

ArcGIS Pro Tips and Tricks

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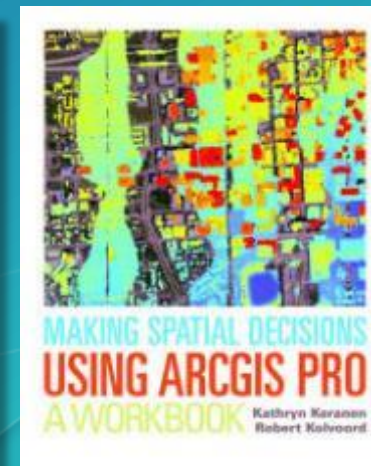
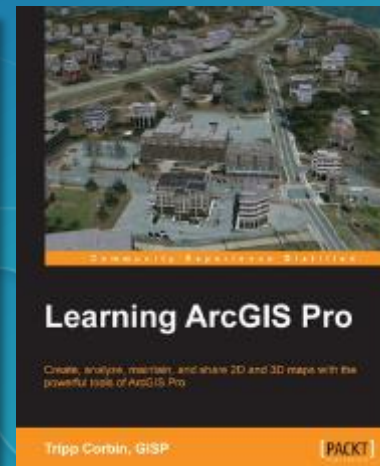
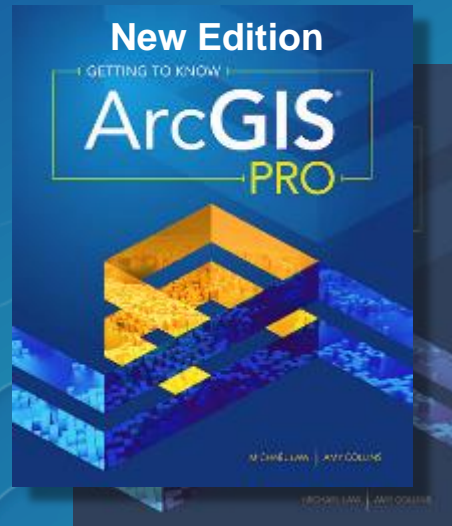
Agenda

ArcGIS Pro Tips and Tricks

- **Resources**
- **Application**
- **Map Exploration**
- **Map Authoring and Sharing**
- **Data Management and Editing**
- **Geoprocessing and Automation**

Learning Resources

- **Get Started with ArcGIS Pro**
 - 15 Quick-start tutorials
- **esri.com/training**
 - web courses, videos and training seminars
- **learn.arcgis.com**
 - 11 ArcGIS Pro lessons
- **3 books plus a 4th on the way**

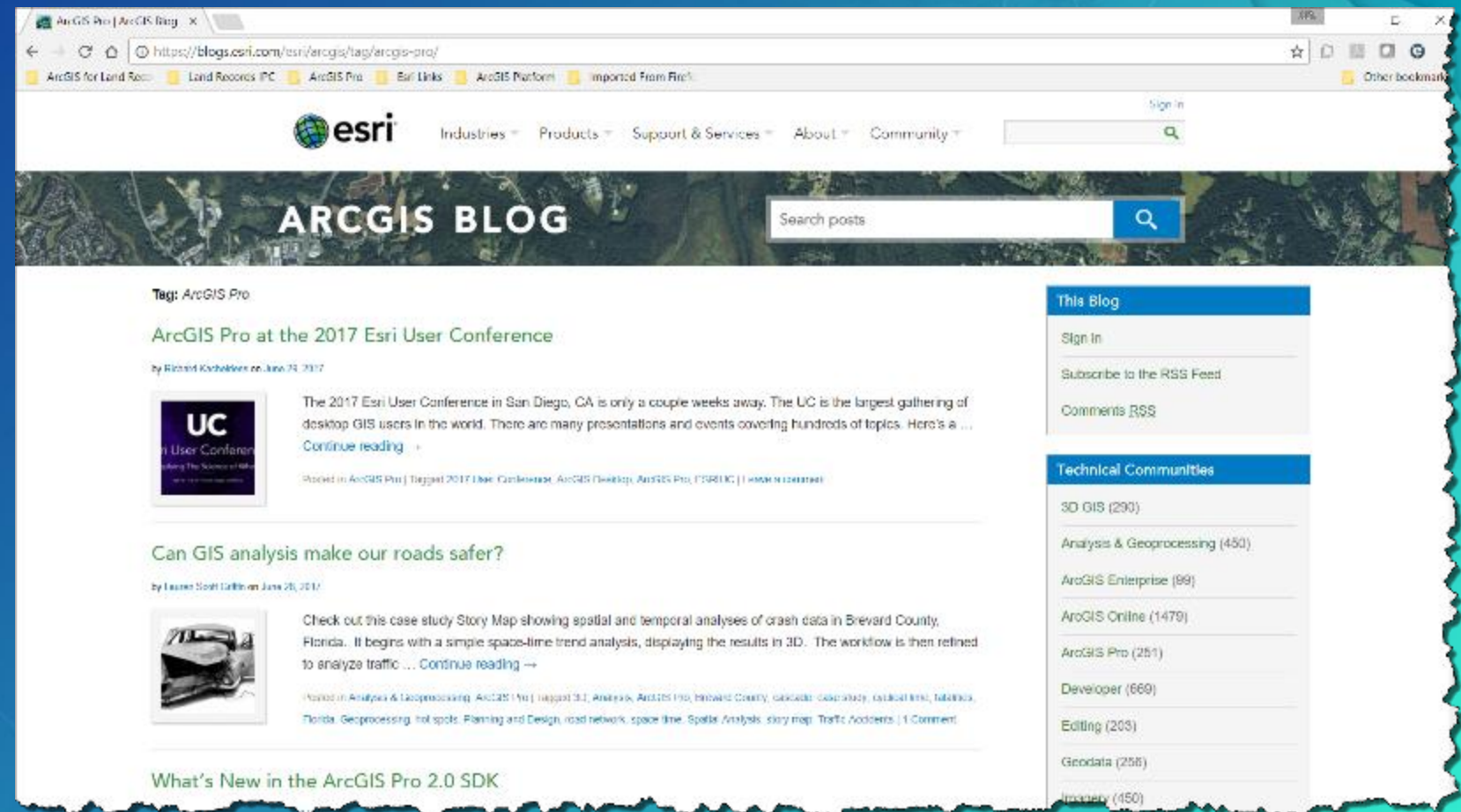


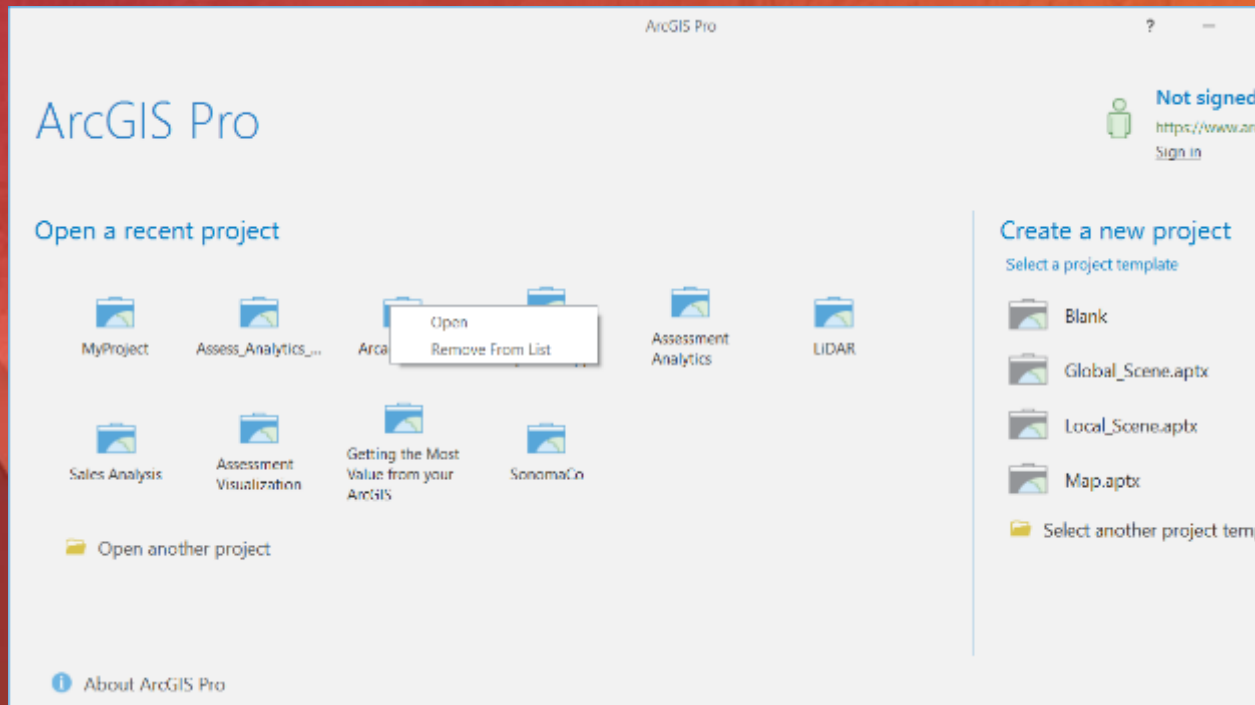
ArcGIS Blog

<https://blogs.esri.com/esri/arcgis/feed>



- <https://blogs.esri.com/esri/arcgis/tag/arcgis-pro/>



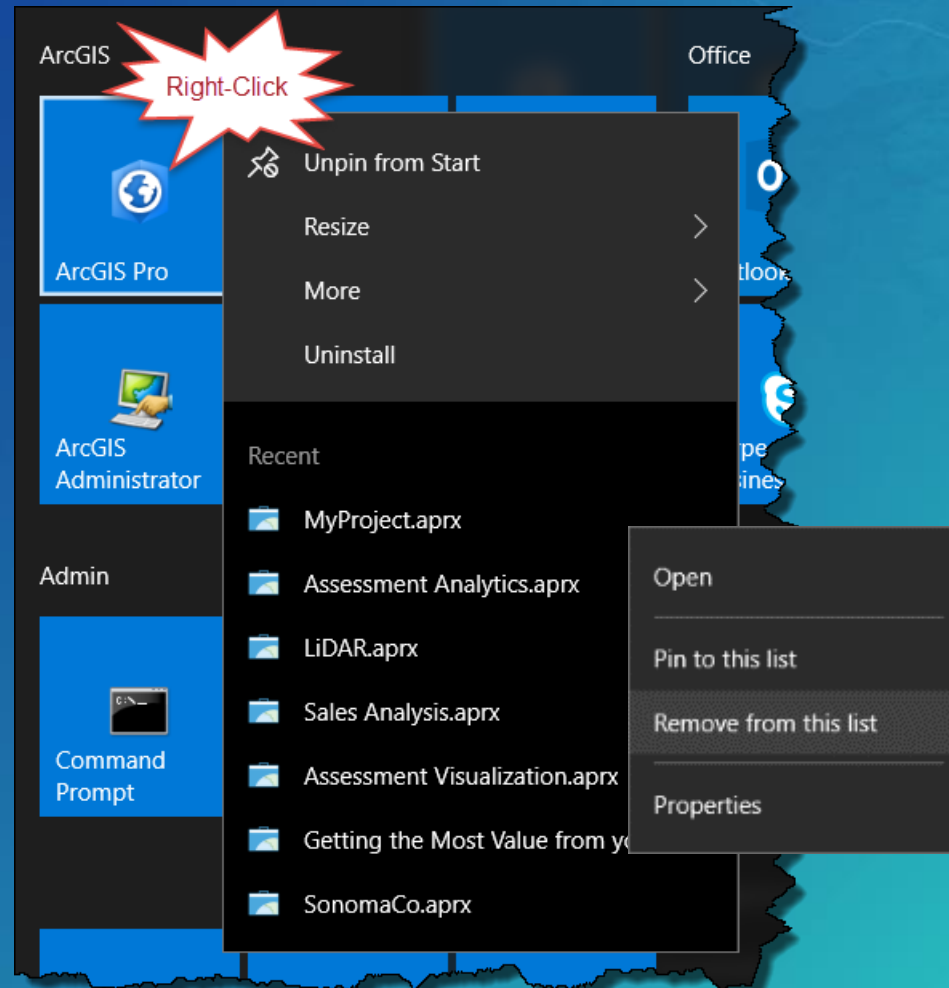


Application Tips

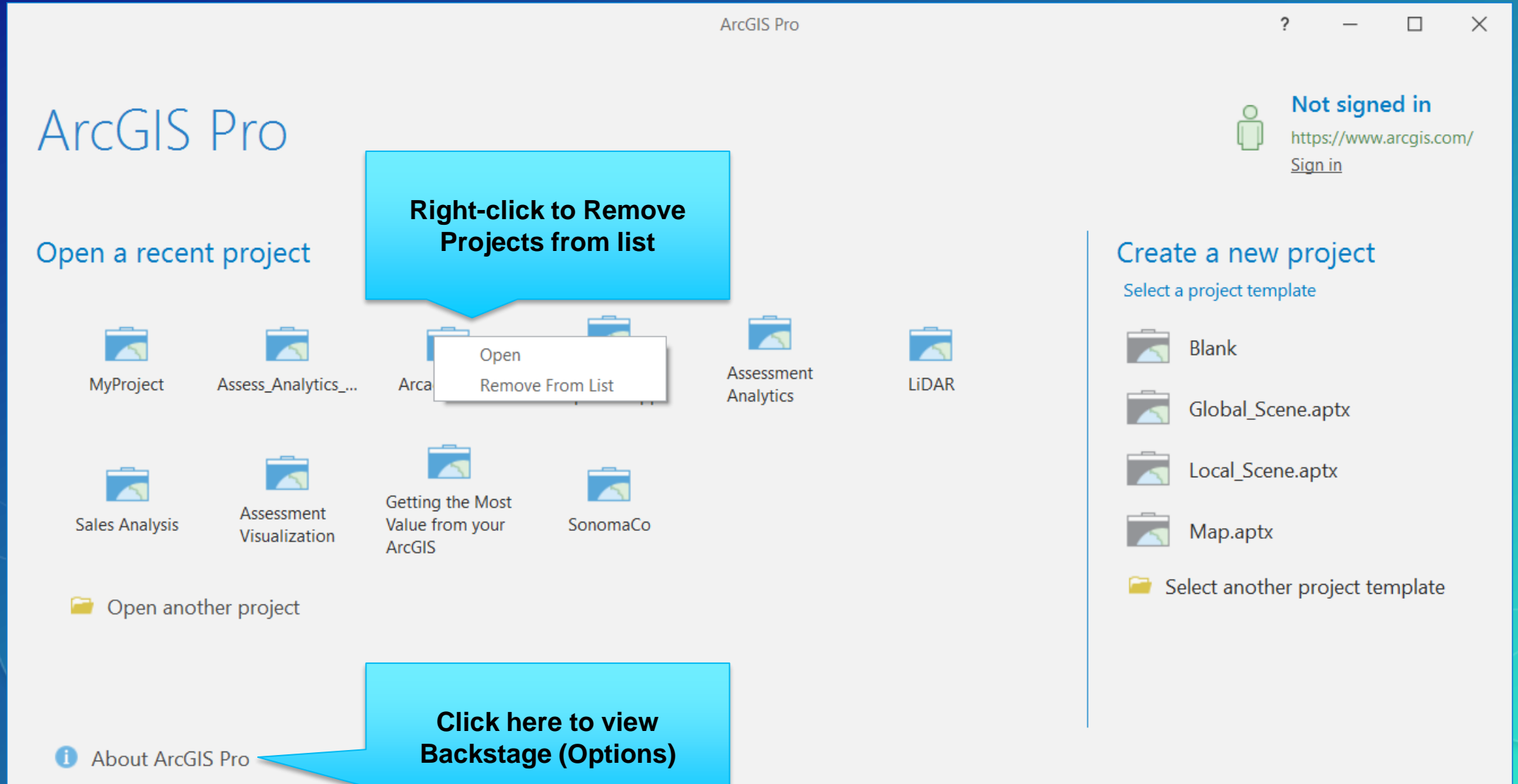
Demonstration

Start Pro with an existing Project

- **Windows 10**
 - Show recently open items
- **Right-click on ArcGIS Pro**
- **Select a Project**
- **Can remove from list**

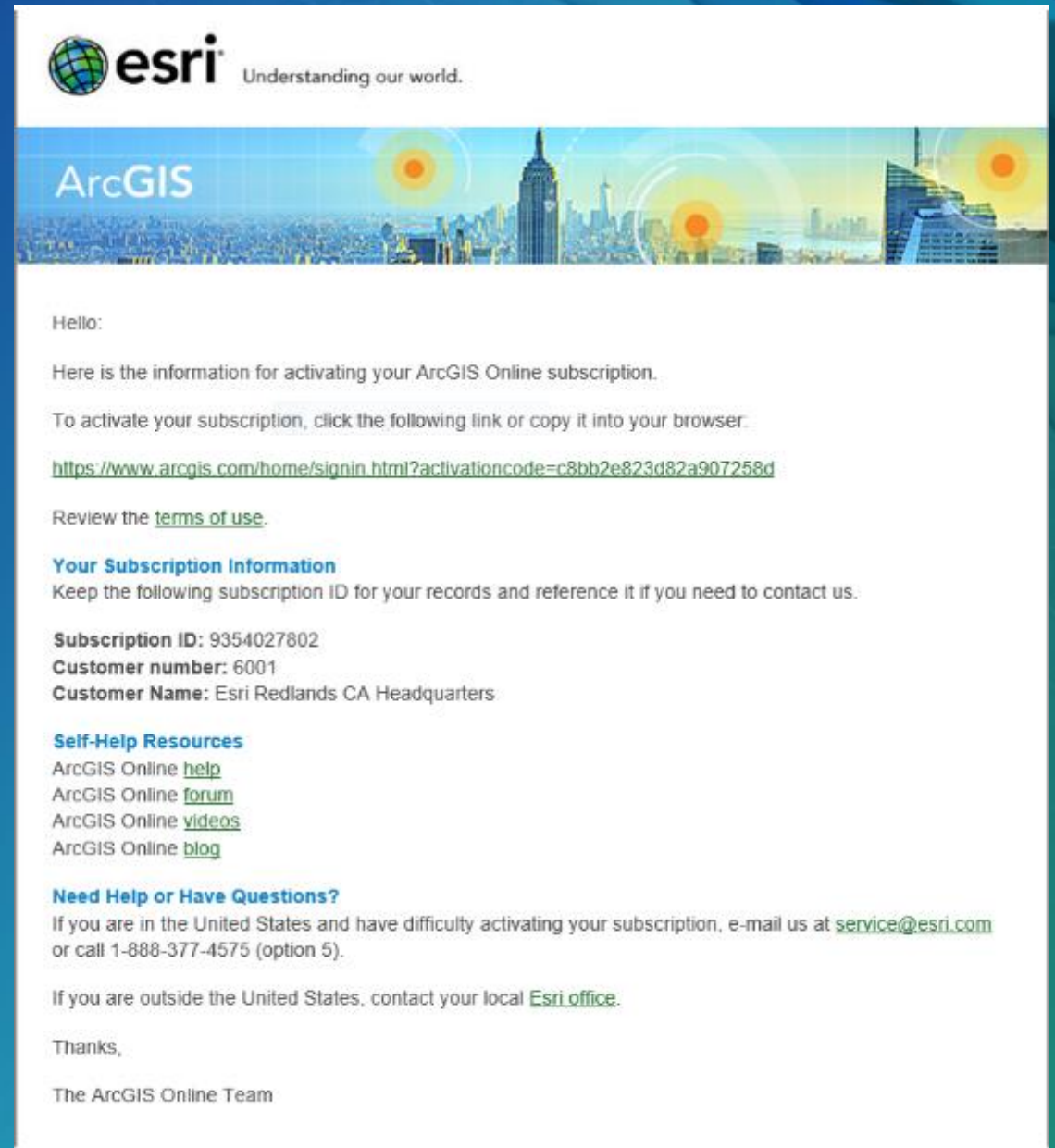


Start screen



Important Licensing e-mail

- Sent to Primary Contact
- Activate your ArcGIS Online Subscription
- ArcGIS Pro Licenses can be added



Licensing

- **Project > Portals (Licensing icon)**
 - Create custom Role for non Admins to manage

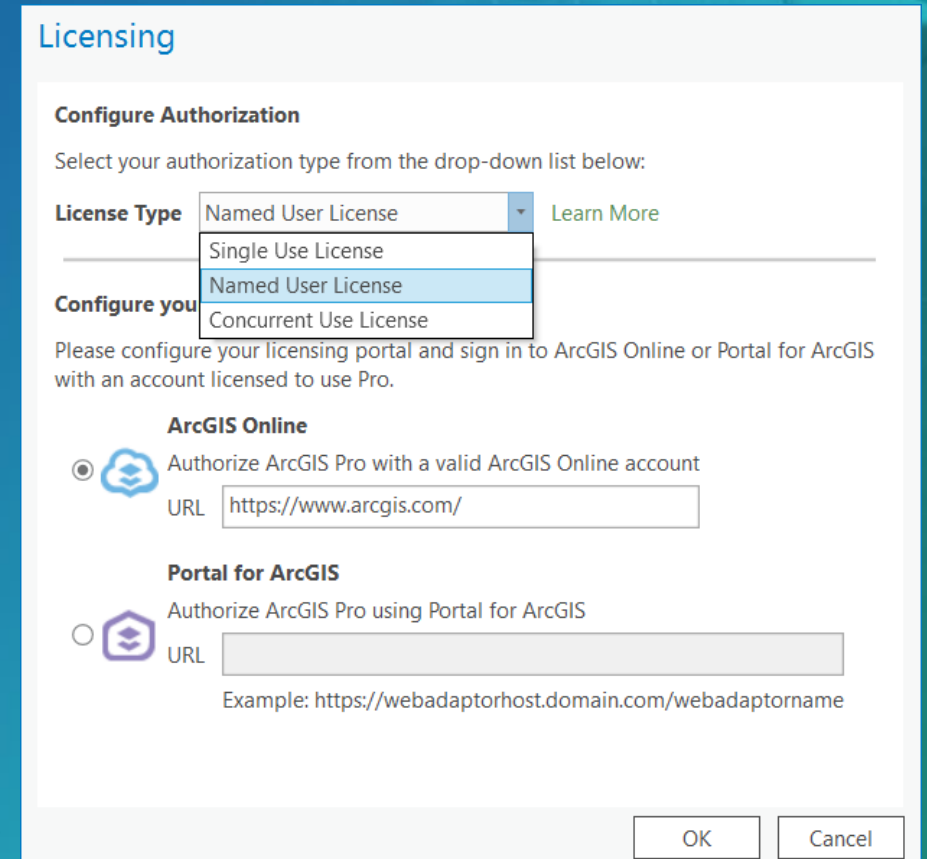
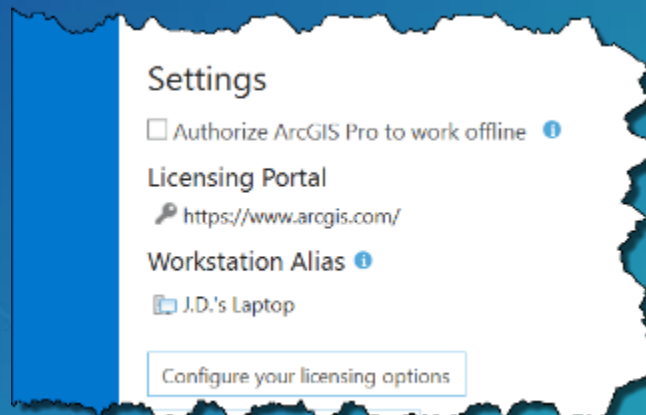


<https://www.arcgis.com/>

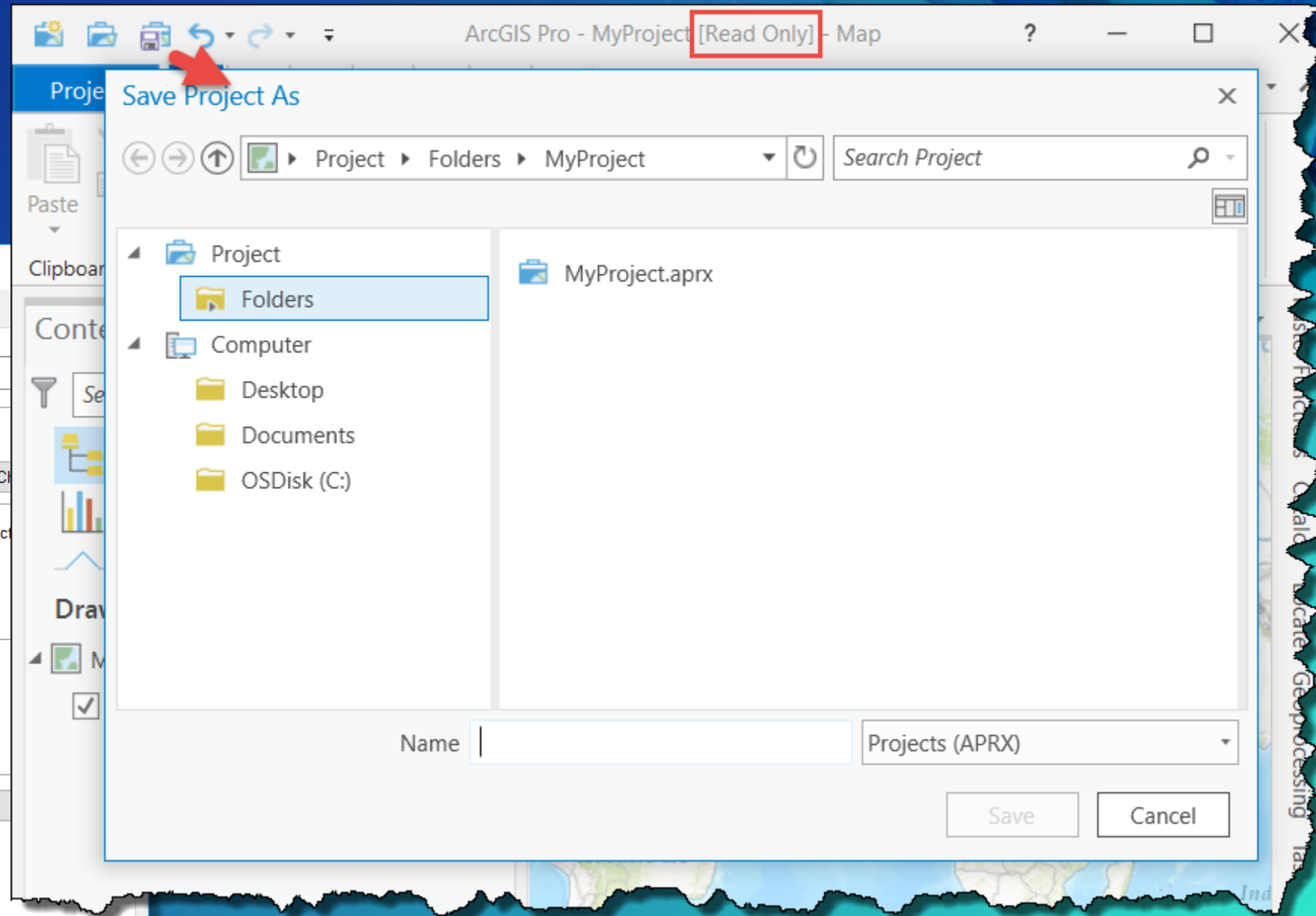
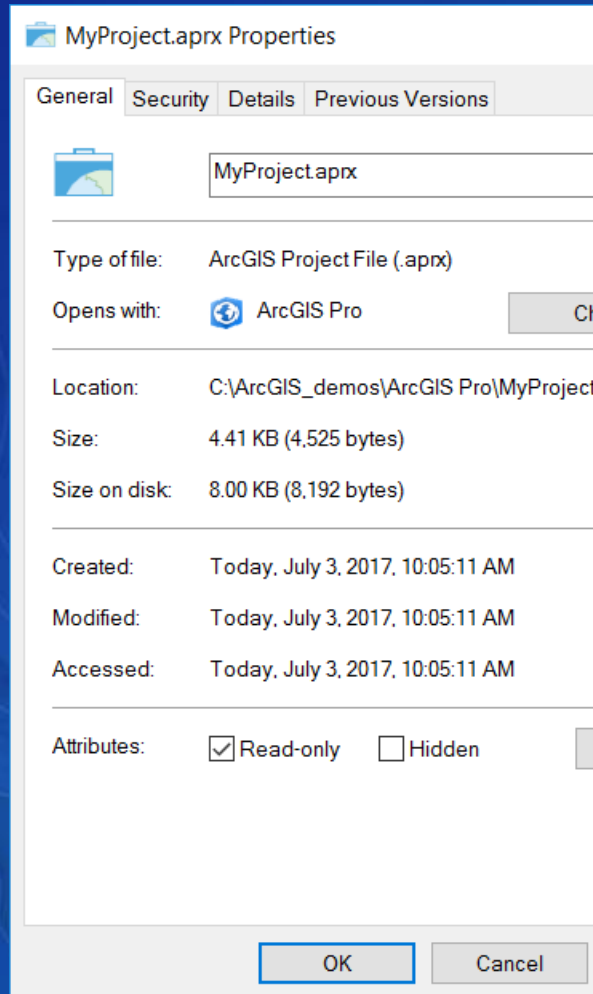
Available : Signed in as jd1765@esri.com_EsriLand

- **Configure Licenses**
 - Set at Startup
 - Project > Licensing

- **Go Offline**
 - Take License Offline
 - Set Alias for machine



Read-Only Projects



Backstage

Options that establish how Pro works

- **General**

- Default GDB, Toolbox, and Folder locations
- Be aware setting Enterprise GDB as Default make it target for GP output, Map Notes, etc.

- **Map and Scene**

Basemap, New layers visible, and Spatial Reference

- **Navigation**

- Roller wheel behavior and Transition Time

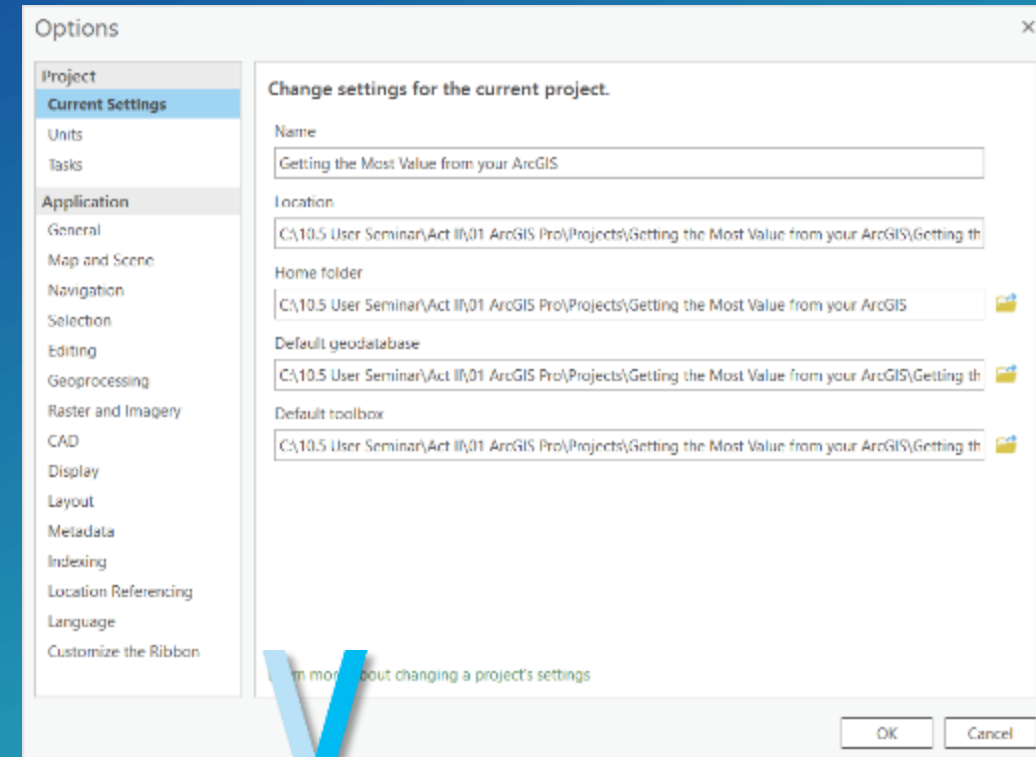
- **Selection**

- Display interactive selection graphic

- **Geoprocessing**

- Allow geoprocessing tools to overwrite existing datasets
- Raster and Imagery

- **Raster Dataset > Use world file to define the coordinates of the raster**

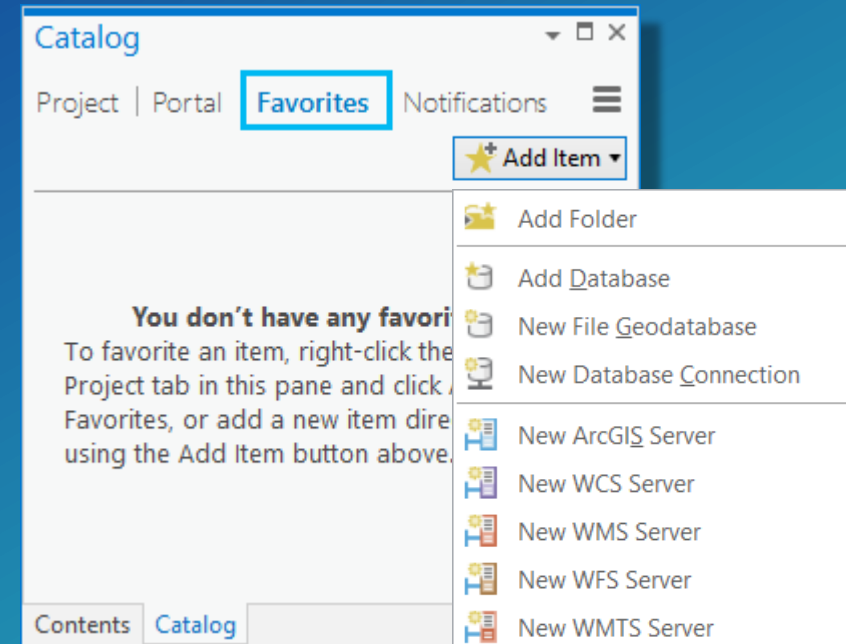
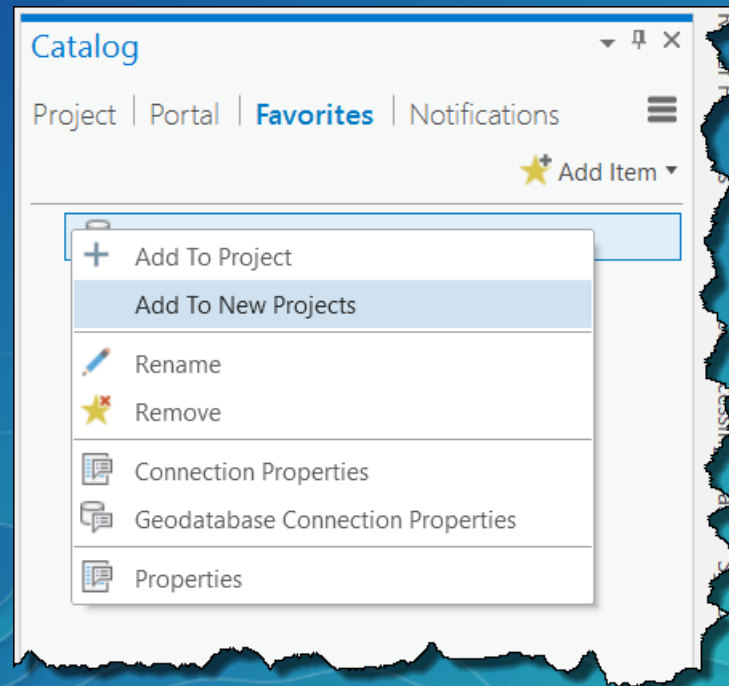


ACCESS ●●●○○
SECURITIES ●●○○○
CAPABILITIES ●●●○○

Favorites

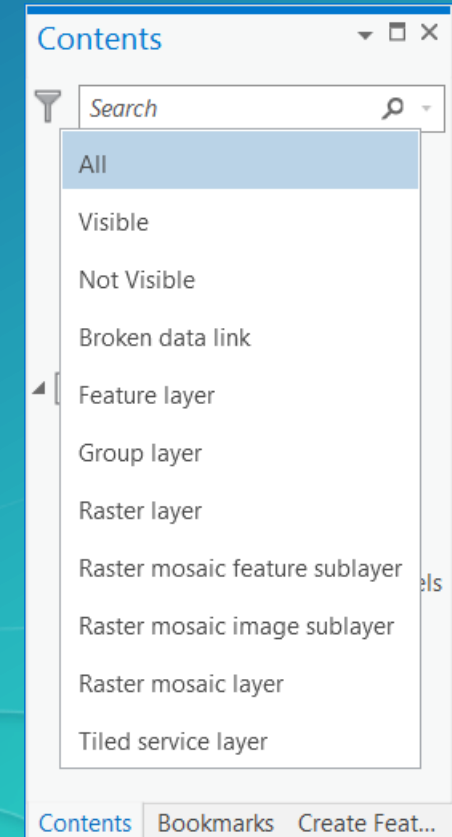
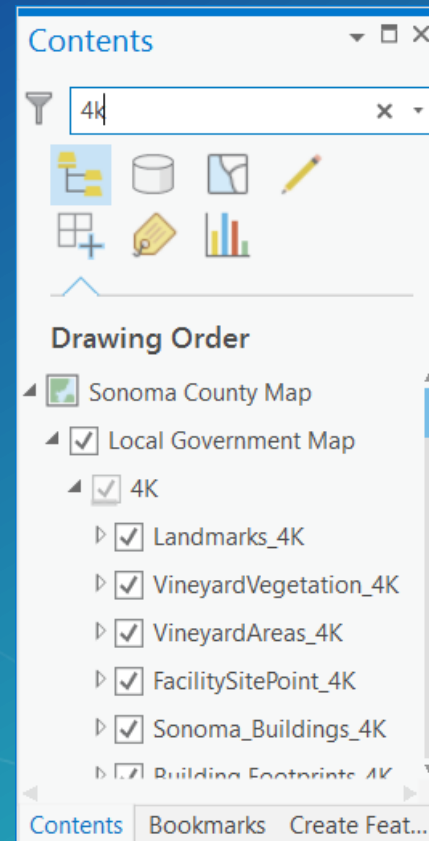
Catalog pane

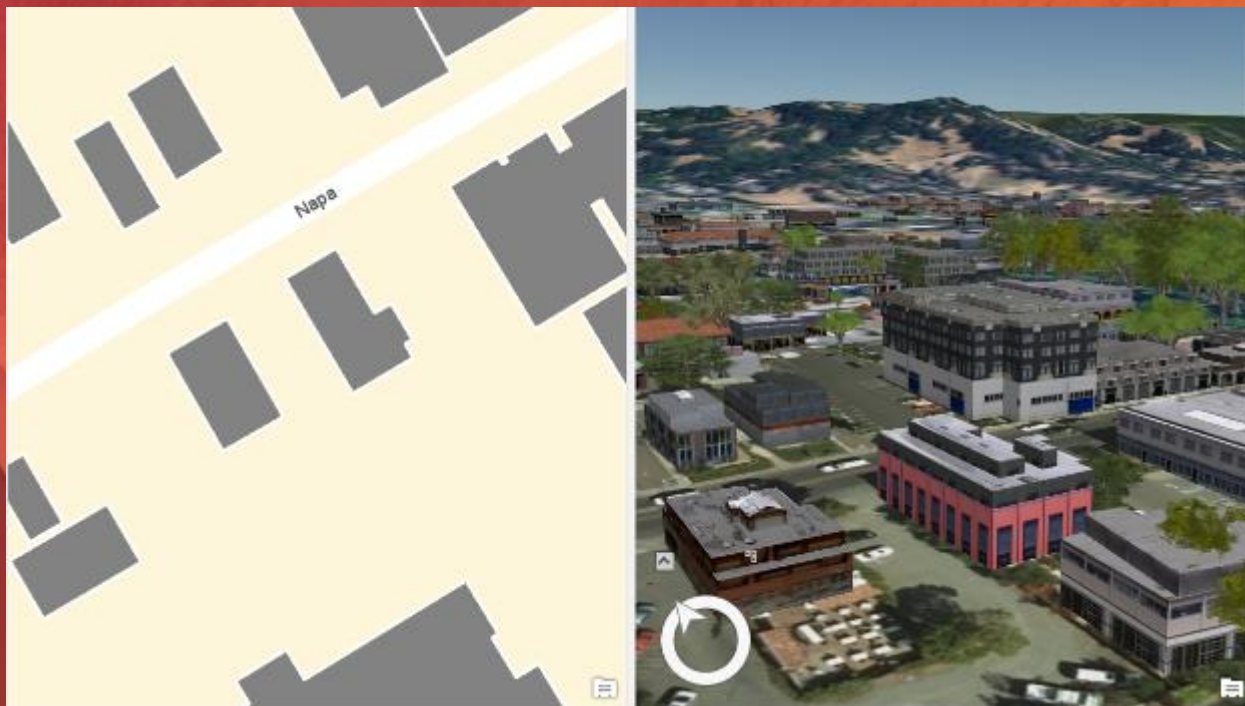
- Folder, database, server connections
- A-la cart or to every new project



Contents Pane – Search and Filter

- **Search**
 - Layers filtered by Search string (4k)
- **Filter Contents**
 - All
 - Visible
 - Not Visible
 - Feature layer
 - Group layer
 - Raster
 - many more...



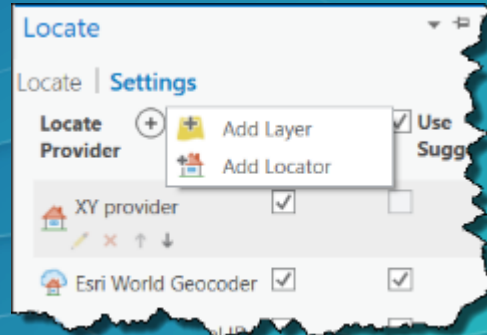
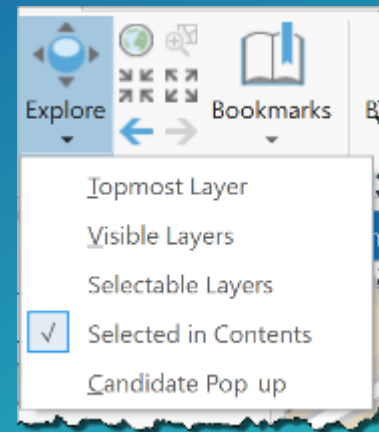


Map Exploration Tips

Demonstration

Map Exploration

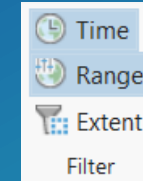
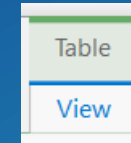
- Link Maps (and/or Scenes)
- Bookmarks from any map available for other maps/scenes
- Explore tool is Identify, pan, zoom.
 - How to control what you are Identifying
 - Disable Popups on layers you don't want to Identify
 - Change the behavior of Explore tool
- Add Layers as Locators



WSYWIG - Demonstration

What you see is what you get

- Table window filtered by Time, Range, and Visible Extent
 - Highlighted Selected
- Charts dynamically update with Time and Range
- Legends on Layout show visible features
- Printing export (transparent symbols)



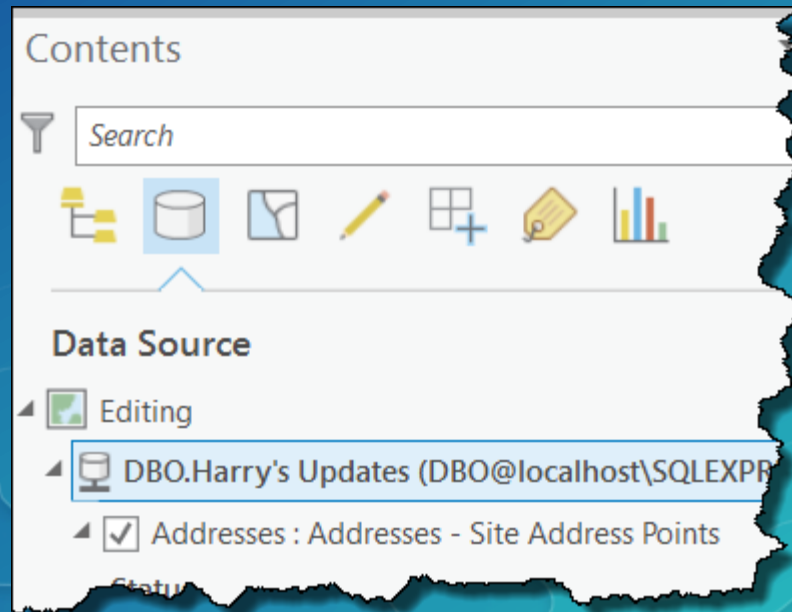


Data Management and Editing Tips

Demonstration

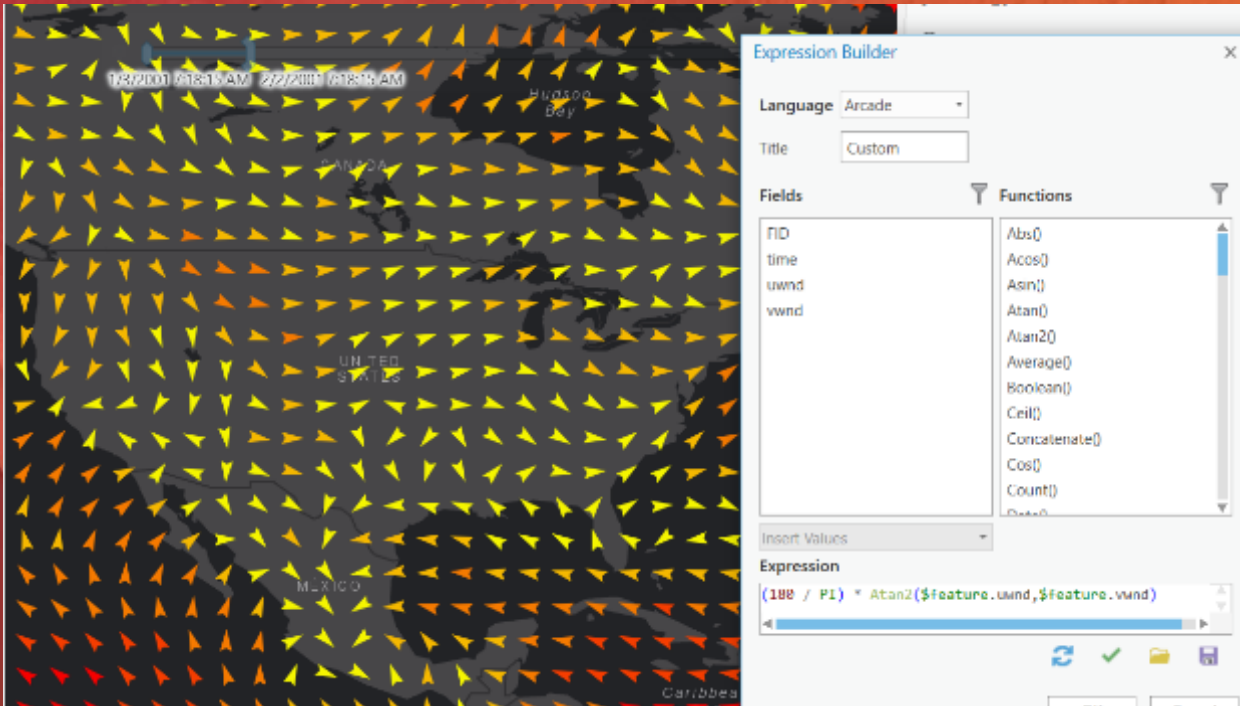
Data Management

- Fields can be copy/pasted
- Reorder fields not permanent (view only)
- Rename fields in tables/layers that you own in the database
- Versioning accessed via Database View and selected Database Connection



Editing

- **Editing Grid**
 - Use Editing Grid in built environments (show how to move, scale, and rotate)
- **Snapping**
 - Units, colors, etc.
- **Disable Feature Cache when editing Feature Services**
- **Map Topology**
 - Edge editing (close gaps) within same layer and with other layers
- **Group Feature Templates**
 - Add features to multiple layers with a single sketch

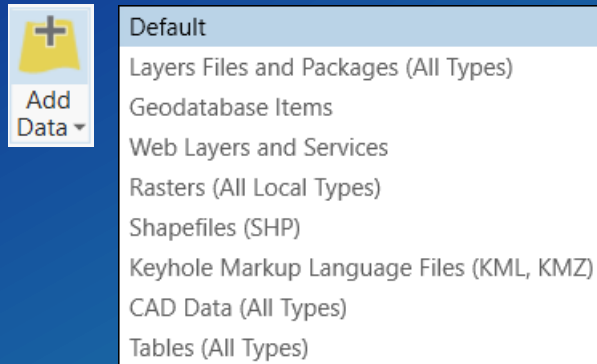


Map Authoring and Sharing Tips

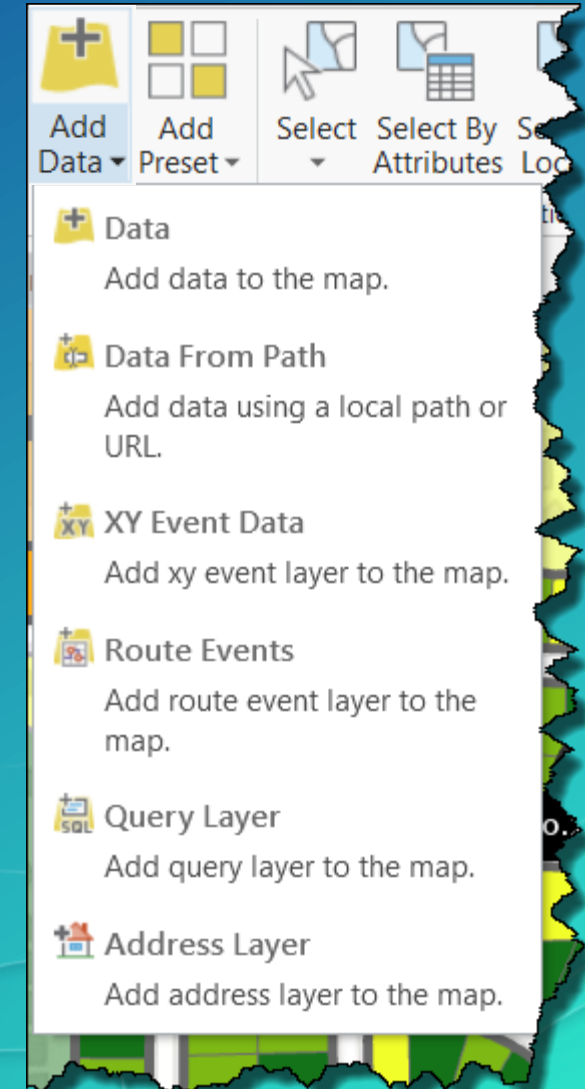
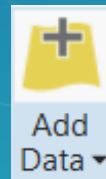
Demonstration

Add Data – Has many Options

- Add Data is one many Split Controls
 - Top applies default filters

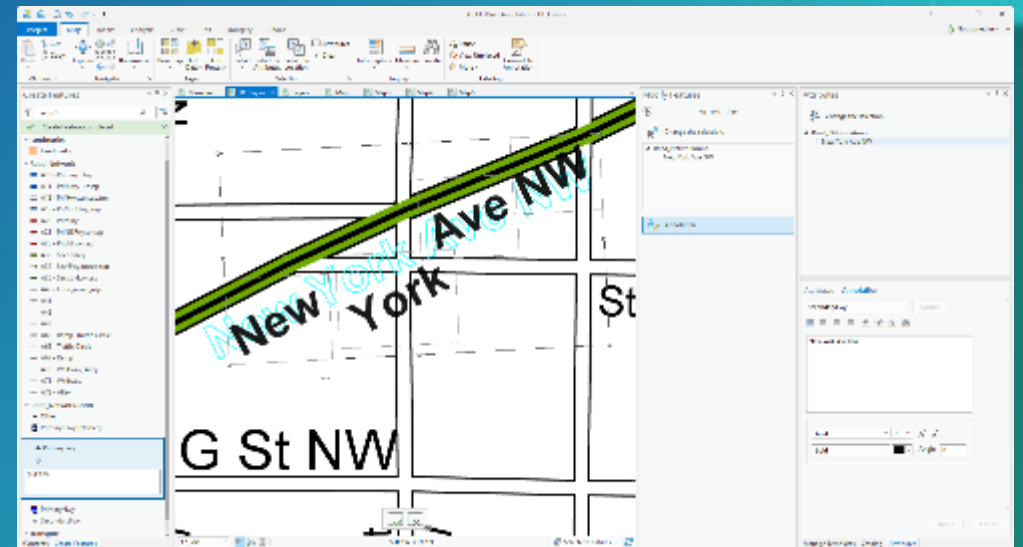
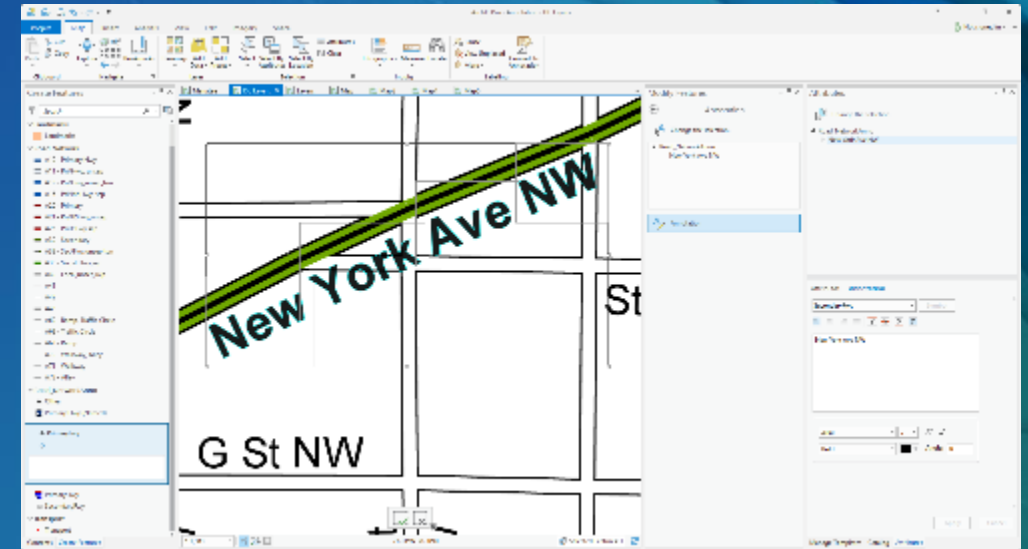
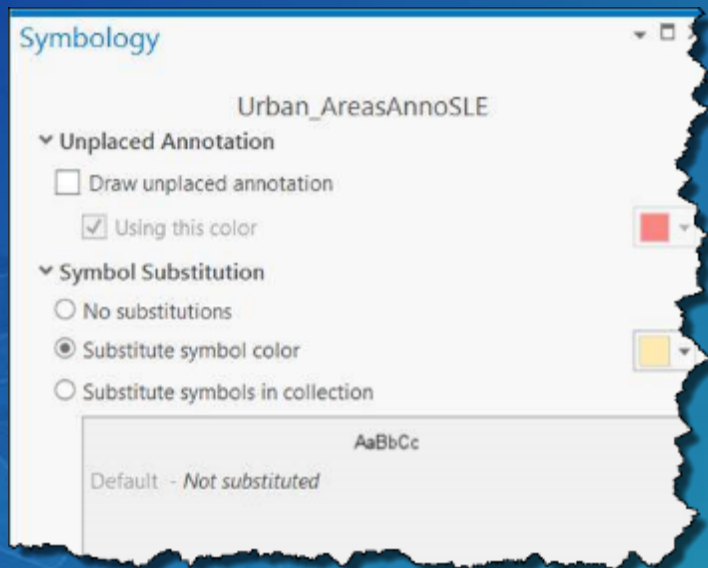


Bottom exposes additional Data types



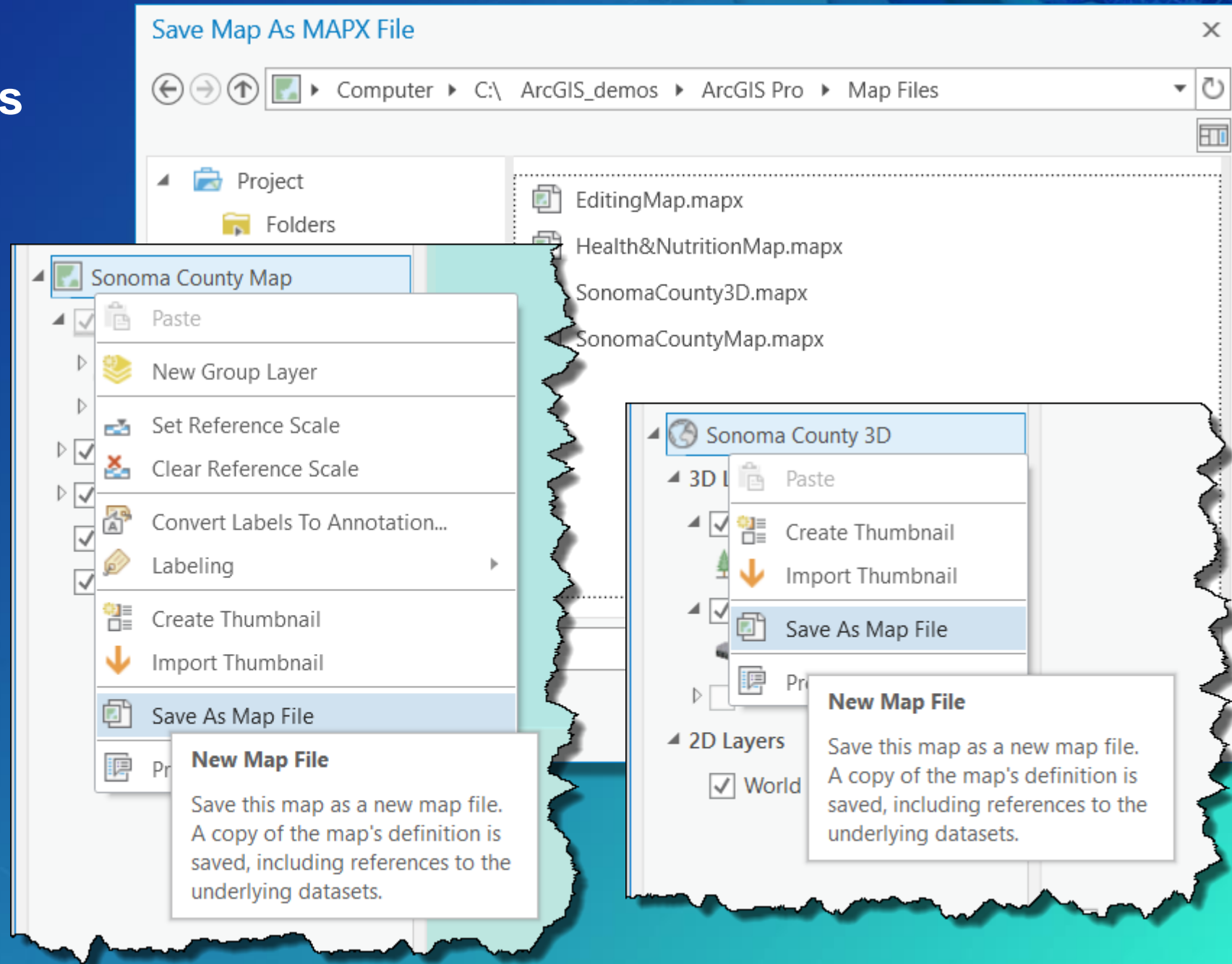
Create and edit Annotation

- Upgrade Annotation feature classes
- Convert Labels to Annotation
 - Feature Linked Annotation
- New Annotation Editing experience
- Symbol Substitution



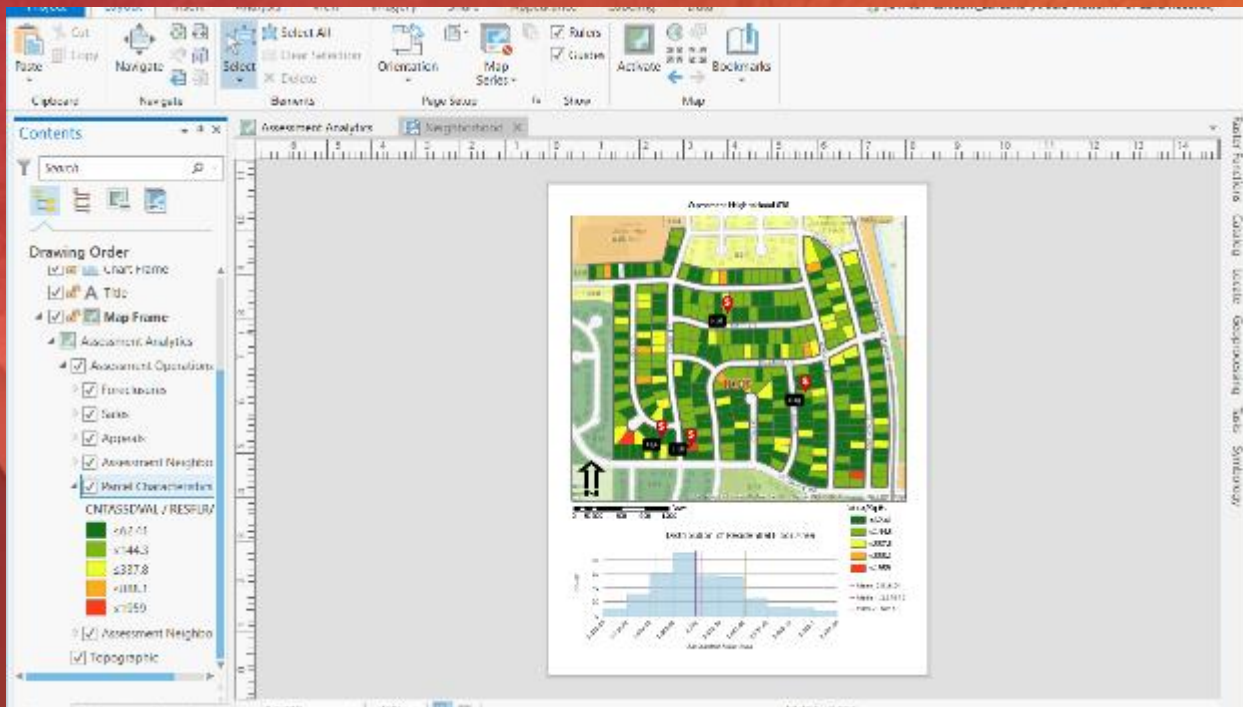
Save Maps and Scenes

- Use in other projects
- Backup
- Share with others



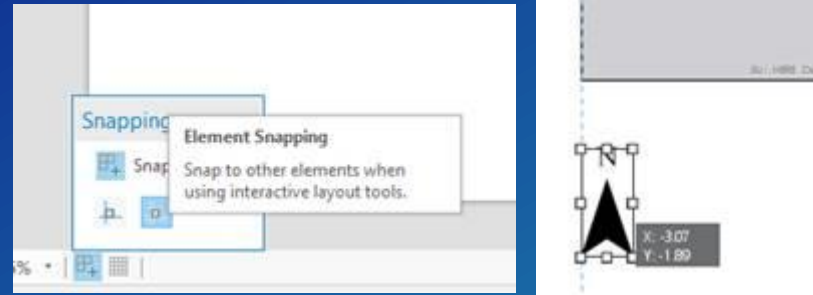
Layout Tips

Demonstration

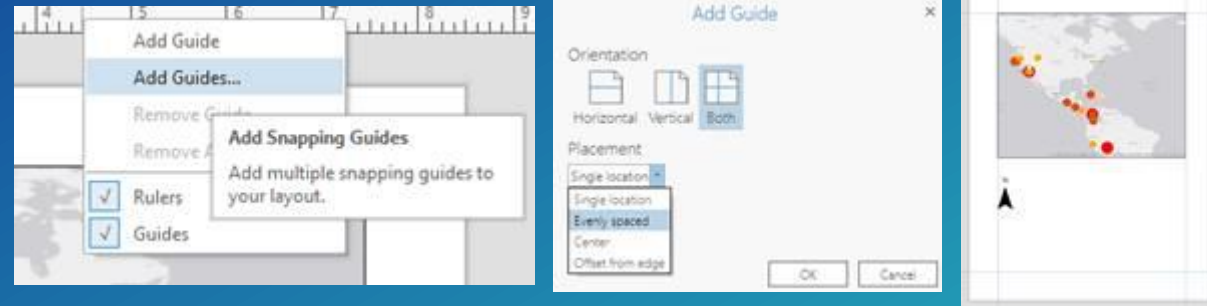


Layouts

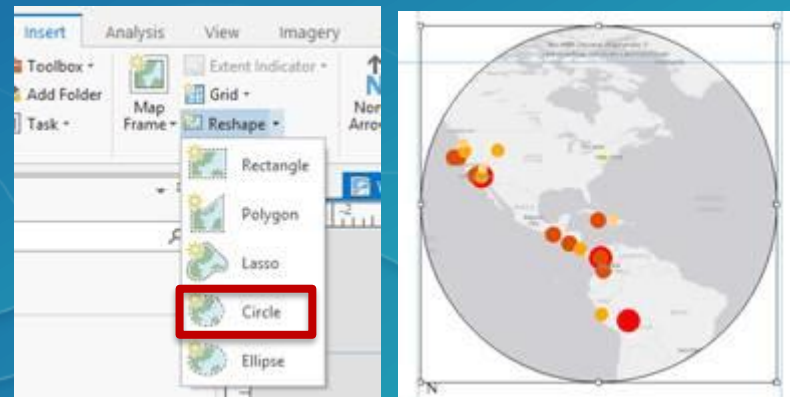
- Element snapping



- Guides



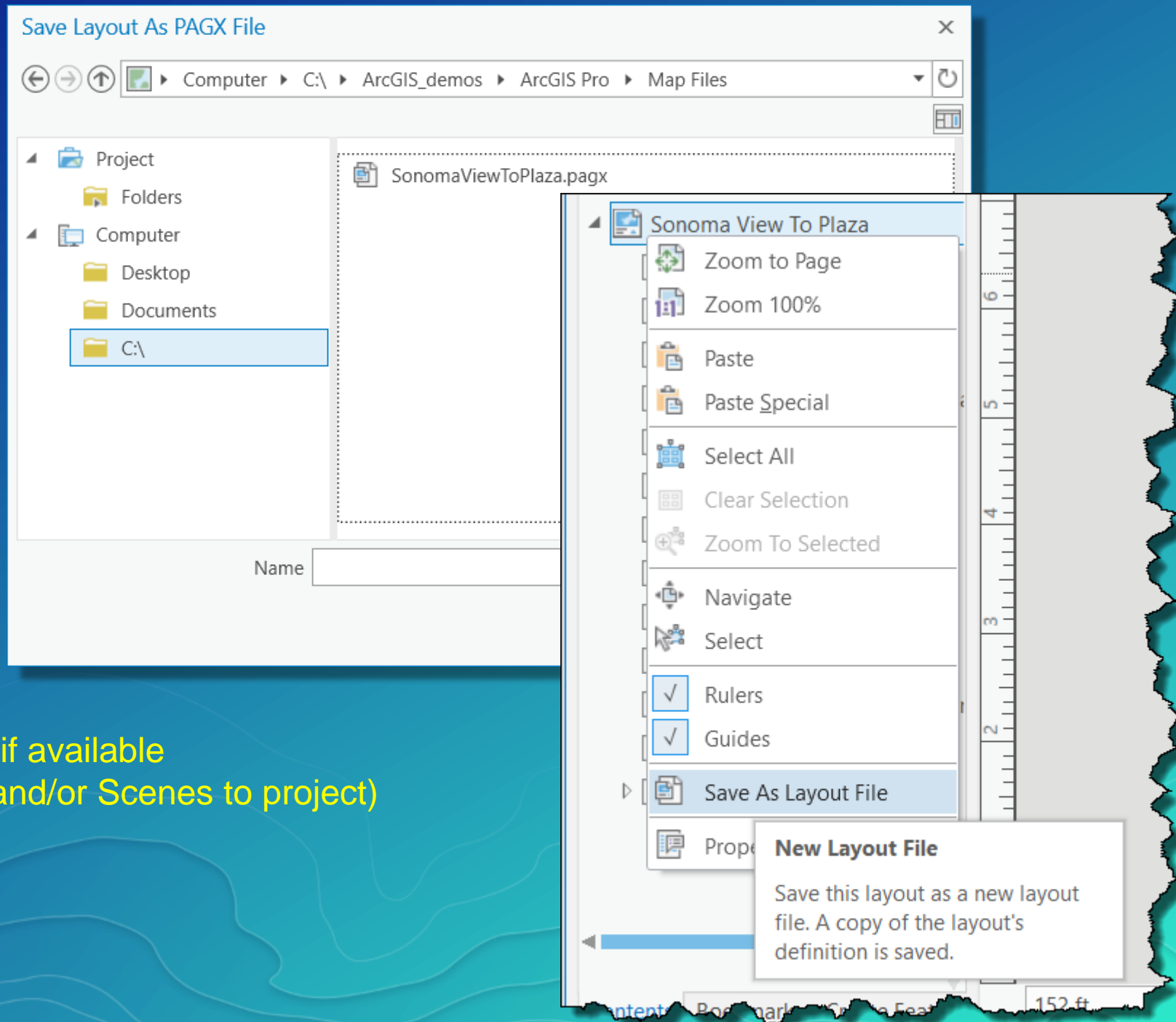
- Reshape map frame
 - **Insert tab**



Save Layouts*

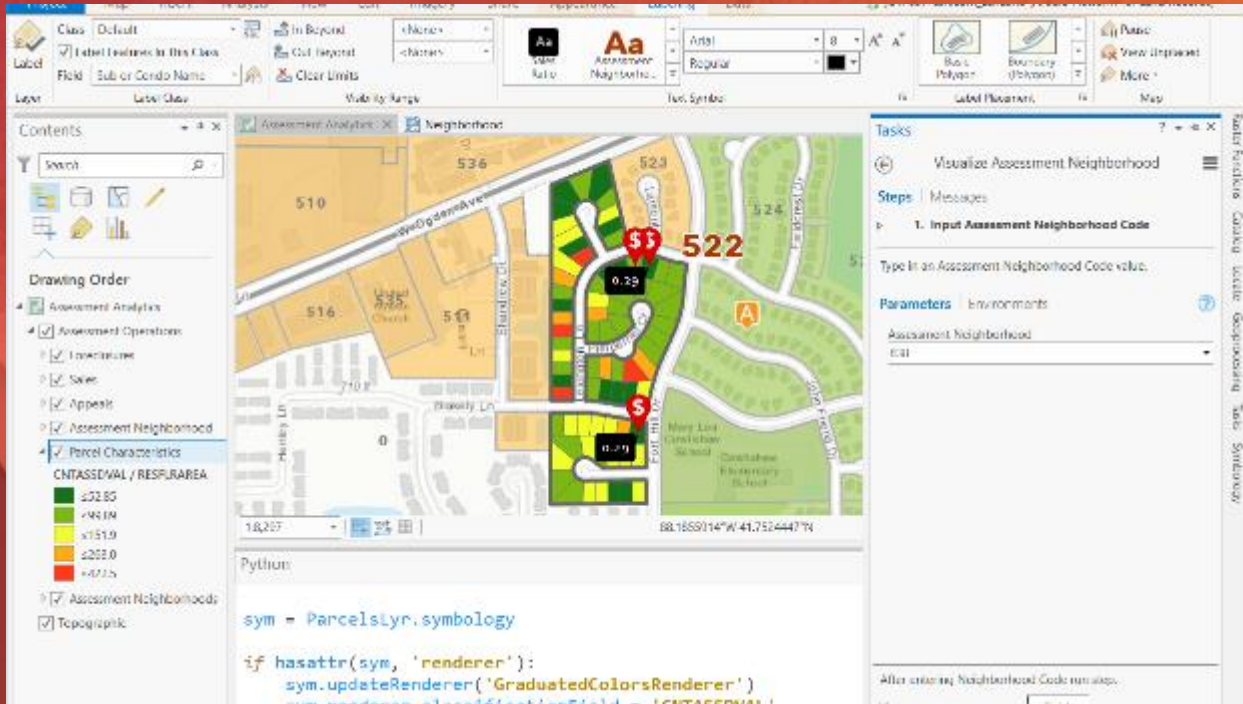
- Use in other projects
- Backup
- Share with others*

* References Map Frames if available
(may need to add Maps and/or Scenes to project)



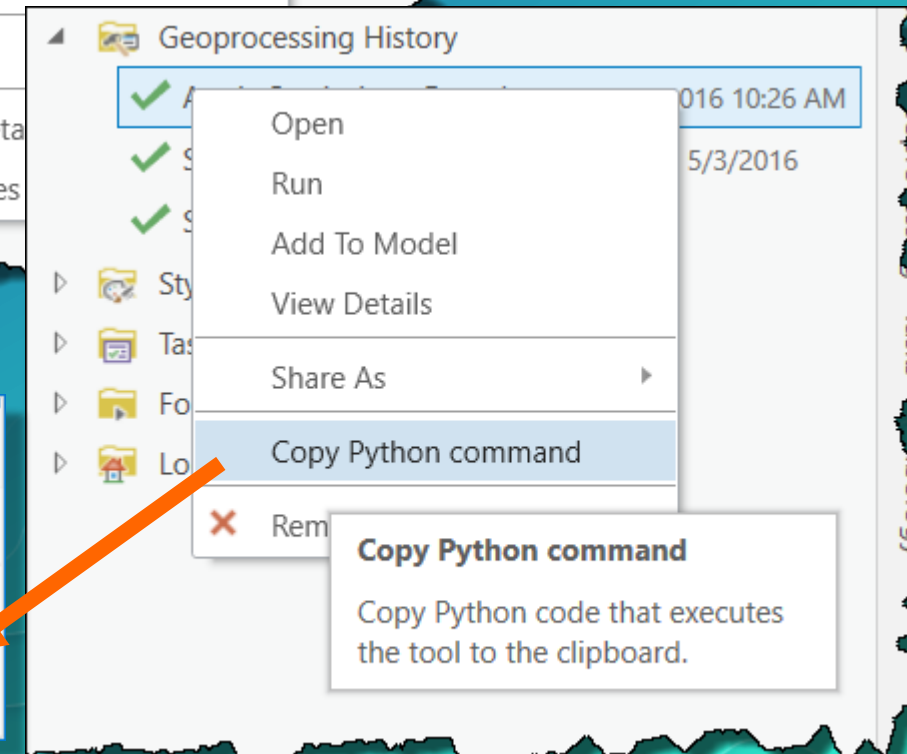
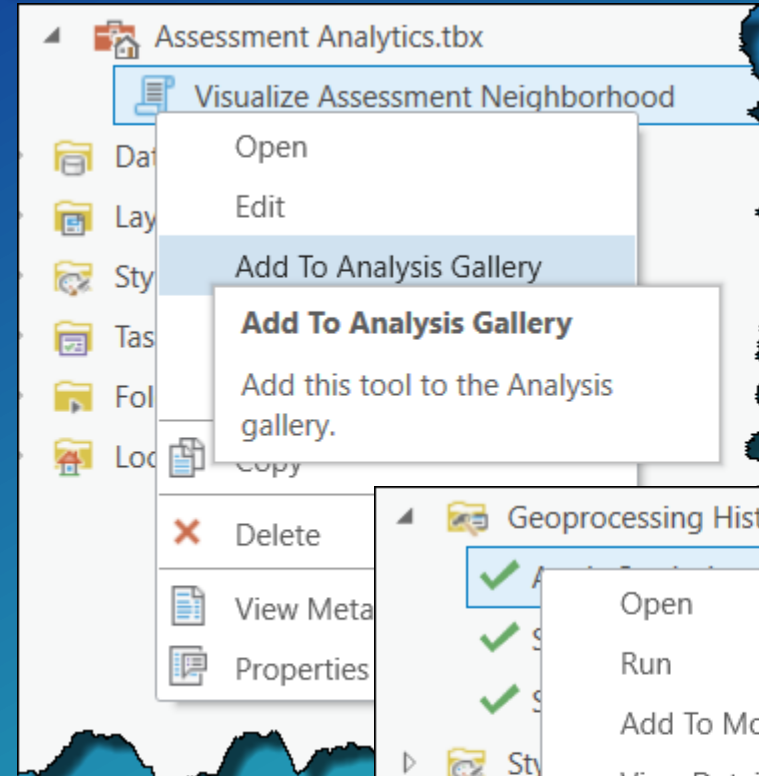
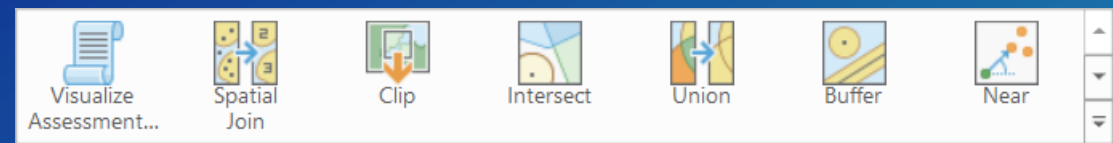
Analysis and Automation Tips

Demonstration



Analysis

- **Customize Analysis Gallery**
 - System tools
 - Scripts
 - Models
- **Geoprocessing History**
 - Logs processing
 - Drag/drop onto Model Builder
 - Right-click Copy Python command
Paste into Python window or IDE

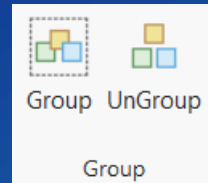


```
Python

arcpy.management.ApplySymbologyFromLayer
("Minus_2012 Mosaic Dataset_2008 Mosaic Dataset",
"Difference.tif", "VALUE_FIELD # #")
```


Model Builder

- **Group Elements**



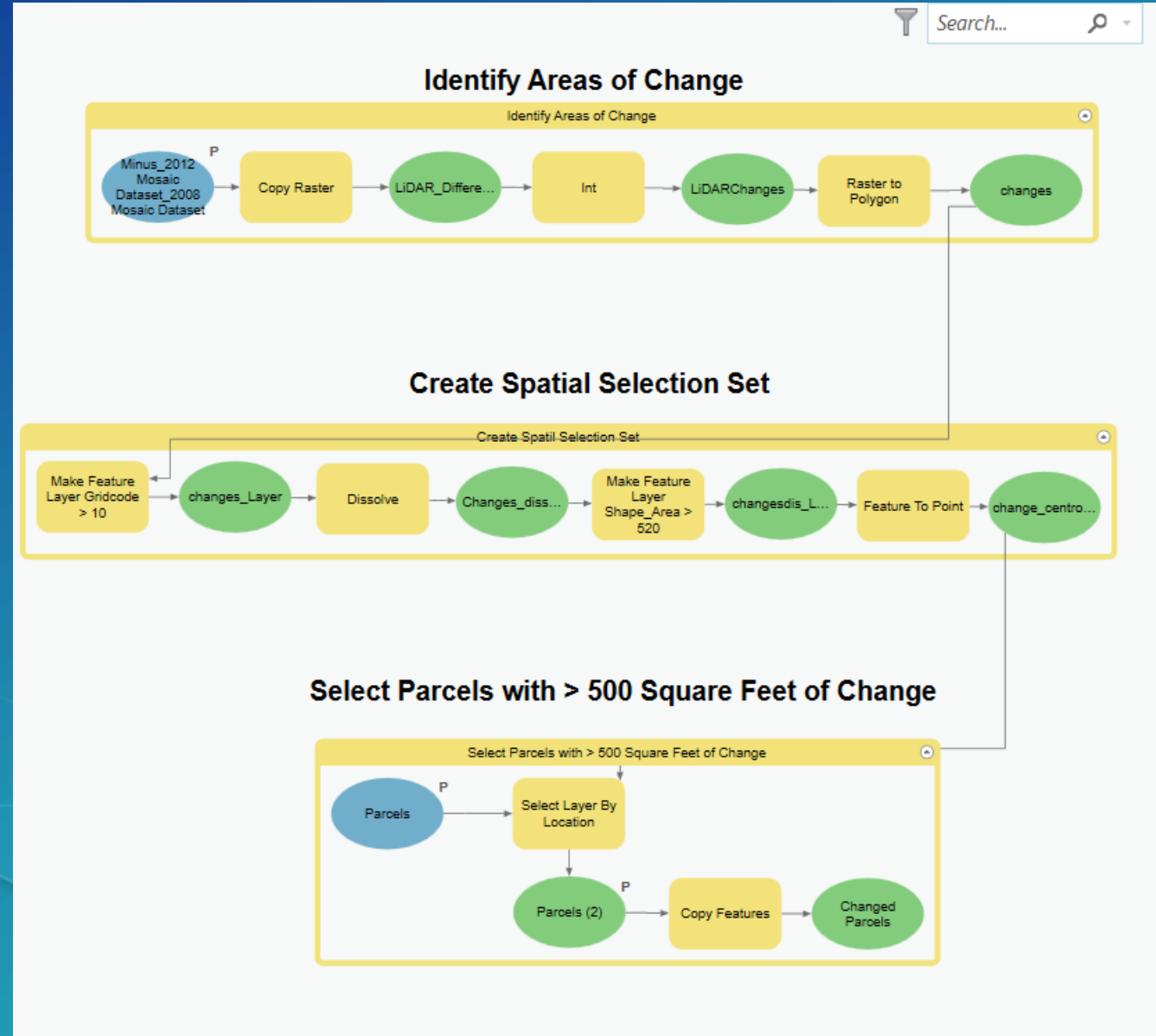
- **Lock Elements**

- Ignored by Auto Layout



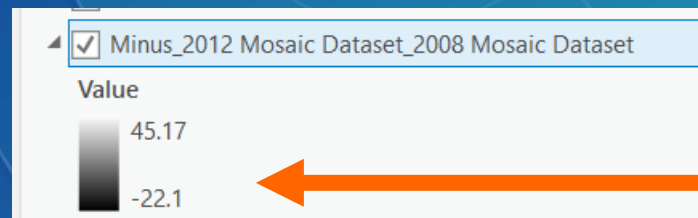
Lock Element

Locks element from being affected by Auto-Layout.



Raster Functions

- Search/Filter
- Select inputs in Contents
- Apply to Selected



Drawing Order

- ▾ Mosaic and LAS Datasets
 - ☒ Changed Parcels
 - ☒ Parcels
 - ☐ Minus_2012 Mosaic Dataset_2008 Mosaic Dataset
 - ☐ Difference.tif
 - ▾ 2012 Mosaic Dataset
 - ☐ Boundary
 - ☐ Footprint
 - ☒ Image
 - ▾ 2008 Mosaic Dataset
 - ☐ Boundary
 - ☐ Footprint
 - ☒ Image
 - ☐ 2012 LAS Dataset
 - ☐ 2008 LAS Dataset
 - ☒ 2012 Imagery
 - ☐ 2008 Imagery

Raster Functions

Minus Properties

General | **Parameters**

<RasterFunctionVariable: Raster> +

Raster2

<RasterFunctionVariable: InRaster2> +

Cellsize Type

Max Of

Extent Type

Intersection Of

Python

Create new layer ▾ Cancel

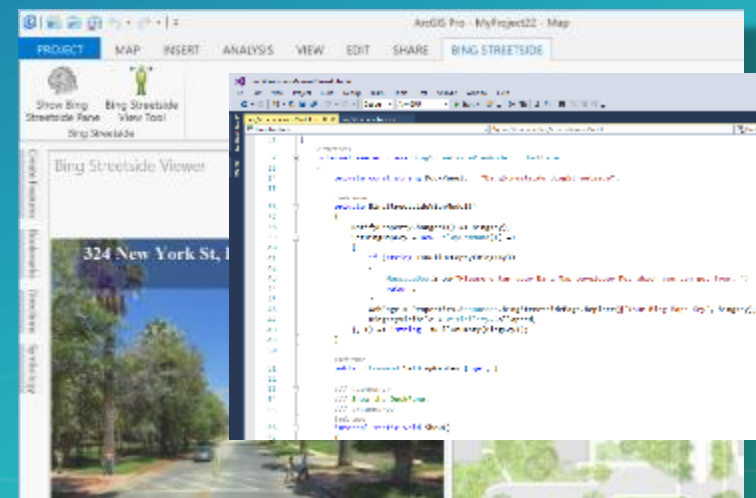
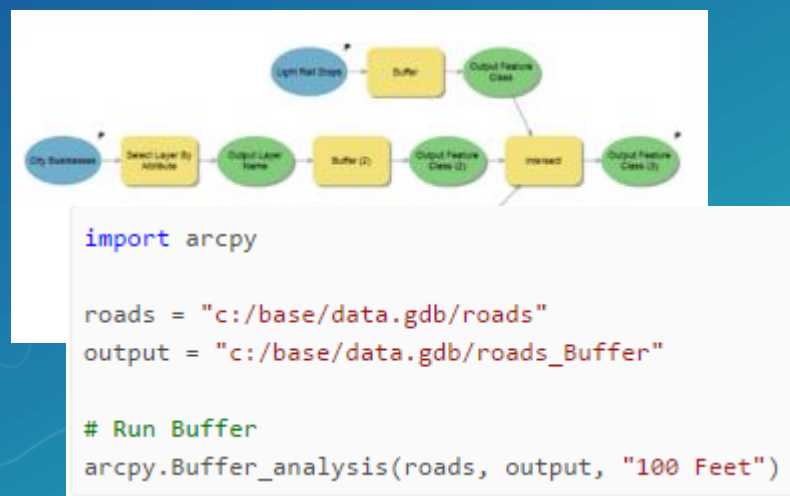
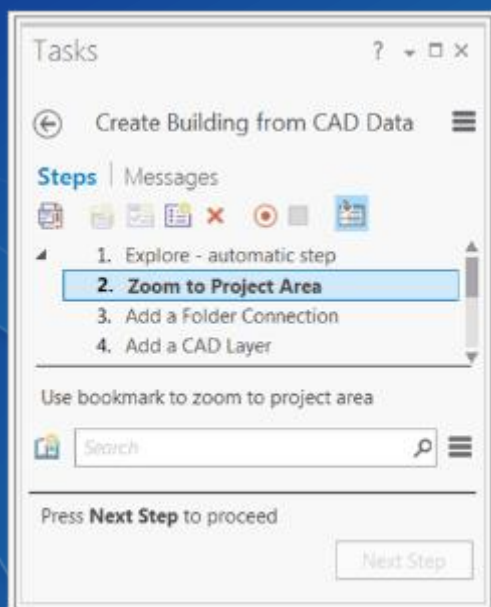
Create new layer

Apply on Selected Layer(s)

Save As

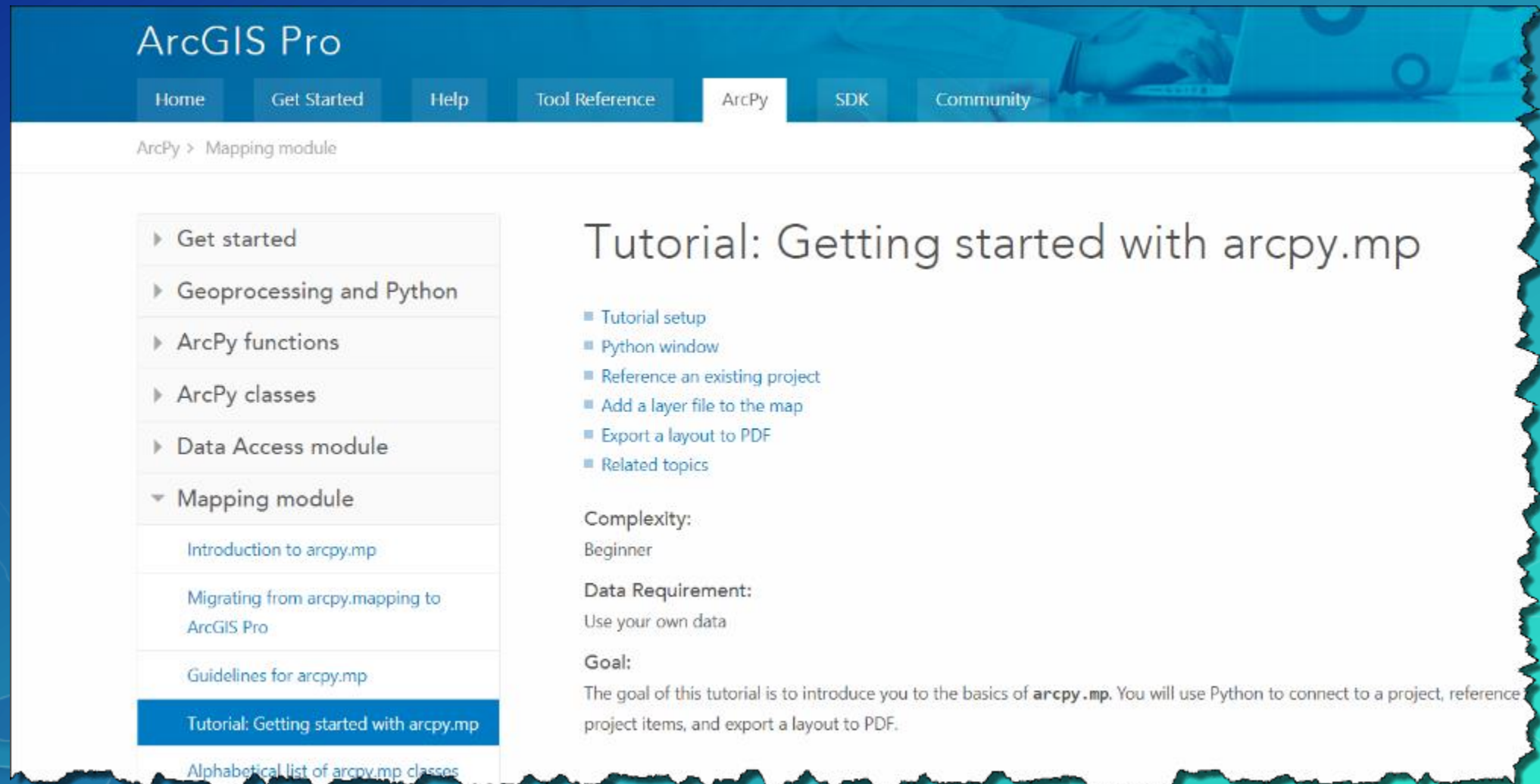
Extending ArcGIS Pro

- Ways to extend ArcGIS Pro:
 - **Configure** UI through settings, and workflow through Tasks
 - **Automate** using geoprocessing and Python
 - **Extend** with the Pro SDK



Automation with ArcPy

<http://pro.arcgis.com/en/pro-app/arcpy/mapping/tutorial-getting-started-with-arcpy-mp.htm>



The screenshot displays the ArcGIS Pro website interface. At the top, a navigation bar includes links for Home, Get Started, Help, Tool Reference, ArcPy, SDK, and Community. Below this, a breadcrumb trail shows 'ArcPy > Mapping module'. A left-hand sidebar contains a list of topics: 'Get started', 'Geoprocessing and Python', 'ArcPy functions', 'ArcPy classes', 'Data Access module', and 'Mapping module'. The 'Mapping module' is expanded, showing sub-topics: 'Introduction to arcpy.mp', 'Migrating from arcpy.mapping to ArcGIS Pro', 'Guidelines for arcpy.mp', and 'Tutorial: Getting started with arcpy.mp' (which is highlighted in blue). At the bottom of the sidebar is a link for 'Alphabetical list of arcpy.mp classes'. The main content area features the title 'Tutorial: Getting started with arcpy.mp' followed by a list of topics: 'Tutorial setup', 'Python window', 'Reference an existing project', 'Add a layer file to the map', 'Export a layout to PDF', and 'Related topics'. Below this list, three sections are defined: 'Complexity: Beginner', 'Data Requirement: Use your own data', and 'Goal: The goal of this tutorial is to introduce you to the basics of **arcpy.mp**. You will use Python to connect to a project, reference project items, and export a layout to PDF.'

ArcGIS Pro

Home Get Started Help Tool Reference ArcPy SDK Community

ArcPy > Mapping module

- ▶ Get started
- ▶ Geoprocessing and Python
- ▶ ArcPy functions
- ▶ ArcPy classes
- ▶ Data Access module
- ▼ Mapping module
 - Introduction to arcpy.mp
 - Migrating from arcpy.mapping to ArcGIS Pro
 - Guidelines for arcpy.mp
 - Tutorial: Getting started with arcpy.mp**
 - Alphabetical list of arcpy.mp classes

Tutorial: Getting started with arcpy.mp

- Tutorial setup
- Python window
- Reference an existing project
- Add a layer file to the map
- Export a layout to PDF
- Related topics

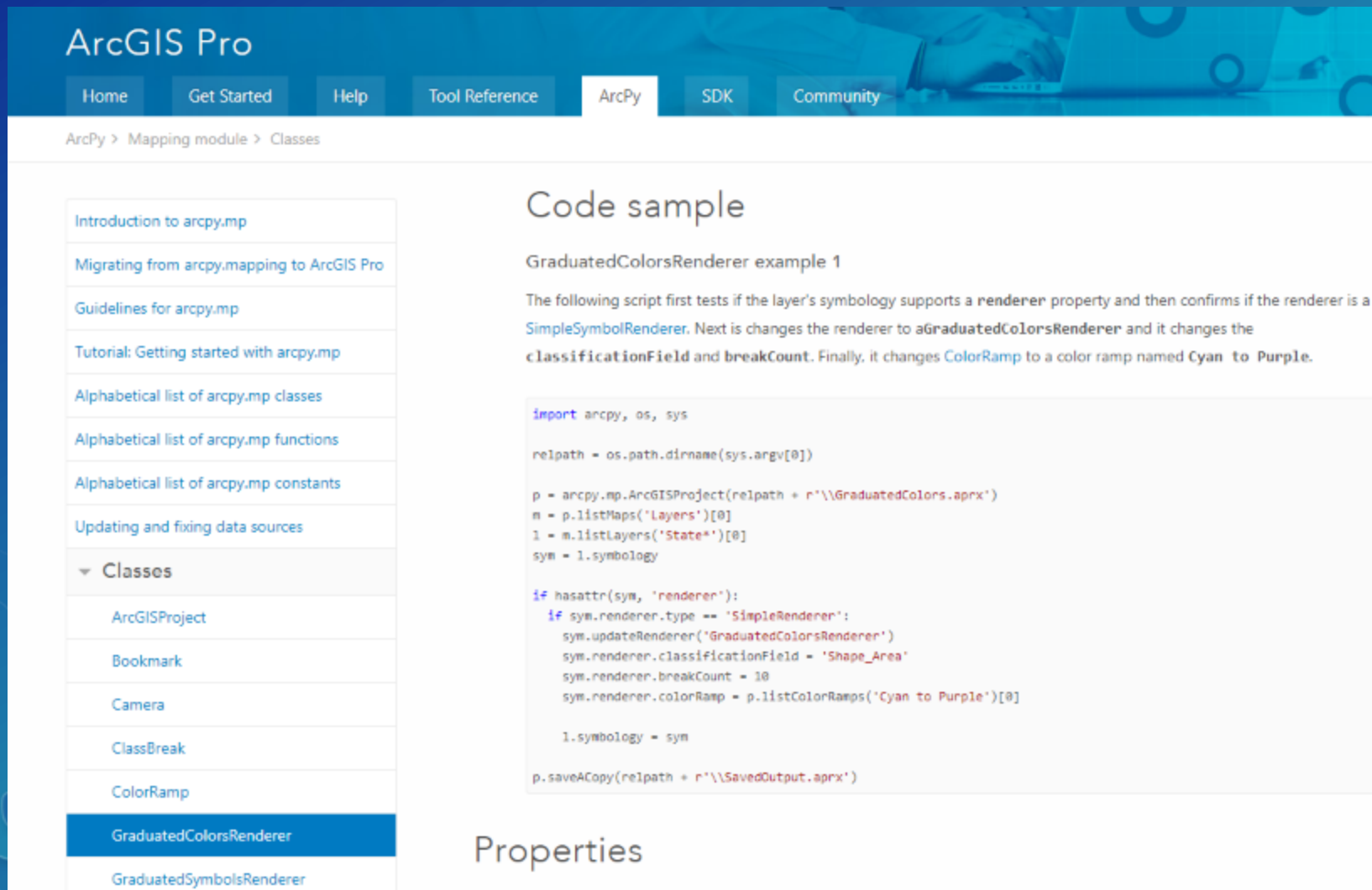
Complexity:
Beginner

Data Requirement:
Use your own data

Goal:
The goal of this tutorial is to introduce you to the basics of **arcpy.mp**. You will use Python to connect to a project, reference project items, and export a layout to PDF.

Graduated Colors Renderer Code Sample

<http://pro.arcgis.com/en/pro-app/arcpy/mapping/graduatedcolorsrenderer-class.htm>



The screenshot shows the ArcGIS Pro documentation interface. At the top is a navigation bar with links: Home, Get Started, Help, Tool Reference, ArcPy, SDK, and Community. Below this is a breadcrumb trail: ArcPy > Mapping module > Classes. On the left is a sidebar menu with various topics, including 'Classes' which is expanded to show a list of classes: ArcGISProject, Bookmark, Camera, ClassBreak, ColorRamp, GraduatedColorsRenderer (highlighted in blue), and GraduatedSymbolsRenderer. The main content area is titled 'Code sample' and contains a section for 'GraduatedColorsRenderer example 1'. It includes a descriptive paragraph and a Python code snippet. Below the code is a section titled 'Properties'.

ArcGIS Pro

Home Get Started Help Tool Reference ArcPy SDK Community

ArcPy > Mapping module > Classes

Code sample

GraduatedColorsRenderer example 1

The following script first tests if the layer's symbology supports a `renderer` property and then confirms if the renderer is a `SimpleSymbolRenderer`. Next it changes the renderer to a `GraduatedColorsRenderer` and it changes the `classificationField` and `breakCount`. Finally, it changes `ColorRamp` to a color ramp named `Cyan to Purple`.

```
import arcpy, os, sys

relpath = os.path.dirname(sys.argv[0])

p = arcpy.mp.ArcGISProject(relpath + r'\\GraduatedColors.aprx')
m = p.listMaps('Layers')[0]
l = m.listLayers('State*')[0]
sym = l.symbology

if hasattr(sym, 'renderer'):
    if sym.renderer.type == 'SimpleRenderer':
        sym.updateRenderer('GraduatedColorsRenderer')
        sym.renderer.classificationField = 'Shape_Area'
        sym.renderer.breakCount = 10
        sym.renderer.colorRamp = p.listColorRamps('Cyan to Purple')[0]

    l.symbology = sym

p.saveACopy(relpath + r'\\SavedOutput.aprx')
```

Properties

Automation Demonstration

- **ArcPy**
 - Create simple script to set def queries
 - Save as script and include in Project Toolbox
 - Modify script to accept an argument (input parameter)
 - NBRHD = arcpy.GetParameterAsText(0)
 - Add Script Tool to Analysis Gallery
- **Tasks**
 - Create a Task that includes Script
 - Add step to Zoom To Layer
- **Package Project in Project Template for distribution**

Summary

- **Thank you for attending!**
- **Many Technical Workshops and Demo Theater Presentations on ArcGIS Pro**



questions?
& answers





esri

THE
SCIENCE
OF
WHERE