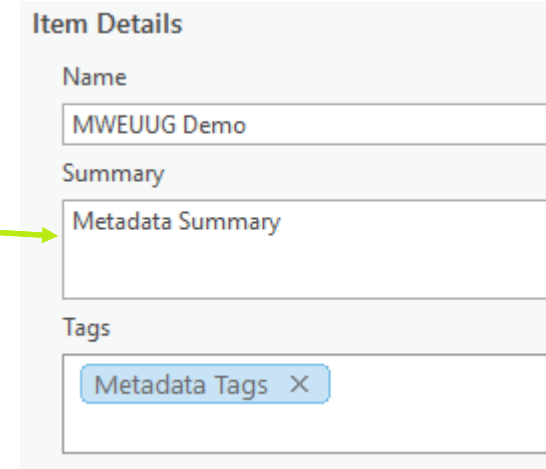
Map Properties: Map

General	Title
Extent	Metadata Title
Clip Layers	Tags
Metadata	Metadata Tags
Coordinate Systems	Summary
Transformation	Metadata Summary
Illumination	Description
Labels	Metadata Description
Color Management	

Share > Publish as Web Layer



- Share > Web Layer > Publish Web Layer
- Name, summary, and Tags
 - Appear when publishing
 - Pulled from properties
- Description
 - Visible as metadata in the published service



Share > Publish as Web Layer

- Prefilled from Properties
- Choose service types
 - Map Image
 - View only
 - Feature
 - Editable
- Can publish directly to a Portal folder (Service management)
- Designate which server
- Designate or create a folder on Portal for managing elements

Item Details

Name
MWEUUG Demo

Summary
Metadata Summary

Tags
Metadata Tags X

Data and Layer Type ⓘ

Reference registered data

Map Image

Feature

Vector Tile

Map Image and Feature

Copy all data

Feature

Tile

Map Image

Vector Tile

Feature ⓘ

Location

Portal Folder
Select or create folder

Server and Folder
https://maps.domain.com:####/arcgis
Select or create folder

Share with

Everyone

Great River Energy's Enterprise GIS Portal

Finish Sharing

Questions?



What would you
like to see?

