



ArcGIS Pro: Migrating from ArcMap

Tosia Shall

Moderator – David Watkins

2021 ESRI FEDERAL GIS CONFERENCE

Topics Covered

- ArcMap Continued Support
- Planning for Migration
- Take Advantage of Efficiencies
- Getting Started with Pro
- Additional Valuable Functionality
- Can my System Run ArcGIS Pro?
- Resources

ArcMap Continued Support

ArcMap Continued Support

- ArcGIS 10.8.1 is the current release of ArcMap and will be supported until March 1, 2026 as established in the [ArcGIS Desktop Product Life Cycle](#)
- We do not have plans to release an ArcMap 10.9
- Does this mean that ArcMap is going away?
 - No. Even after support for ArcMap ends in 2026, customers can continue to use ArcMap as long as their license is valid
- Software/Applications in the Desktop Product Life Cycle:
 - ArcMap
 - ArcCatalog
 - ArcMap Extensions (including ArcScene and ArcGlobe, which are part of 3d Analyst)
 - ArcReader
 - The Desktop ArcObjects SDK and ArcGIS Engine
- Where can you learn more? Visit the [ArcMap Continued Support](#) page on our support site

Planning for Migration

Planning

Workforce
Development

Review of
workflows

Prioritization and
migration of
workflows

Migration of
add-ins

Migration of
scripts and
models

Planning for Migration

Review and Migration of Workflows

- Review of Workflows
 - Use this as an opportunity to review your current workflows and products
 - Are they still relevant?
 - Do they need to be updated or changed? Is there a better way?
- Migration of Workflows
 - Identify which workflows and products are more complex and will take longer to migrate, and which of those are most critical – use this to create a prioritized list
 - Workflows and products that are more straightforward may be migrated afterward or in parallel



Planning for Migration

Migration of Scripts and Models

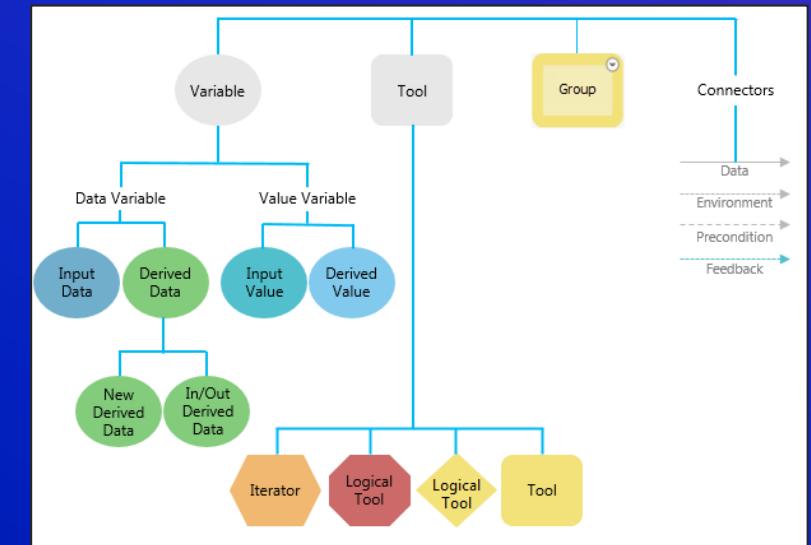
- Scripts
 - ArcGIS Pro uses Python 3 – [click here for more info](#)
 - arcpy.mapping module replaced with an arcpy.mp module
 - Use Python's 2to3 command line utility to help automate the update process
- Models created in Desktop
 - Once edited and saved in Pro, they cannot be used in other Desktop applications. Use the Save As tool to save to earlier toolbox versions
 - Calculate Field Tool does not support VB expressions in Pro, use Python or Arcade syntax.
 - [Click here](#) to learn more about migrating models to ArcGIS Pro

Overview of Python Migration

Python migration from 10.x to ArcGIS Pro

ArcGIS Pro 2.7 | [Other versions](#) ▾

How you use Python with ArcGIS Pro is different from other ArcGIS products, including ArcGIS Desktop, ArcGIS Server, and ArcGIS Engine.



Planning for Migration

Helpful Tools

- Use **Analyze Tools for Pro** to identify which Python scripts and custom geoprocessing tools and toolboxes have functionality that is not supported in Pro.
 - Identify geoprocessing tools and environments that are not compatible
 - Identify arcpy modules that have been replaced with newer versions
 - Find unsupported data formats, such as personal geodatabases
 - Identify the need for an upgrade to Python 3

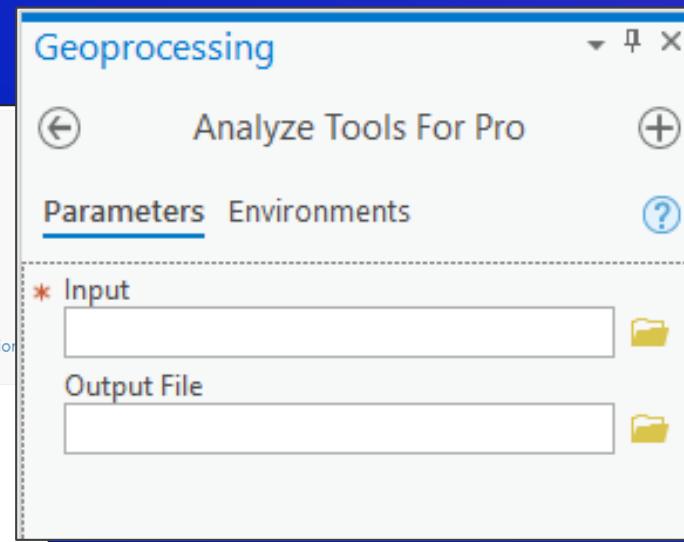
Analyze Tools For Pro (Data Management)

ArcGIS Pro 2.7 | [Other versions](#)

Summary

Analyzes Python scripts and custom geoprocessing tools and toolboxes for functionality that is not supported in ArcGIS Pro.

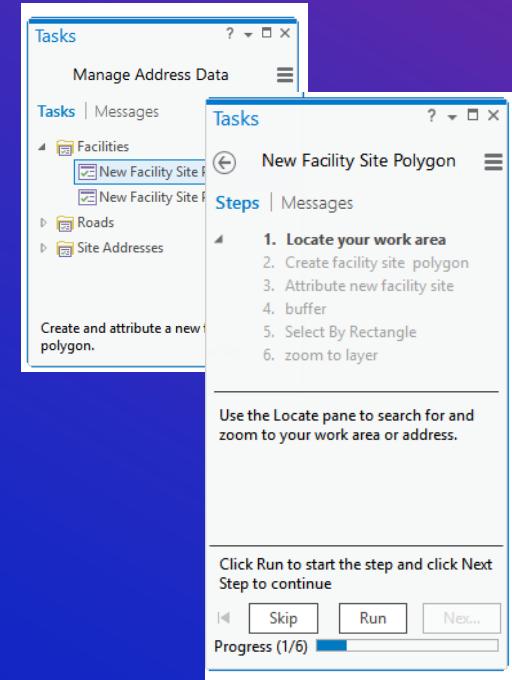
There are differences between ArcGIS Pro and ArcGIS 10.x that may mean changes to some custom tools and scripts so they run successfully in ArcGIS Pro. These changes include geoprocessing tools and environments that are not supported in ArcGIS Pro, the replacement of the `arcpy.mapping` module with the `arcpy.mp` module, unsupported data formats (such as a personal geodatabase), and an upgrade to Python 3 from Python 2.



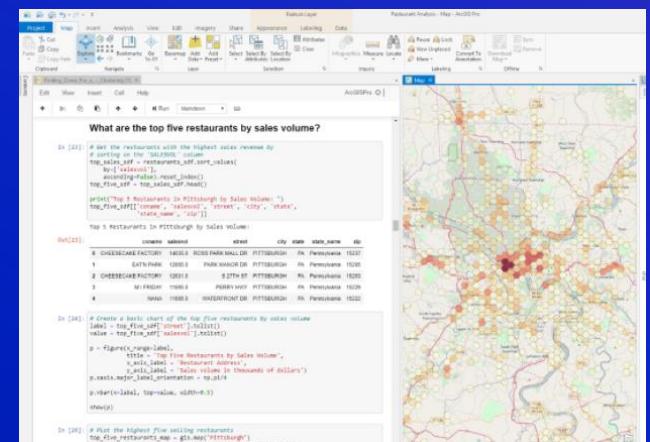
Planning for Migration

Other Options for Repeatable Workflows

- Tasks
 - A set of sequential steps that guide you through a repeatable workflow
 - Are interactive
 - Improve efficiency, quality
 - Export and share a task file, import to other projects
 - Combine Tasks with the configuration of Pro UI settings to streamline a workflow



- Notebooks
 - Create and share documents that contain live Python code, visualizations, and narrative text.
 - Built on top of Jupyter Notebook
 - Click [here](#) for more info on Notebooks in ArcGIS Pro



Planning for Migration

Migration of Add-Ins

- First, evaluate Pro to see if you'll need to migrate any customizations
 - Pro has been developed to incorporate many common workflows and tasks from our customers
- For any remaining functionality, use the ArcGIS Pro SDK for .NET

ArcGIS Pro SDK for Microsoft .NET

Extend ArcGIS Pro using the ArcGIS Pro SDK for Microsoft .NET. Develop add-ins and solution configurations to create a custom Pro UI and user experience for your organization. [Download](#) within Visual Studio or at [My Esri](#).

Released Version: 2.7 (December 2020) [Installation](#) | [What's New](#) | [API Reference](#) | [Community Samples](#) | [Documentation](#) | [FAQ](#)

Get started with tutorials



Build a map identification tool
Learn how to create an ArcGIS Pro add-in with a custom map identification tool.
Estimated time: 15 minutes



Style feature layers
Learn how to update feature layer symbology and assign new symbols using a renderer.
Estimated time: 20 minutes



Edit attribute data
Learn how to set feature attribute values with the Inspector class.
Estimated time: 20 minutes



Run a GP tool and a Python script
Learn how to run a geoprocessing tool and a python script within an add-in.
Estimated time: 20 minutes



Build a map layout
Learn how to create and build a map layout with different layout elements.
Estimated time: 15 minutes

[Start the lab](#)

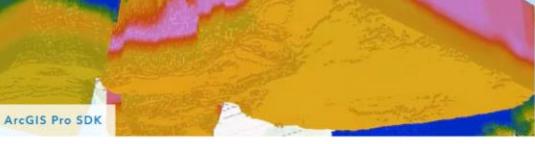
ArcGIS Pro 2.7 API Reference Guide

[Collapse All](#)

Introduction > ArcGIS Pro 2.7 API Reference Guide

ArcGIS Pro SDK for .NET

 ArcGIS Pro Version: 2.7.1



What's New in the ArcGIS Pro SDK 2.7

Developers | December 17, 2020 | Christopher Zent

ArcGIS Pro 2.7 is now available with many new capabilities in the ArcGIS Pro SDK for .NET.

Instructor-Led

Extending ArcGIS Pro with Add-Ins

[Register](#)

5 (202) 

[Click here for more info on Migrating Add-Ins](#)

Planning for Migration

Workforce Development Needs

Most Desktop users may not need to relearn GIS, but they will need to understand the new UI

Instructor-Led

Migrating from ArcMap to ArcGIS Pro

[Register](#)  (3272)   

About this Course

Meet the ArcGIS Desktop app that makes GIS work more fun.

With faster tools and integrated 2D and 3D capabilities, ArcGIS Pro streamlines your GIS projects. This course prepares experienced users to be productive right away. Learn essential ArcGIS Pro terminology and concepts and how to efficiently complete a variety of tasks related to mapping, editing, analyzing, and sharing geospatial data and resources.

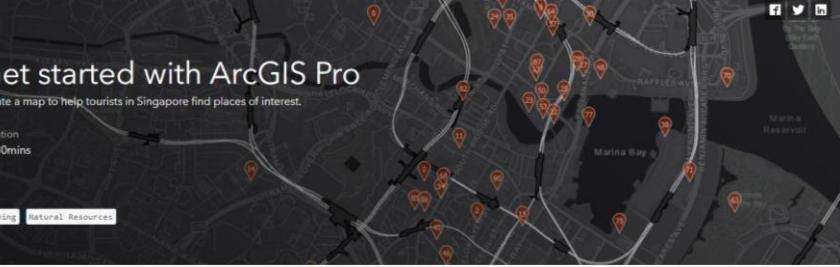
 
MIKE FLANAGAN
Training Services
Esri

[Download Table of Contents](#)

Get started with ArcGIS Pro

Create a map to help tourists in Singapore find places of interest.

Duration: 30mins



A geographic information system (GIS) is a way to display and analyze data using maps. In this lesson, you'll learn the basics of ArcGIS Pro, a desktop GIS application.

A Singapore tourism agency wants to create a brochure that tells visitors the closest rail station to popular destinations in the downtown area. The brochure will combine a map with textual information and be sold at kiosks around the city. You'll help the agency by mapping the tourist sites, analyzing how close they are to rail stations, and changing the map's appearance so that it is visually appealing.

[View final result](#)

Document

ArcGIS Pro Migration Guide

[Sign In](#)  (970)   

Duration: 14 Pages
Cost: Free



Take Advantage of Efficiencies

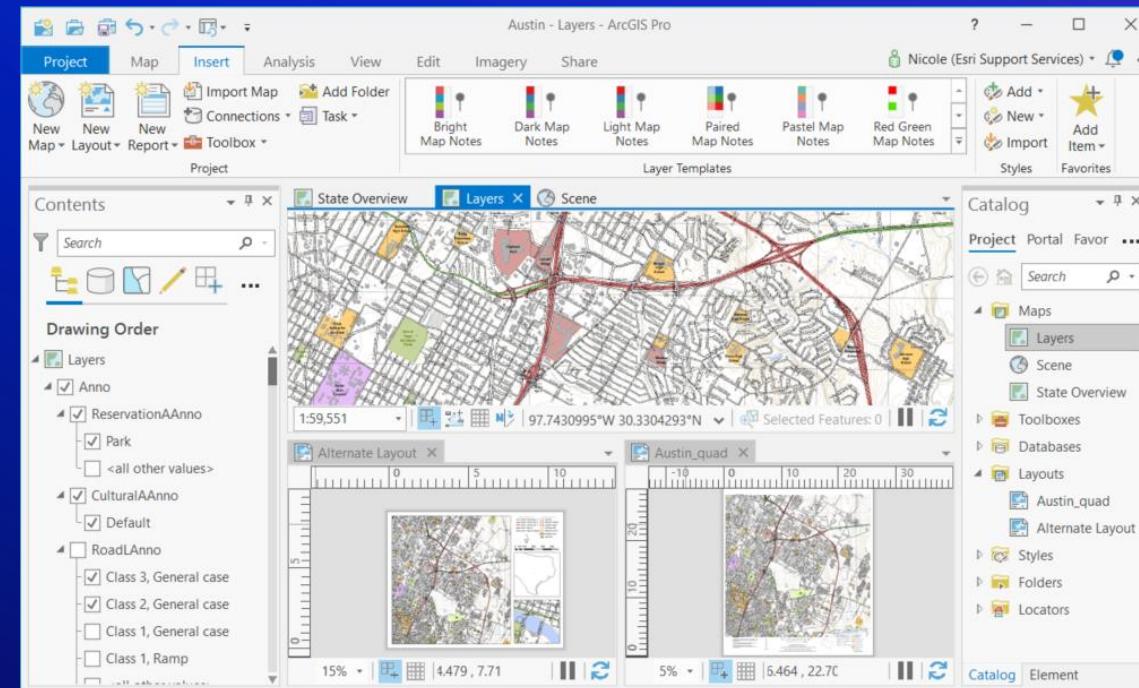
Take Advantage of Efficiencies

- Pro is a 64 bit, multi-threaded application

Use more memory for processing

Perform other tasks while a tool is running

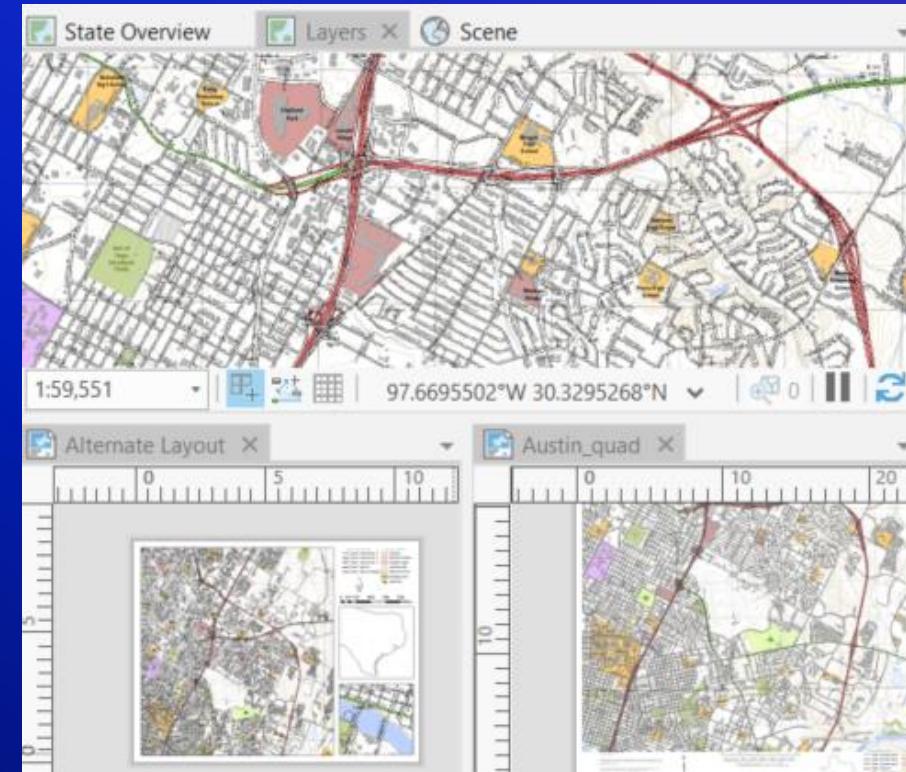
- Simplified user interface



Take Advantage of Efficiencies

- Multiple maps and layouts in one Pro project
 - Reduce the number of .mxds by combining maps and layouts by topic, geography, or purpose

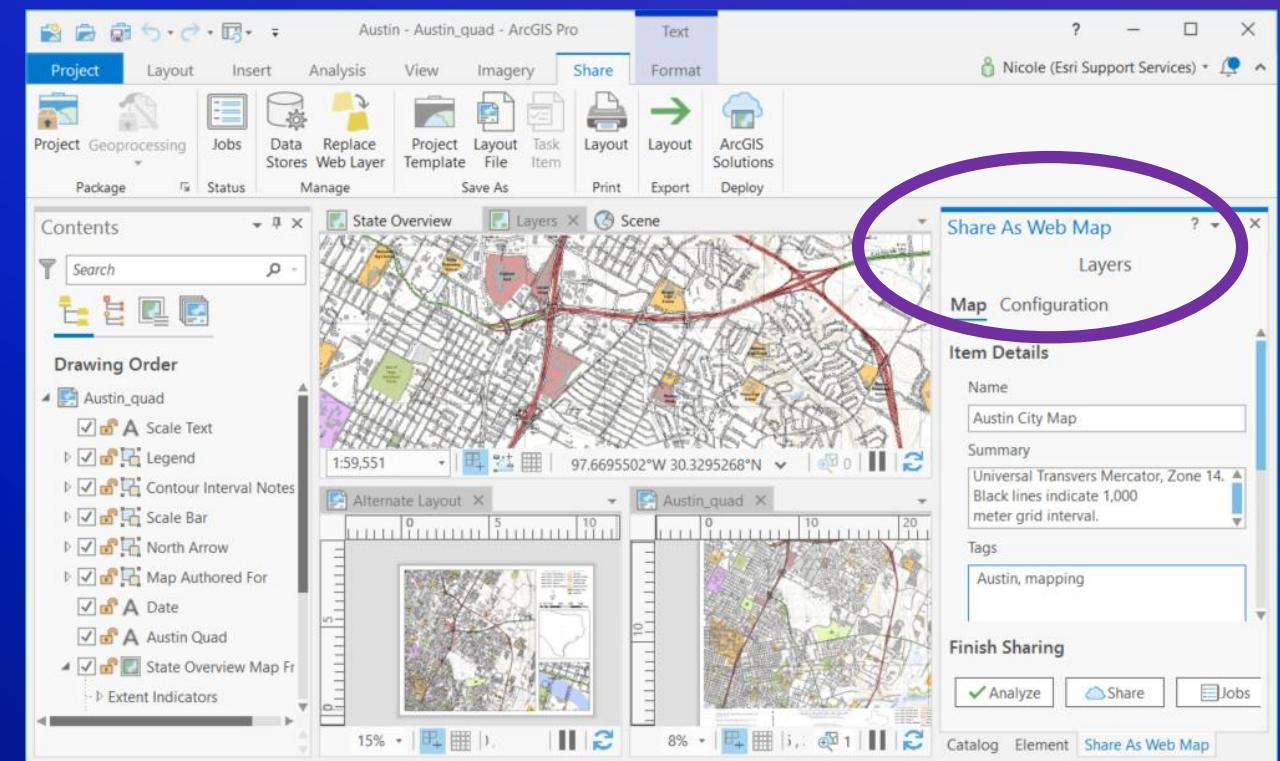
Multiple Map Tabs



Multiple Layouts

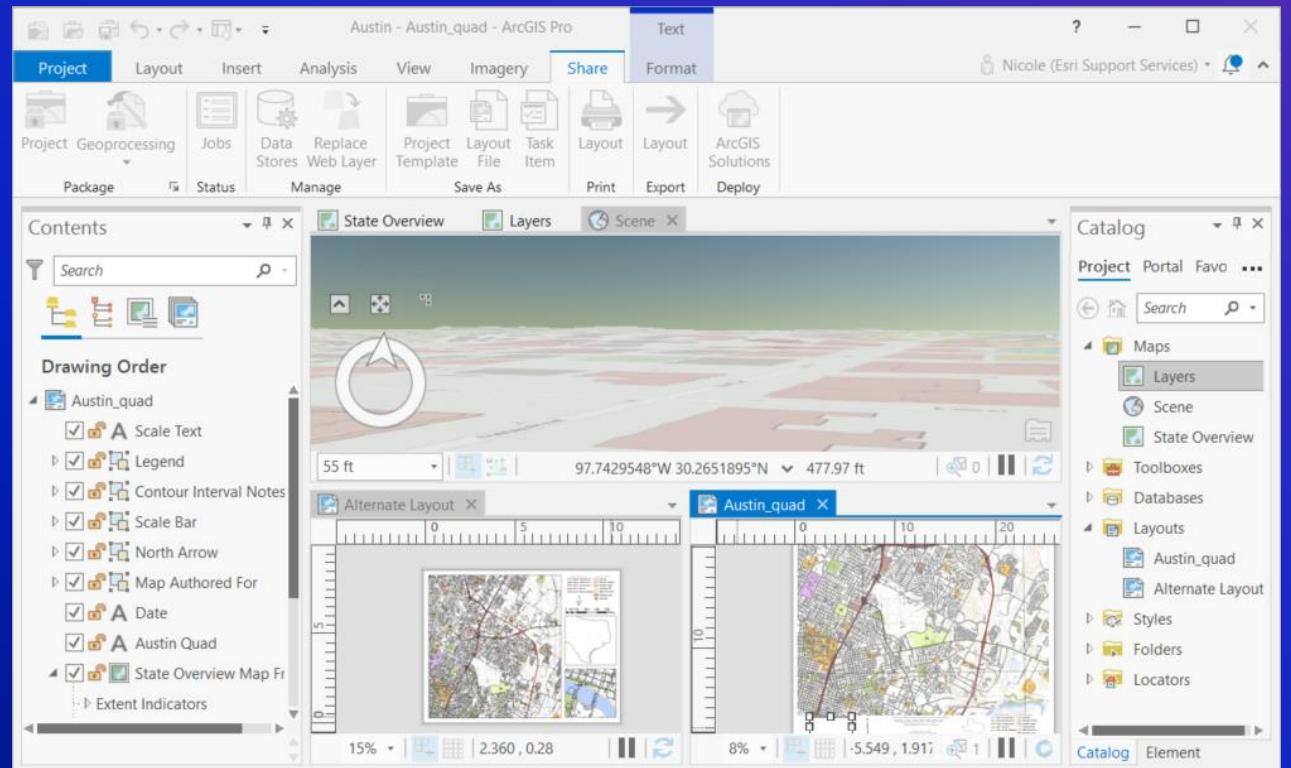
Take Advantage of Efficiencies

- Tightly Integrated with the ArcGIS platform
 - Easier to publish to ArcGIS Online or ArcGIS Enterprise portal
 - Easier to access content in your organization or portal



Take Advantage of Efficiencies

- Combined 2D/3D experience
 - No need to switch applications



Getting Started with ArcGIS Pro

What will I see when I start ArcGIS Pro?

Open a recent project



ArcGIS® Pro

Open

Recent Projects

- MyProject1 C:\Users\tosil541\Documents\ArcGIS\Project...
- GraphWorkshop C:\Users\tosil541\Documents\ArcGIS\Project...
- Bank_Movement_Analysis C:\Users\tosil541\Documents\ArcGIS\Package...
- GPS_Movement_Analysis C:\Users\tosil541\Documents\ArcGIS\Package...

Start a new project

New

Blank Templates



Start without a template
(you can save it later)

Recent Templates

Your recent templates will appear here.

Tosia
Esri National Government
<https://www.arcgis.com/>
[Sign out](#)

Resources



Coming from ArcMap?

Getting started for ArcMap users
Import an ArcMap document
Migration Guide

Discovery Paths

Learn the basics
Begin with the essentials.

Mapping and visualization
Create compelling data visualizations and beautiful maps.

Analysis and modeling
Use geoprocessing tools, build models, and explore geostatistical analysis and machine learning.

3D perspective
Explore, analyze, and symbolize your data in 3D.

Open other projects



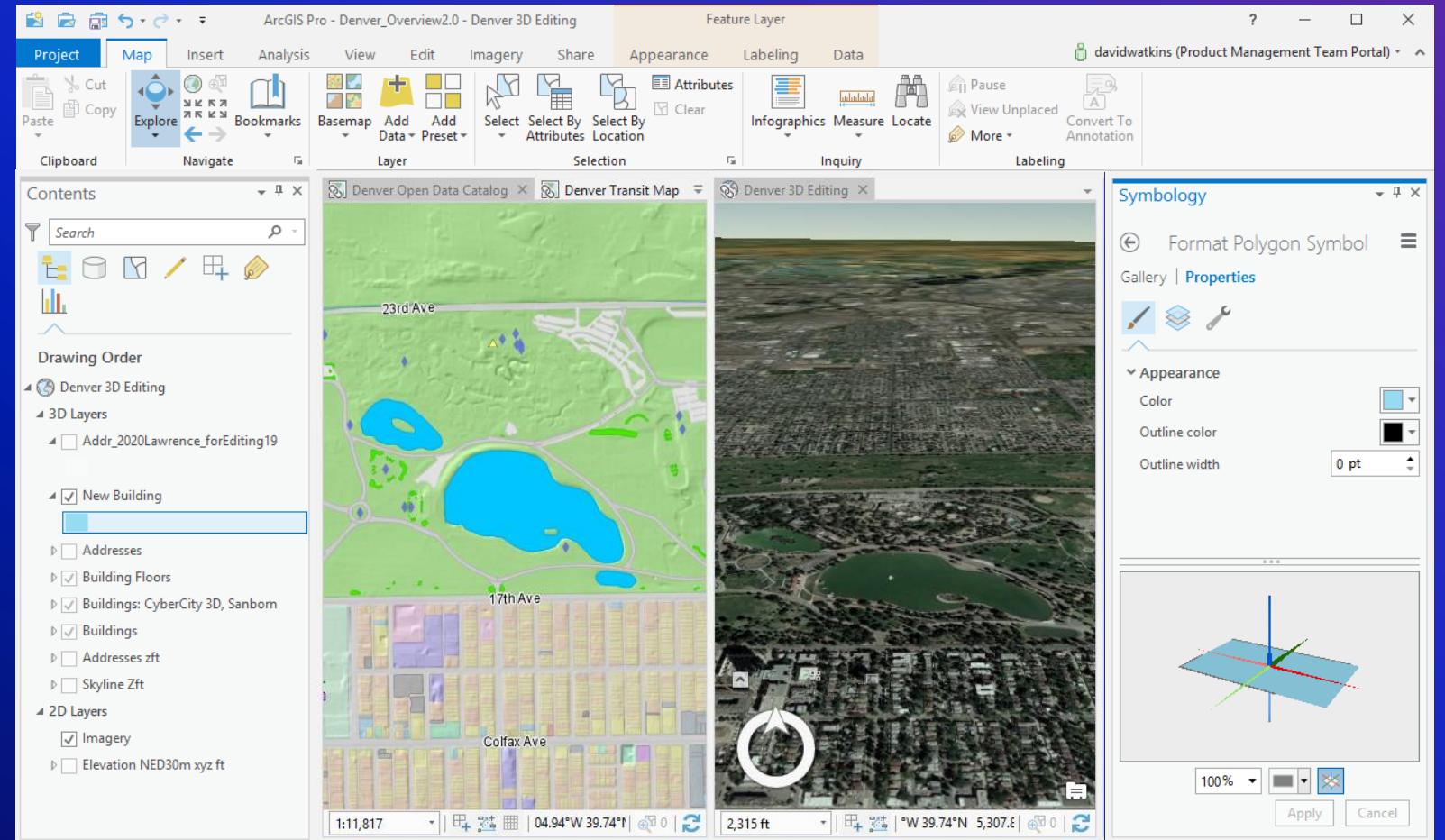
Open another project

Settings

How my instance of ArcGIS Pro is licensed

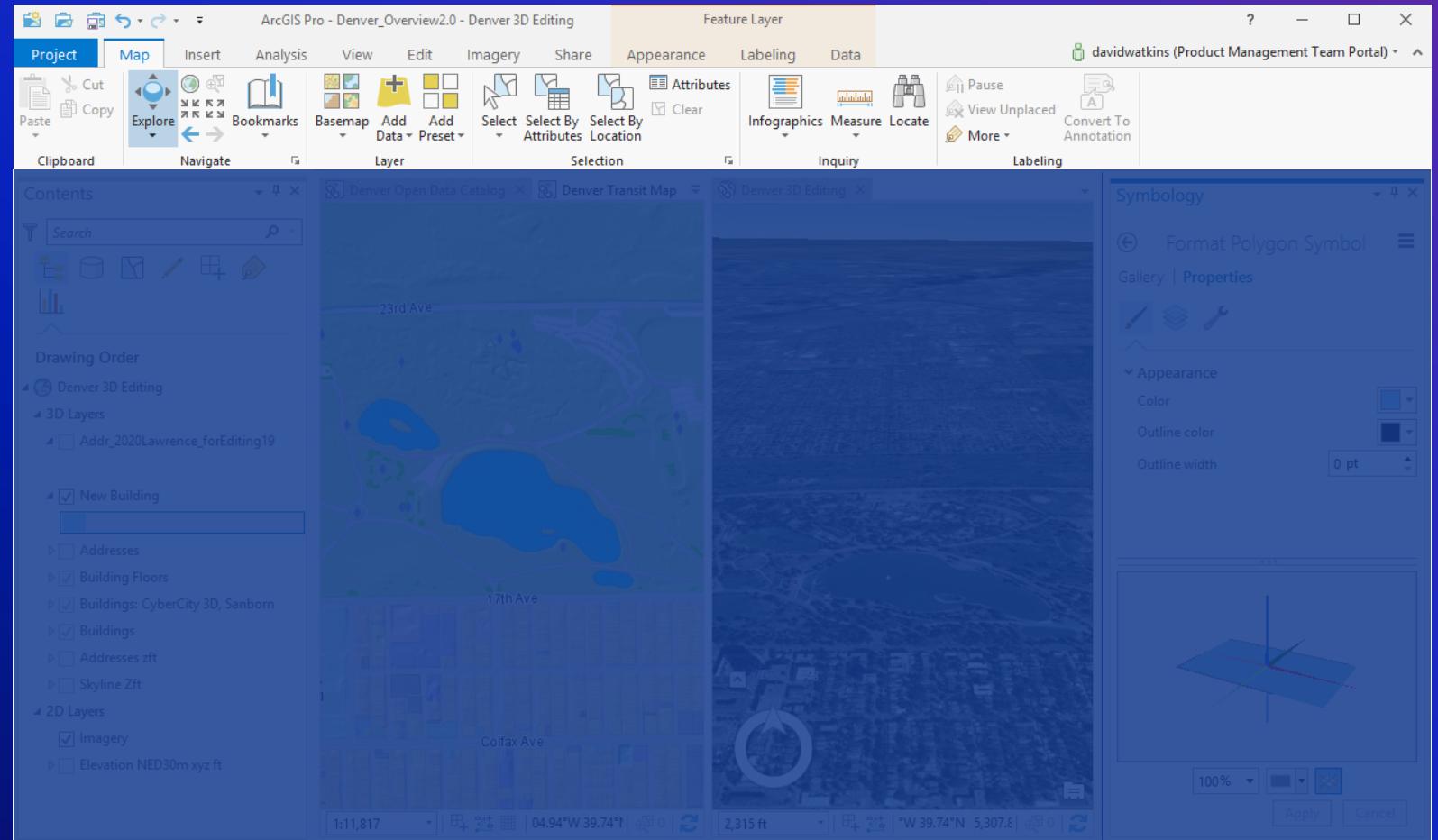
For those coming from ArcMap

The User Interface is new



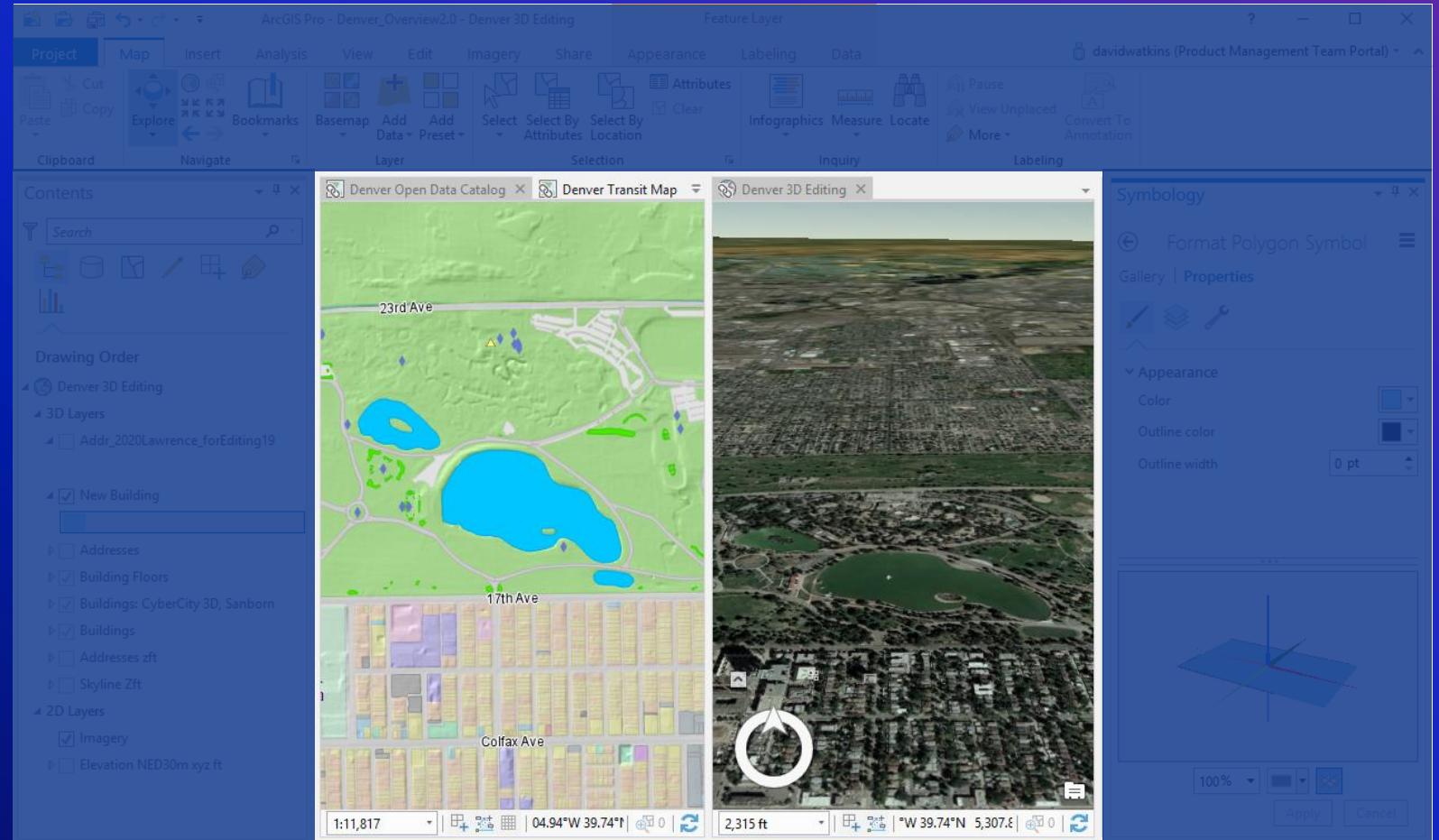
The User Interface is new

- Contextual ribbon



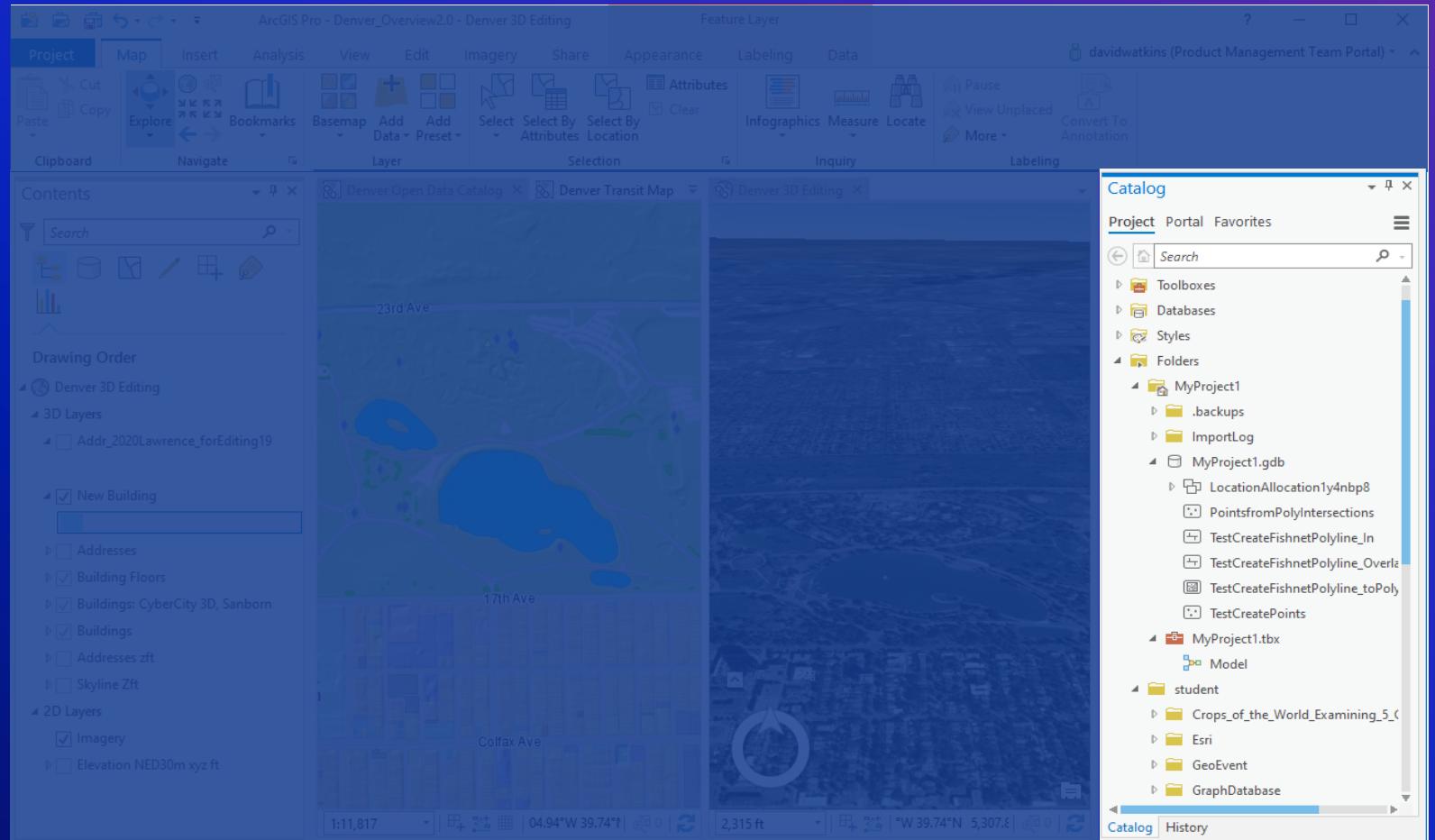
The User Interface is new

- Views



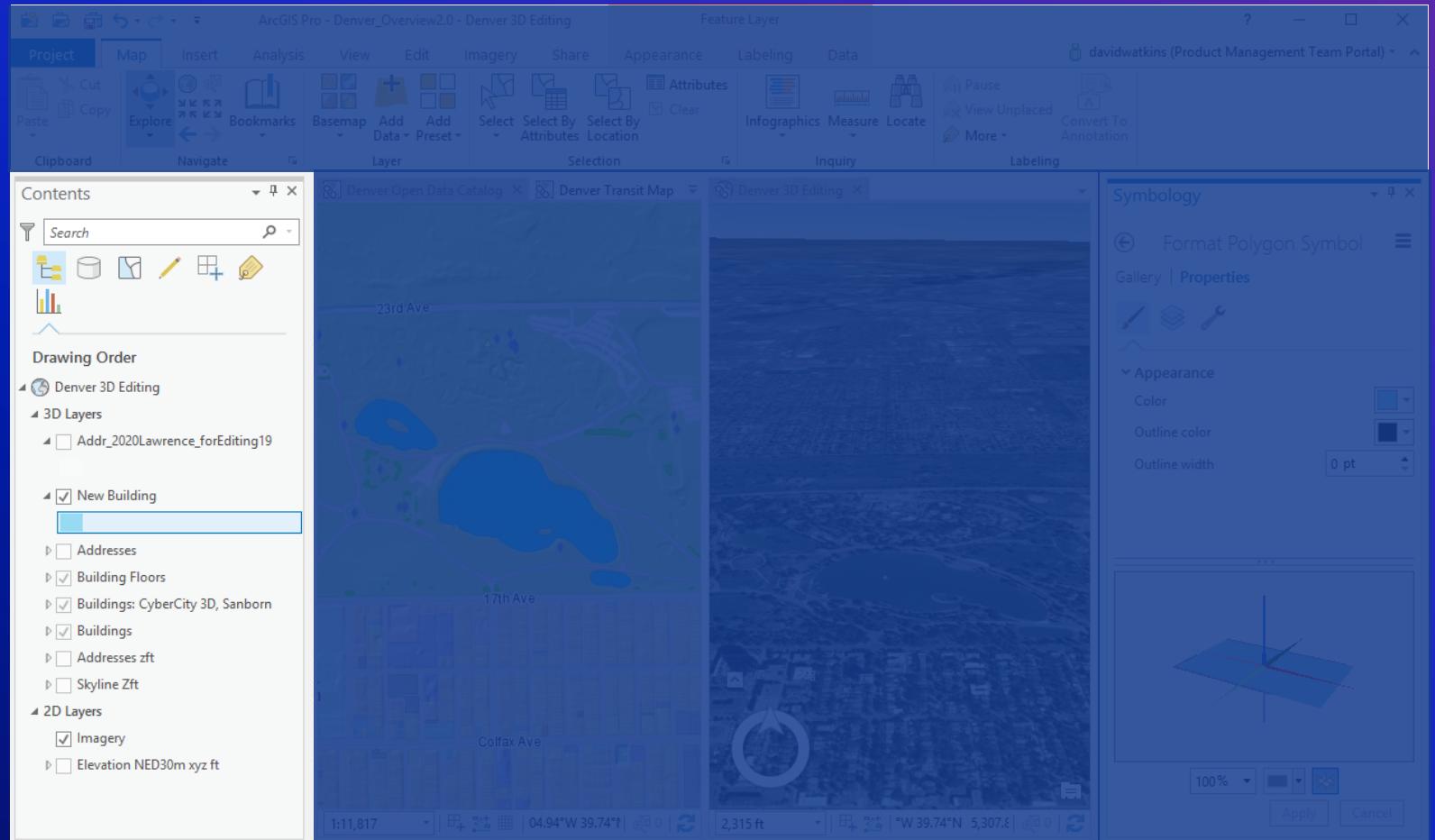
The User Interface is new

- **Panes**



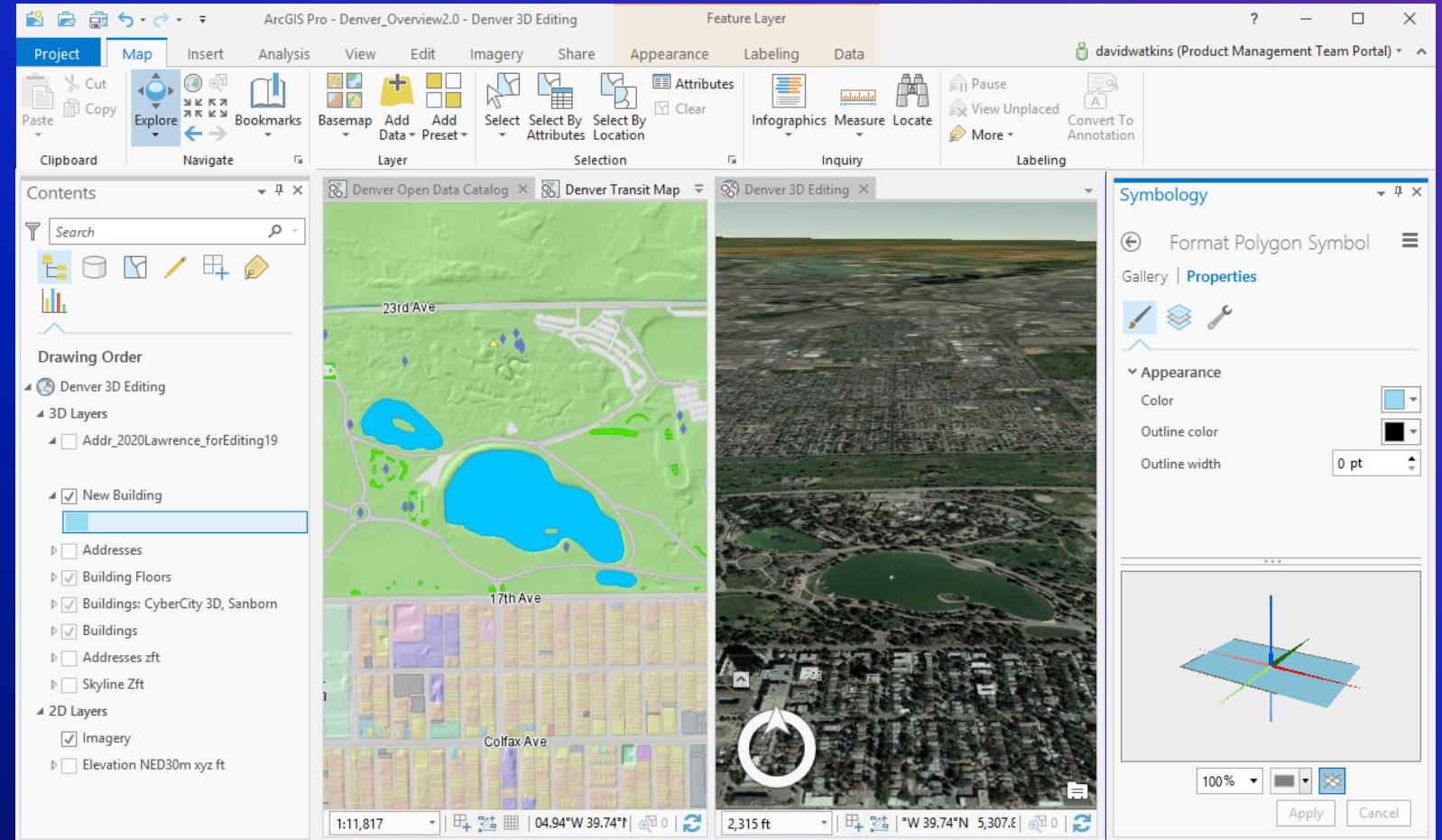
The User Interface is new

- **Contents**



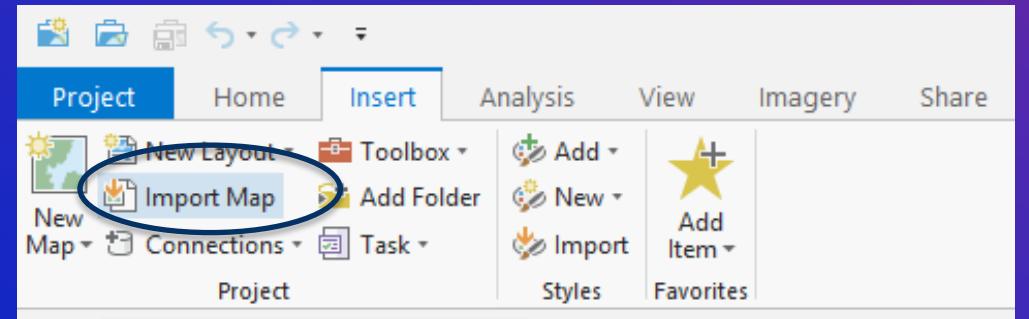
The User interface is new, but concepts are the same

- Contextual ribbon
- Views
- Panes
- Contents



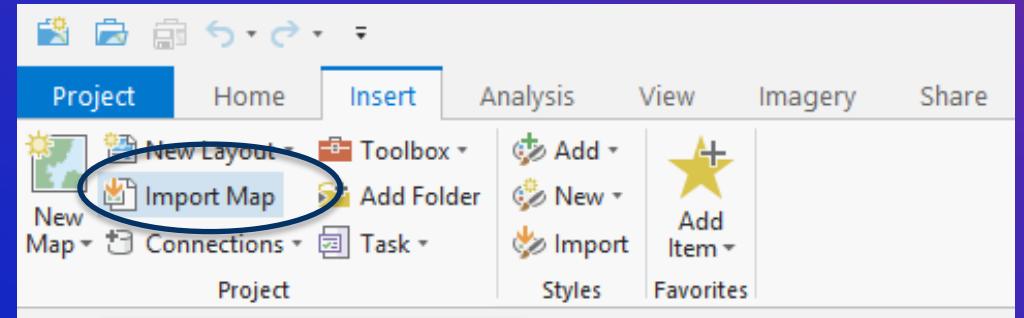
Import existing maps, scenes, and globes

- What will import?
 - .mxd, .sxd, .3dd files
 - Maps, layouts, symbology, scenes, and models

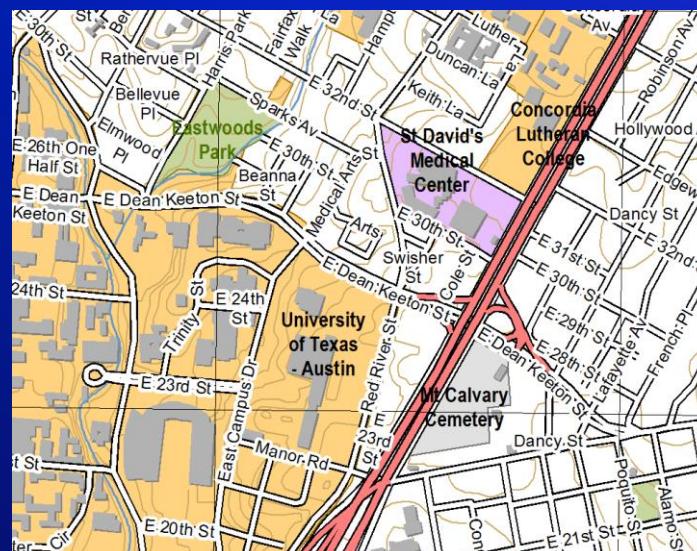


Import existing maps, scenes, and globes

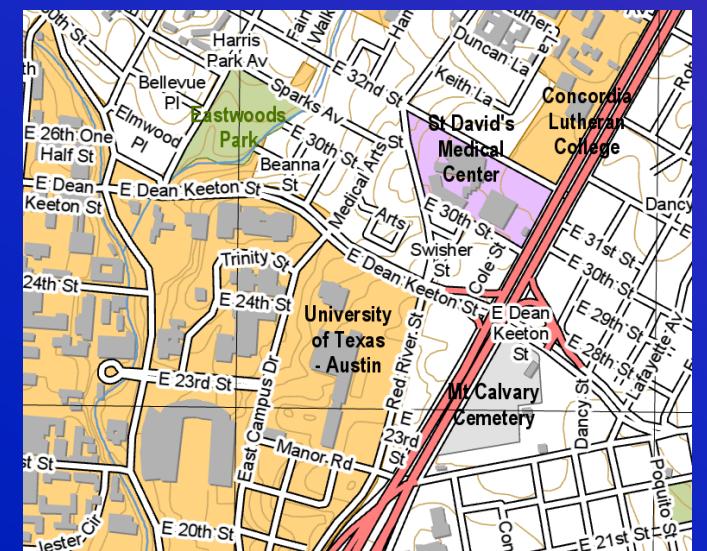
- What will import?
 - .mxd, .sxd, .3dd files
 - Maps, layouts, symbology, scenes, and models
- Results should look the same



ArcMap

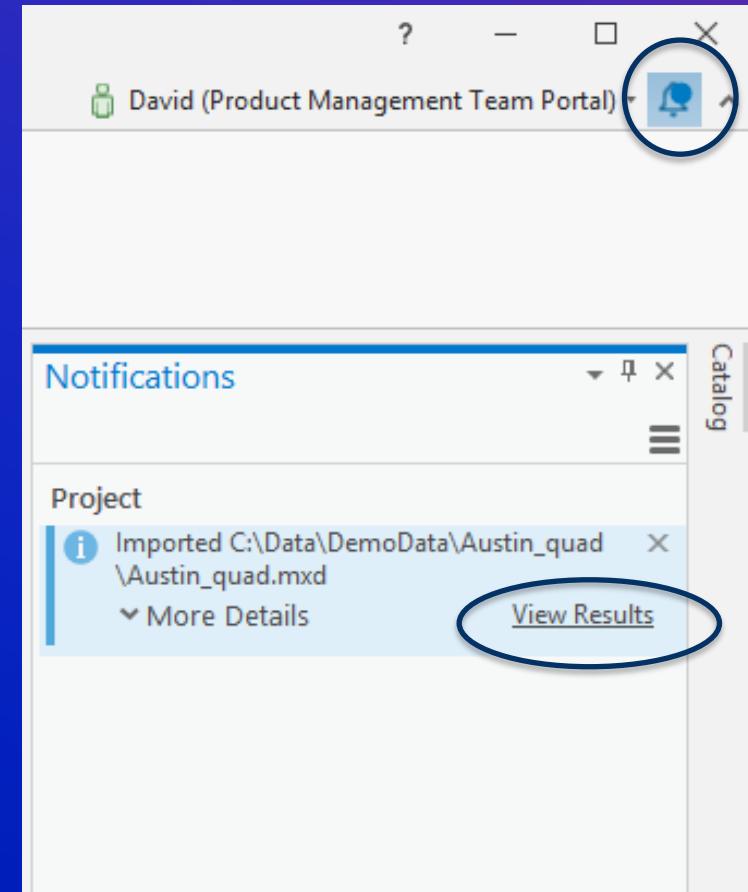


ArcGIS Pro



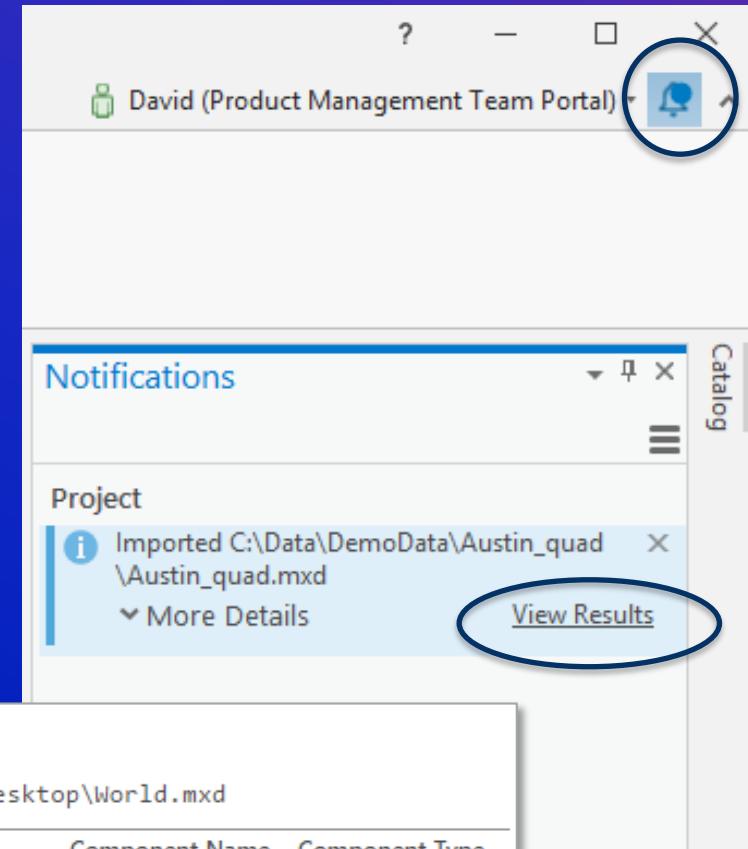
What if something doesn't look the same?

- Occasionally, things may differ slightly
 - Example: OLE objects are not supported
 - Label placement has been improved
 - Anti-aliasing used for text and line work
- Check the notifications



What if something doesn't look the same?

- Occasionally, things may differ slightly
 - Example: OLE objects are not supported
 - Label placement has been improved
 - Anti-aliasing used for text and line work
- Check the notifications
- Visual differences in imported map documents



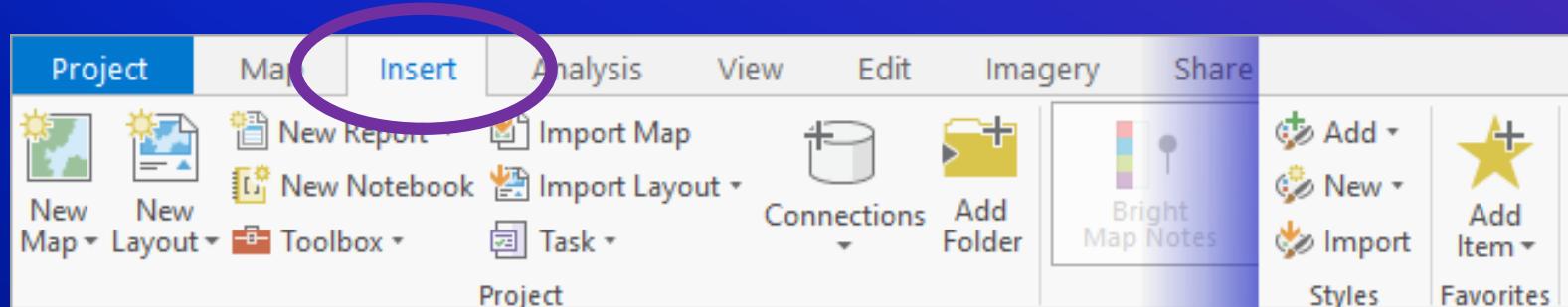
Import results for World.mxd

The following messages were produced when this map or scene was imported: C:\Users\davidw\Desktop\World.mxd

Message Name	Type	Severity	Code	Description	Component Name	Component Type
	Warning	Medium	20039	OLE objects are not supported and were dropped from the layout.	World	Layout

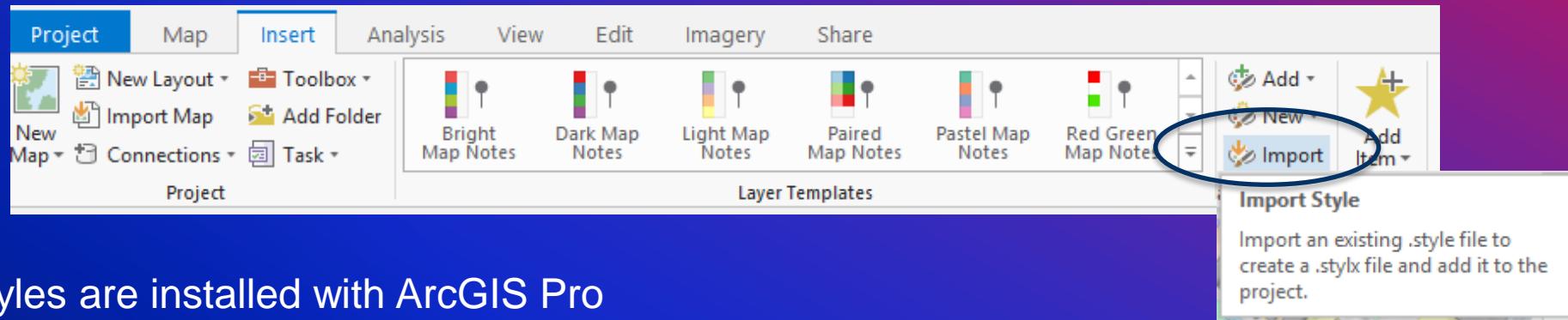
Create connections

- Use the Insert Tab to add connections to:
 - Folders
 - Databases
 - Servers
 - Locators
 - Toolboxes
 - Styles



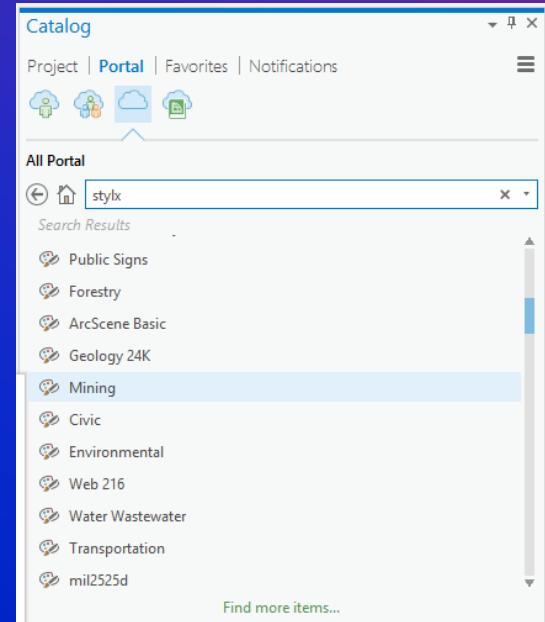
Demonstration: Import MXD

Styles in ArcGIS Pro



- Not all styles are installed with ArcGIS Pro
- Styles from ArcMap and custom styles can be imported
- New style format (.stylx)

- Add styles to your project from ArcGIS Online
- Can share organization styles using Portal



Styles Gallery in ArcGIS Online

Group: Gallery for Esri Styles

Gallery for Esri Styles

Search gallery

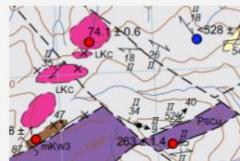
Item Type

Maps
Layers
Scenes
Apps
Tools
Files
Notebooks

Location

Date modified

Tags



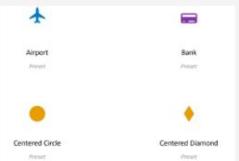
Geological Survey of Canada ...
A style of cartographic symbols to depict bedrock, surficial, and/or marine geological features.



ArcGIS Pro 2.7 Symbols
This PDF document contains all symbol and style items included in ArcGIS Pro 2.7.



ArcGIS 2D
This PDF document contains symbols and style items included in the ArcGIS 2D style.



Icon Points
This PDF document contains symbols included in the Icon Points style.

Conservation_en.stlyx
 Crime_Analysis_en.stlyx

1/10/2021 11:49 PM
1/10/2021 11:44 PM

STYX File
STYX File

Public Safety Pro Style



This style contains a set of 2D symbols which are designed for use in public safety applications, such as damage assessment, debris reporting, preparedness, and response activities.

Desktop Style by [styles_esri](#)

Created: Jan 22, 2019 Updated: Aug 19, 2020 Number of Downloads: 4,094

[Download](#)

Description

Esri has developed a modern set of cartographic symbols for emergency management, fire service, and law enforcement agencies. They relate to damage assessment, debris reporting, preparedness, response activities, etc. These symbols are designed to be used in ArcGIS Pro.

This style includes point symbols, line symbols, polygon symbols, colors, and color schemes.

Details

Size: 2 MB

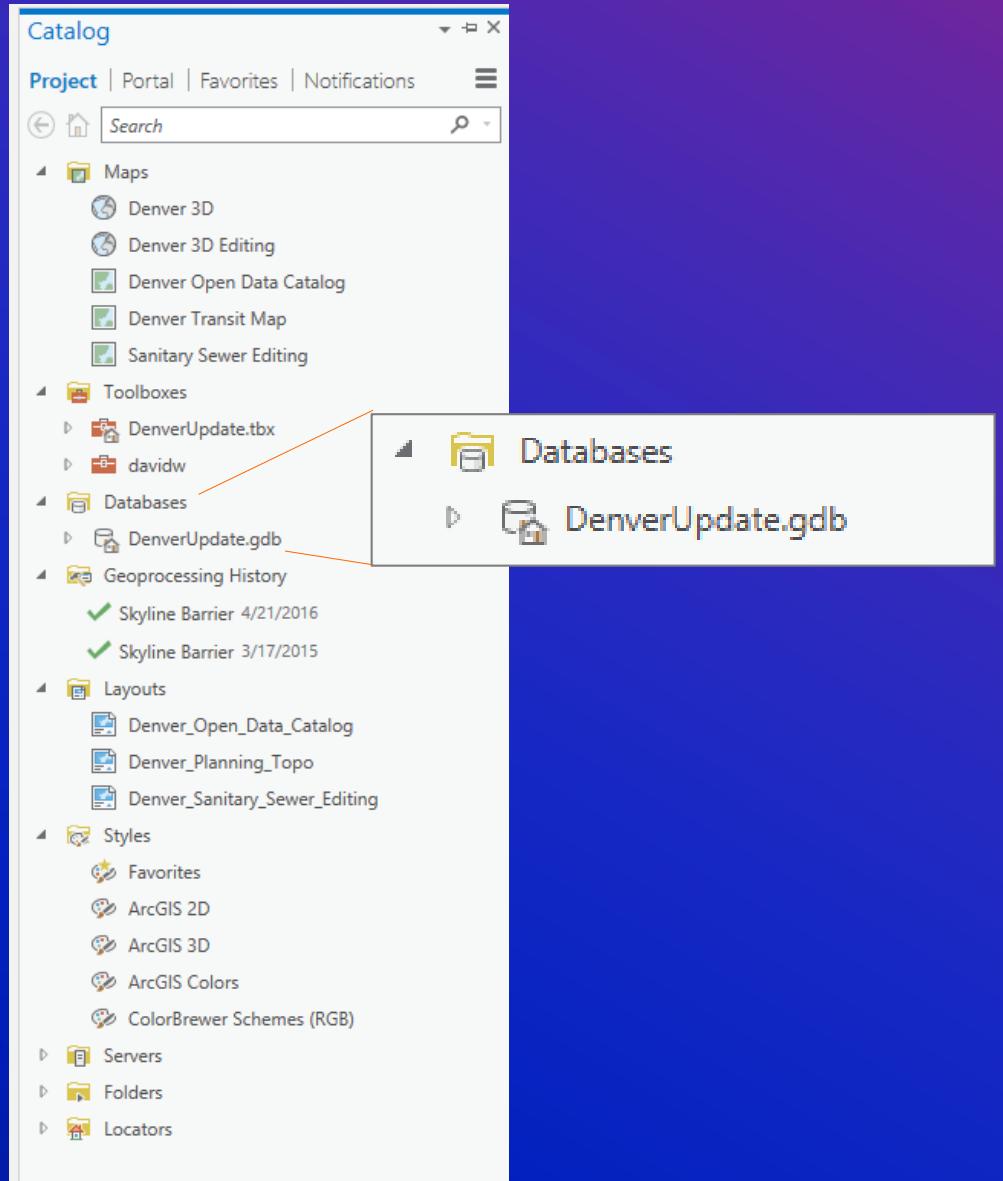


Catalog Pane

- Every project has its own **Default Geodatabase**
- Multiple maps and layouts
- Database, folder, server connections
- Tools and toolboxes
- Project styles

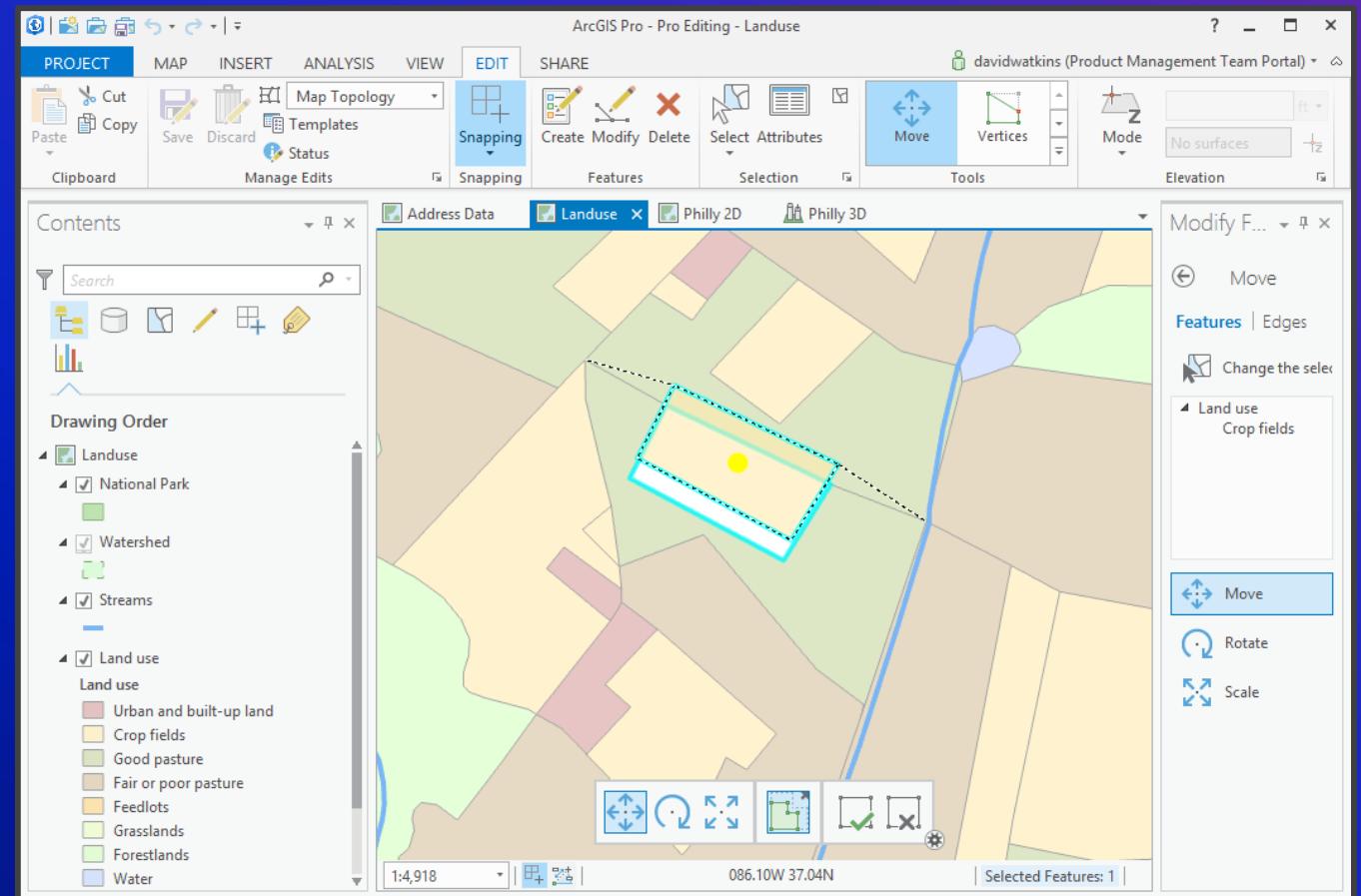
All can be easily packaged and shared

- Project packages
- Project templates



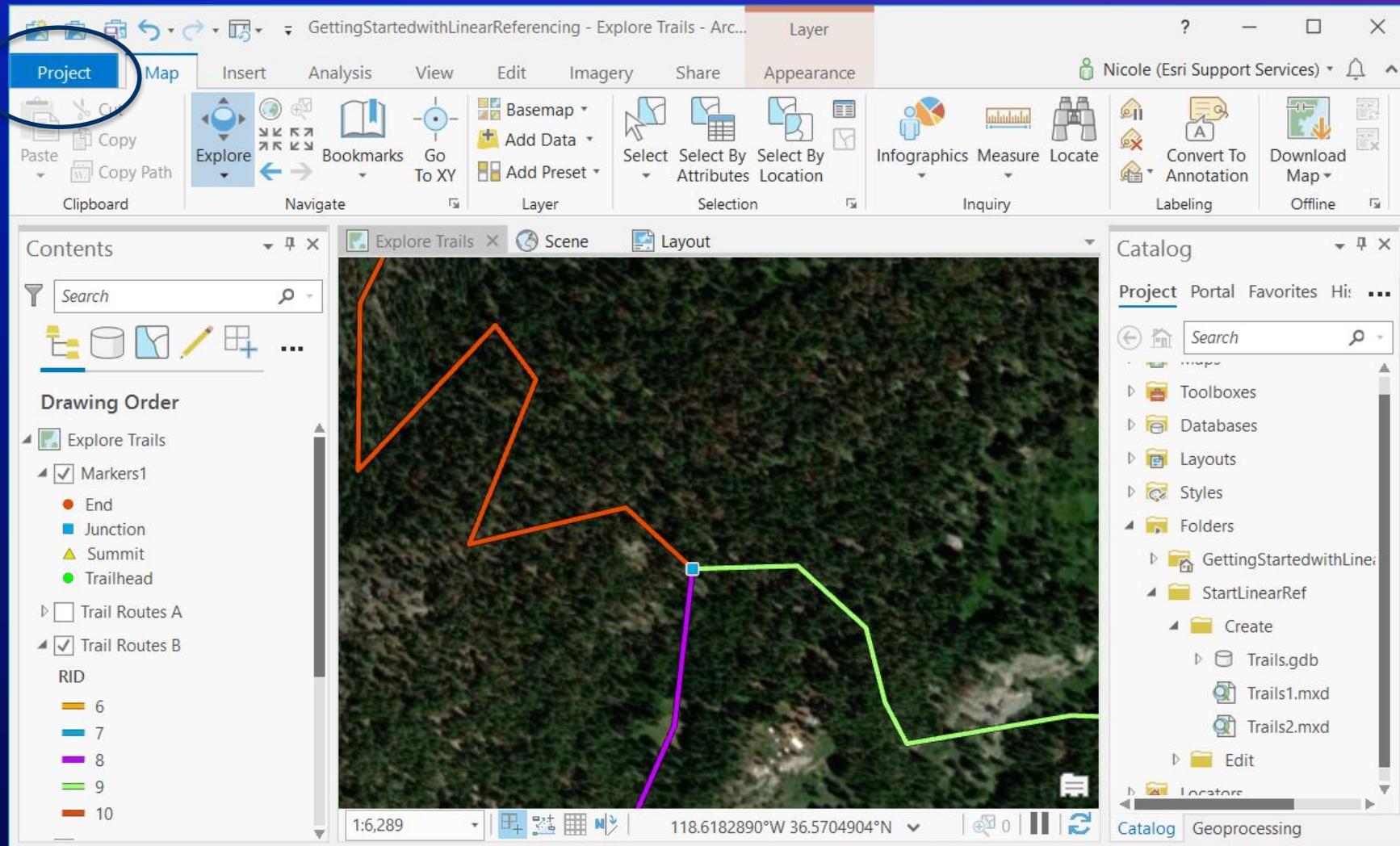
Editing in ArcGIS Pro

- No need to start and stop editing
- Create and modify features
- Edit versioned data
- Edit map and geodatabase topology
- Group templates

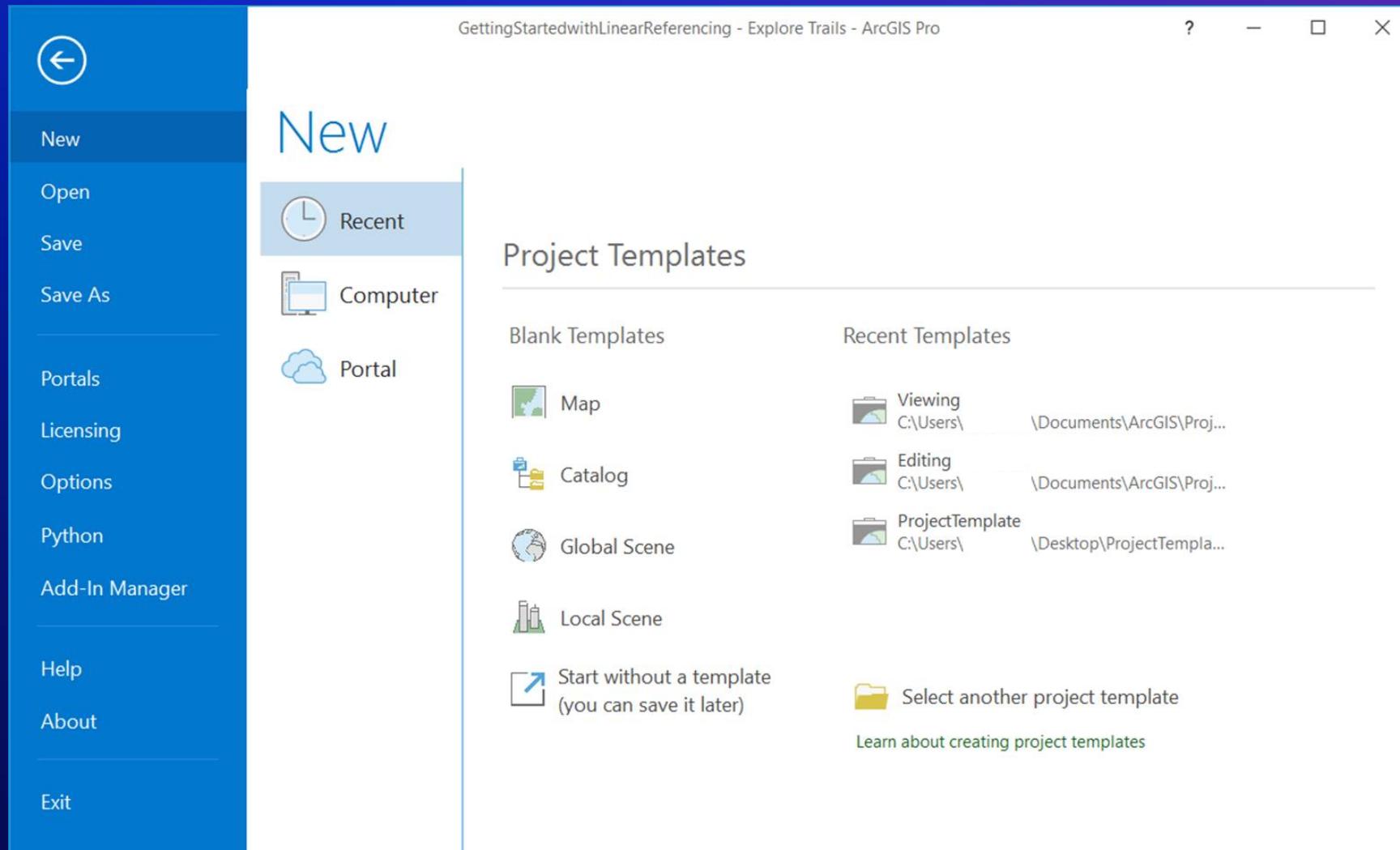


Setting Properties

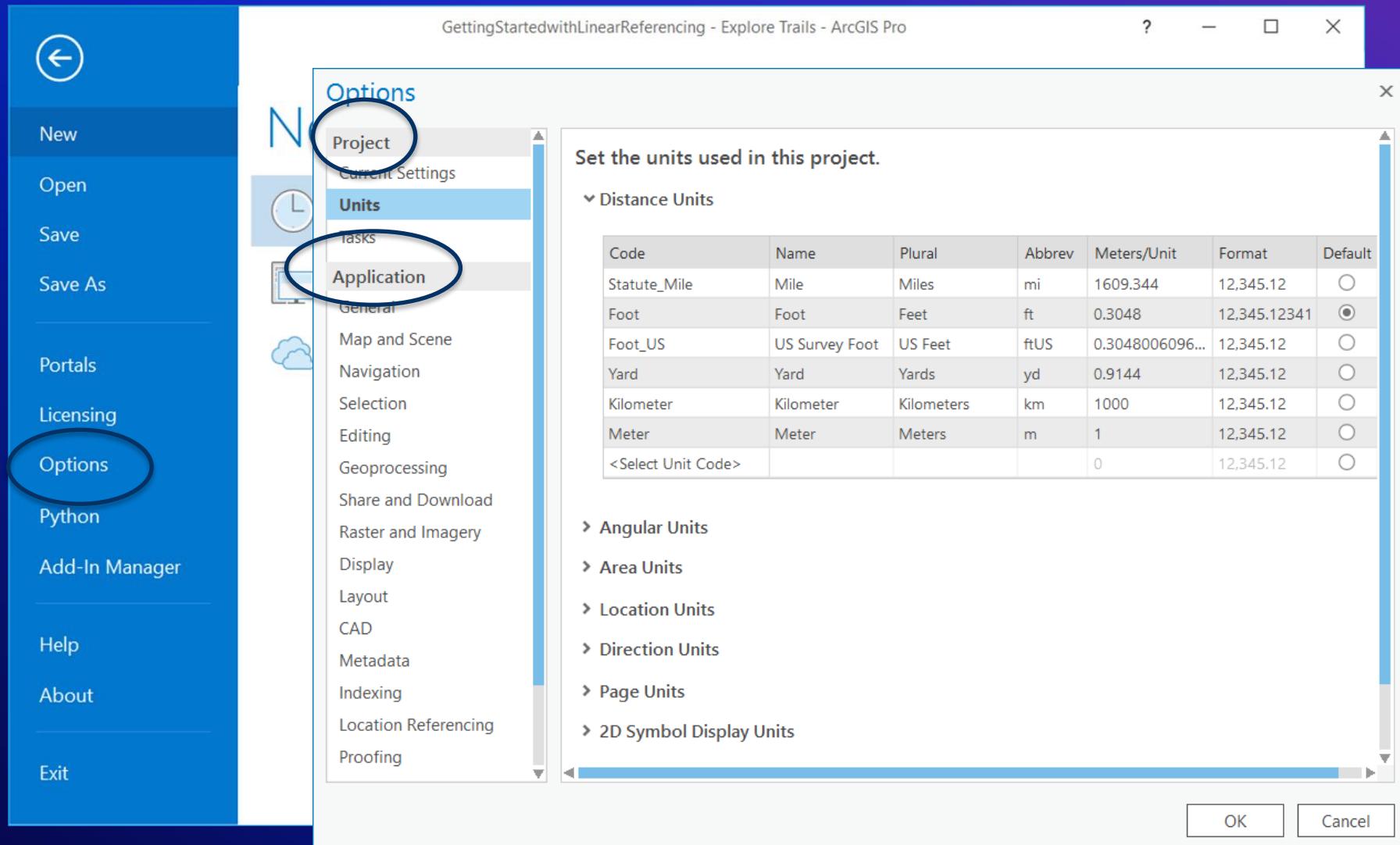
Setting Project and Application Properties



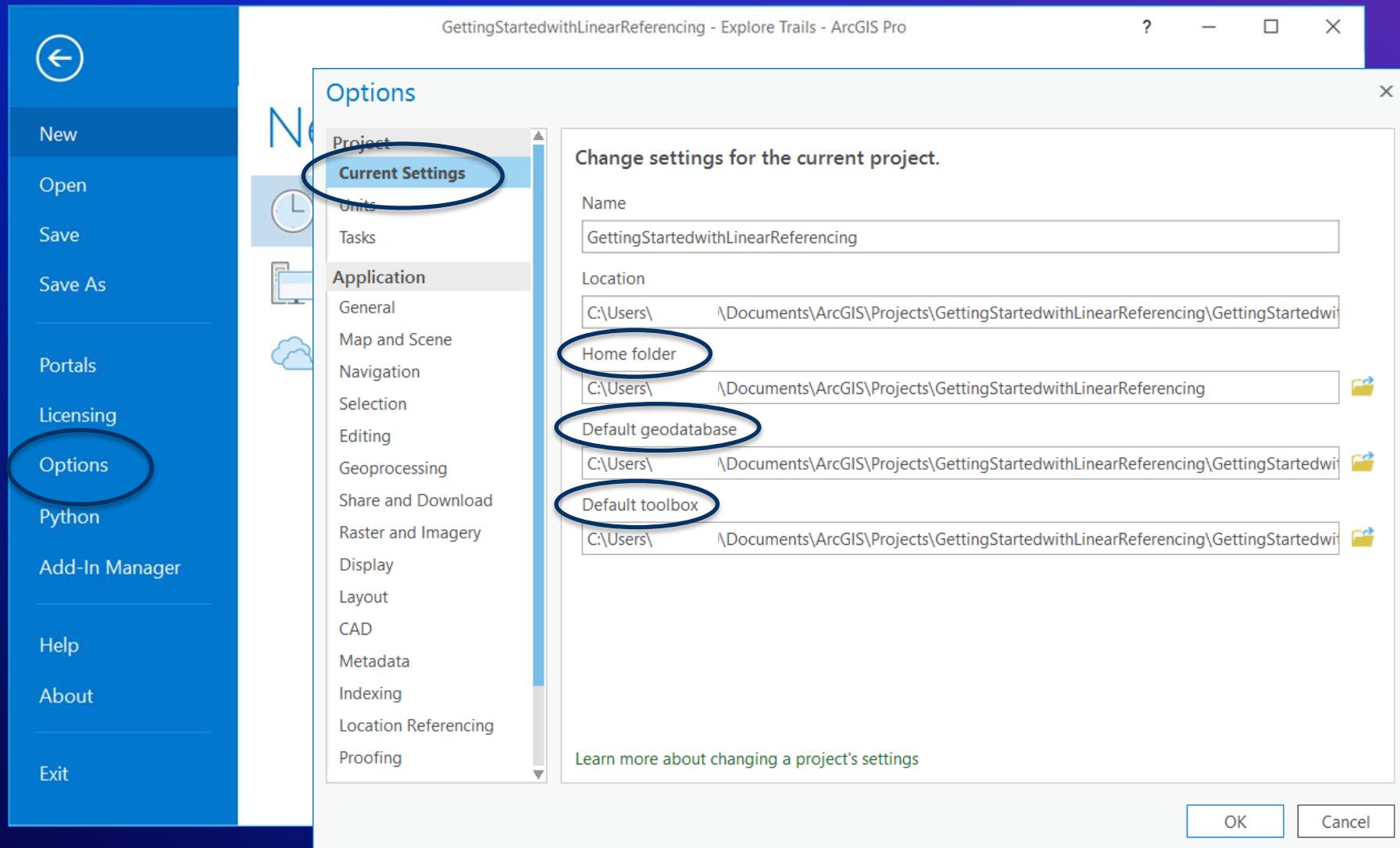
Setting Project and Application Properties



Setting Project and Application Properties



Setting Project and Application Properties



Setting Project and Application Properties

GettingStartedwithLinearReferencing - Explore Trails - ArcGIS Pro

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Licensing

ArcGIS Pro Named User License

Name	Licensed	Expires
Basic	No	N/A
Standard	No	N/A
Advanced	Yes	8/26/2019

Esri Extensions

Name	Licensed	Expires
3D Analyst	Yes	8/26/2019
Aviation Airports	Yes	8/26/2019
Business Analyst	Yes	8/26/2019
Data Interoperability	Yes	8/26/2019
Data Reviewer	Yes	8/26/2019
Defense Mapping	Yes	8/26/2019
Geostatistical Analyst	Yes	8/26/2019
Image Analyst	Yes	8/26/2019
LocateXT	Yes	8/26/2019

Settings

New

Open

Save

Save As

Portals

Licensing

Options

Python

Add-In Manager

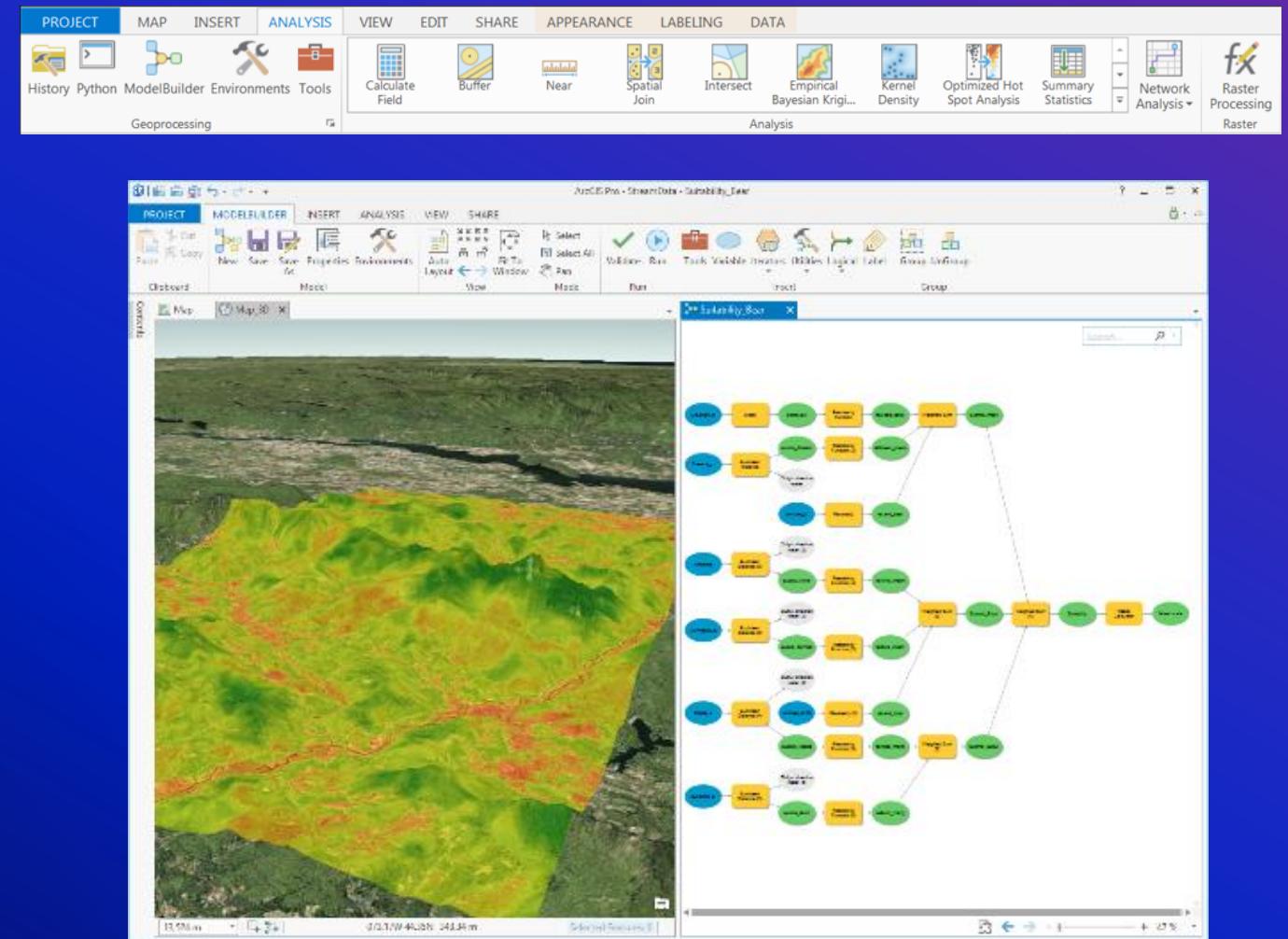
Help

About

Exit

Analysis in ArcGIS Pro

- Analysis tab
- Geoprocessing tool panes
- ModelBuilder
 - Export to Python
 - Send to Python Window
- Python
- Notebooks



Demonstration: Analysis

Additional Valuable Functionality

ArcGIS Pro Intelligence

Powerful analysis for actionable intelligence

Data Integration

Aggregate data from various sources and formats, to include spreadsheets, geospatial data, unstructured text, motion and satellite imagery, and more

Multi-dimensional visualization

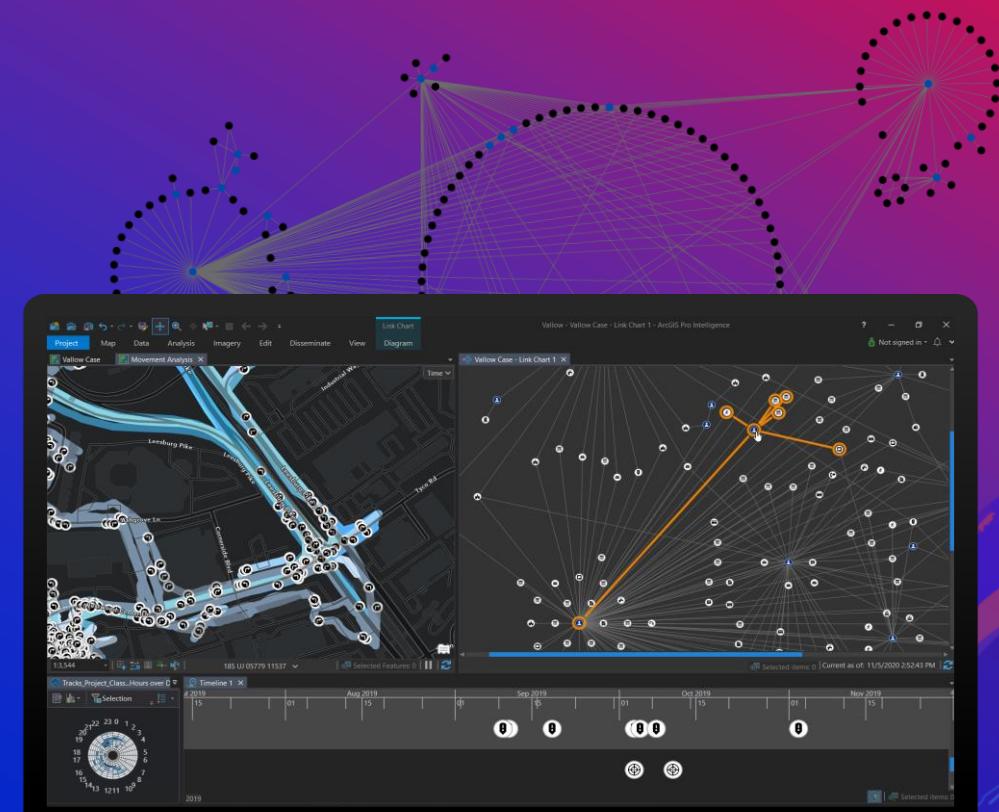
Use 2D and 3D maps, link charts, timelines, and graphs to integration your data on locations, times, and relationships

Advanced analysis

Identify key people, events, tracks, and places though advanced analytical techniques – geospatial data analysis, temporal analysis, link analysis, text analytics, movement analysis, and more

Intelligence production

Standardize products with professional symbology and report templates and disseminate intelligence to peers and consumers through projects, reports, files, and services or in print for large-format wall displays.



[Click here to learn more about ArcGIS Pro Intelligence](#)

Extensions Available in Pro

- ArcGIS Production Mapping
- ArcGIS Defense Mapping
- ArcGIS Data Reviewer
- ArcGIS Workflow Manager
- ArcGIS Aviation
- ArcGIS Maritime
- ArcGIS Roads and Highways

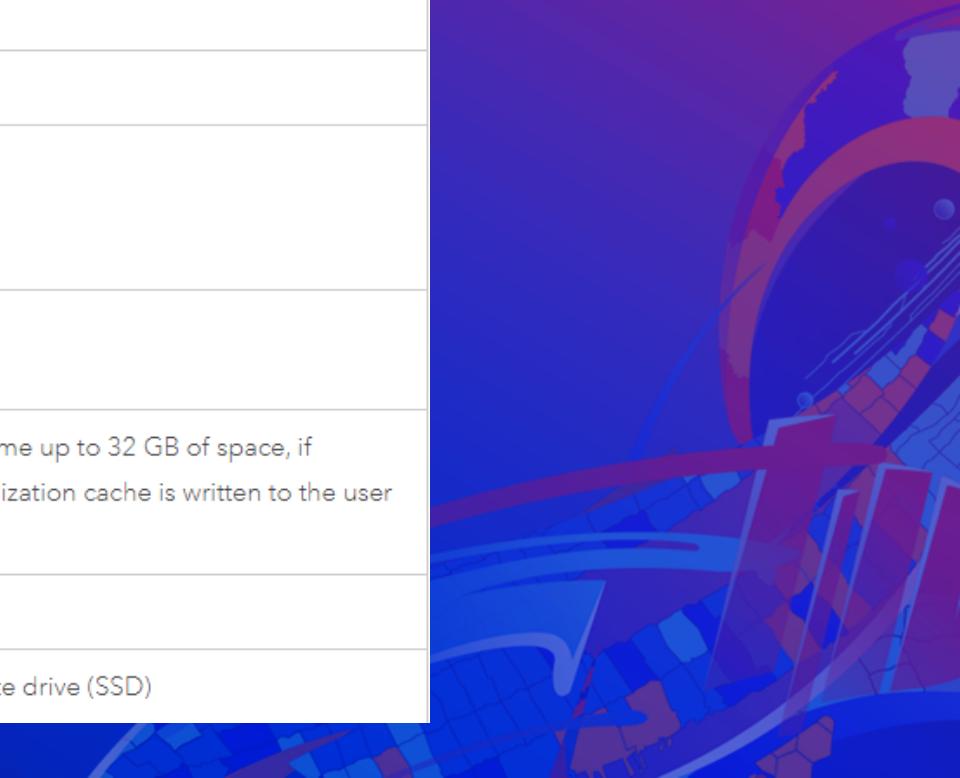


Can my system run ArcGIS Pro?

System Requirements

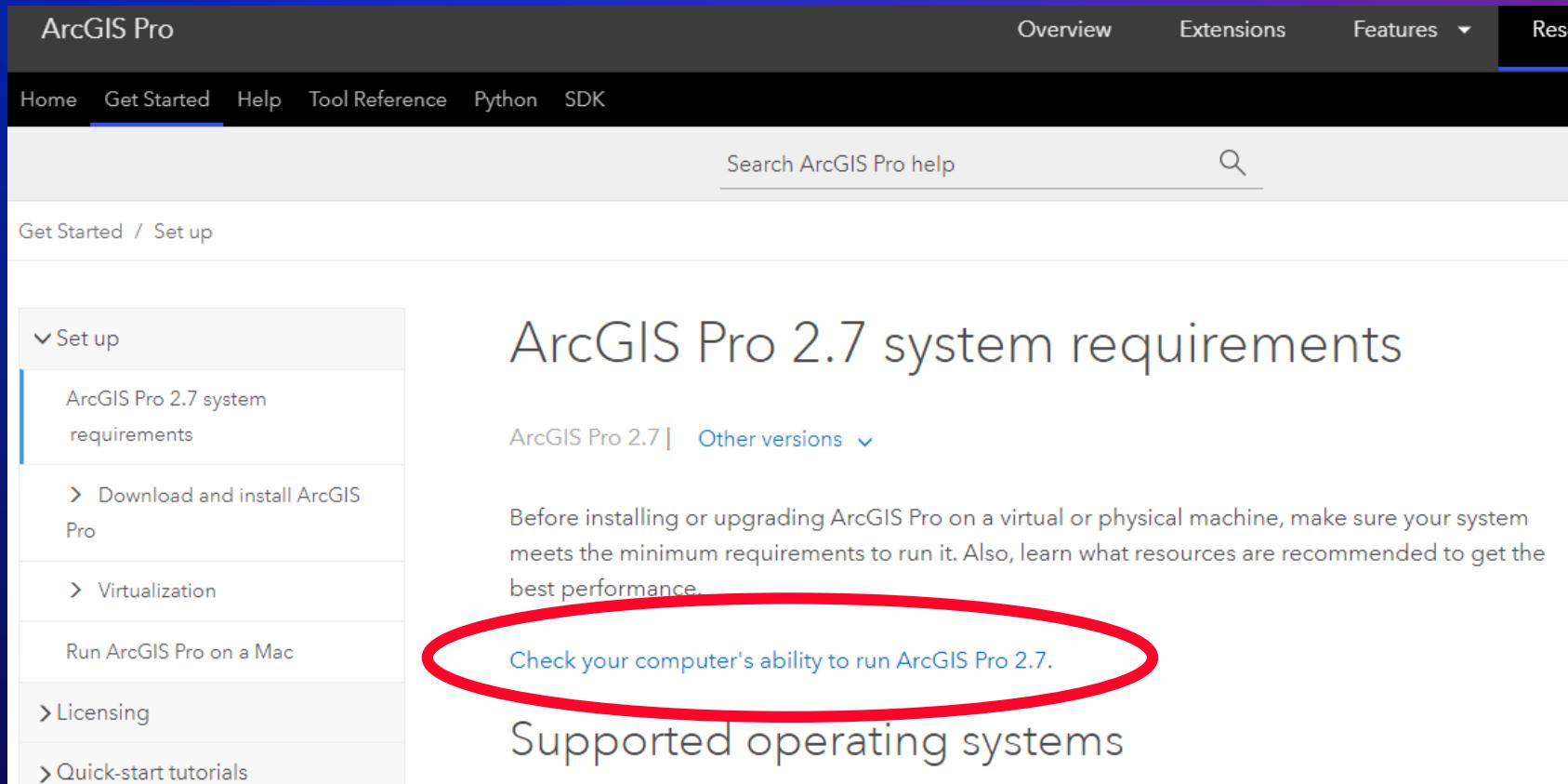
- **Hardware**

CPU	Minimum: 2 cores, hyperthreaded*
	Recommended: 4 cores
	Optimal: 10 cores
Platform	x64 with SSE2 extensions
Memory/RAM	Minimum: 8 GB
	Recommended: 16 GB
	Optimal: 32 GB or more
Display properties	24-bit color depth Also see Video and graphics adapter requirements below.
Screen resolution	1024x768 or higher at normal size
Visualization cache	The temporary visualization cache for ArcGIS Pro can consume up to 32 GB of space, if available, in the user-selected location. By default, the visualization cache is written to the user profile.**
Storage	Minimum: 32 GB of free space
	Recommended: 32 GB or more of free space on a solid-state drive (SSD)



System Requirements

- Check your computer's ability to run ArcGIS Pro



The screenshot shows the ArcGIS Pro 'Get Started' page. The left sidebar has a 'Set up' section with 'ArcGIS Pro 2.7 system requirements' selected. The main content area is titled 'ArcGIS Pro 2.7 system requirements' and includes a sub-section 'Check your computer's ability to run ArcGIS Pro 2.7.' This link is circled in red.

ArcGIS Pro 2.7 system requirements

ArcGIS Pro 2.7 | Other versions

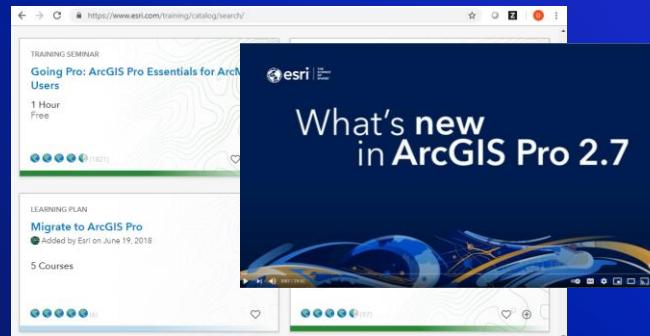
Before installing or upgrading ArcGIS Pro on a virtual or physical machine, make sure your system meets the minimum requirements to run it. Also, learn what resources are recommended to get the best performance.

[Check your computer's ability to run ArcGIS Pro 2.7.](#)

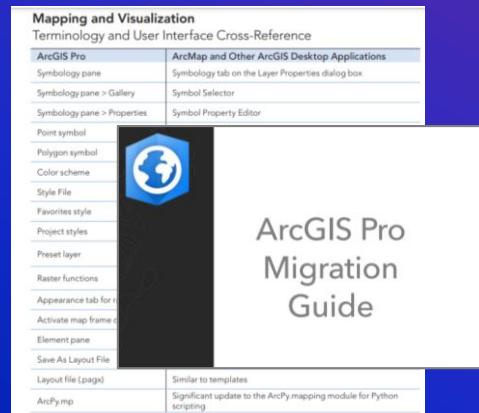
Supported operating systems

Resources

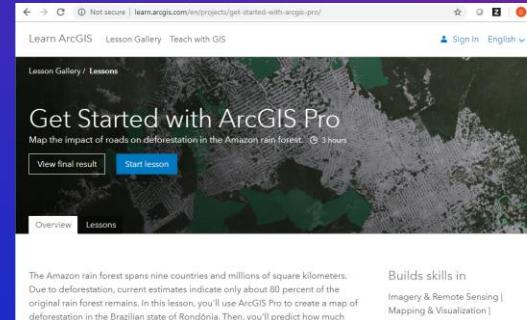
ArcGIS Pro migration and learning resources



Training Classes & Videos



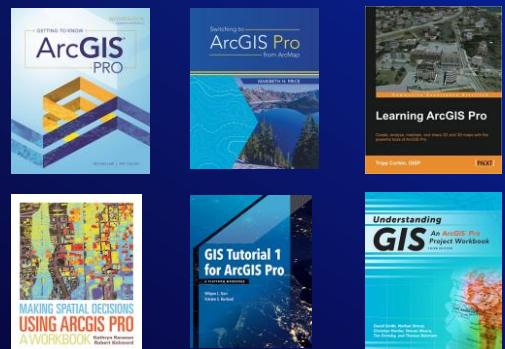
Guides: Terminology, Migration



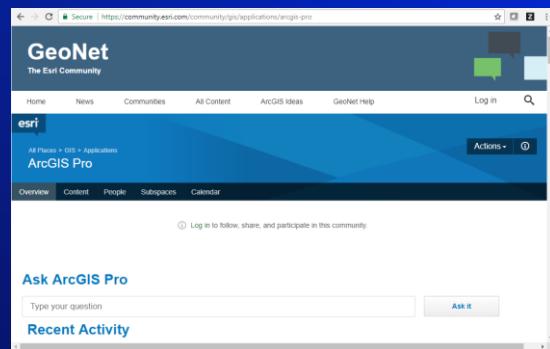
Learn.ArcGIS.com



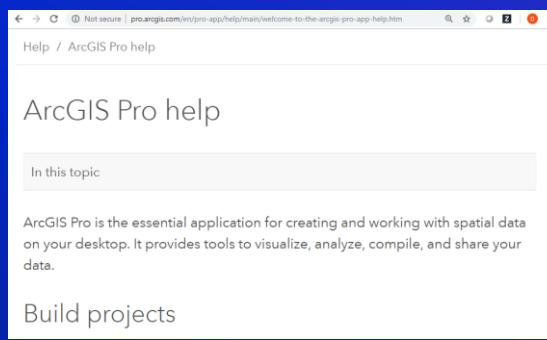
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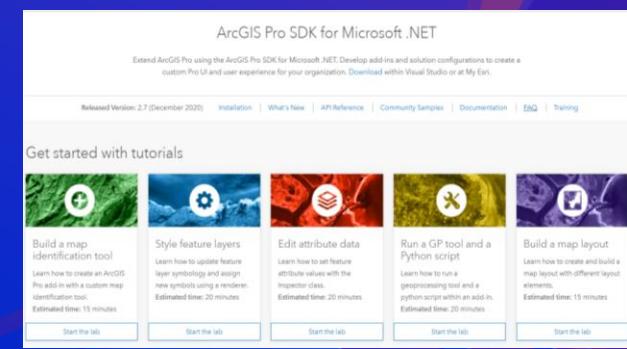
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