

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

The background of the slide features a vertical gradient from deep purple at the top to bright red at the bottom. In the bottom right corner, there is a stylized, semi-transparent map of Mexico. In the bottom left corner, there is a cluster of small, semi-transparent dots in shades of blue and orange, resembling a data visualization or a map feature.

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

The background of the slide features a vertical gradient from deep purple at the top to a vibrant red at the bottom. In the bottom right corner, there is a stylized, dark silhouette of the map of Mexico. In the bottom left corner, there is a cluster of small, semi-transparent dots in shades of blue and orange, resembling a starburst or a data point visualization.

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

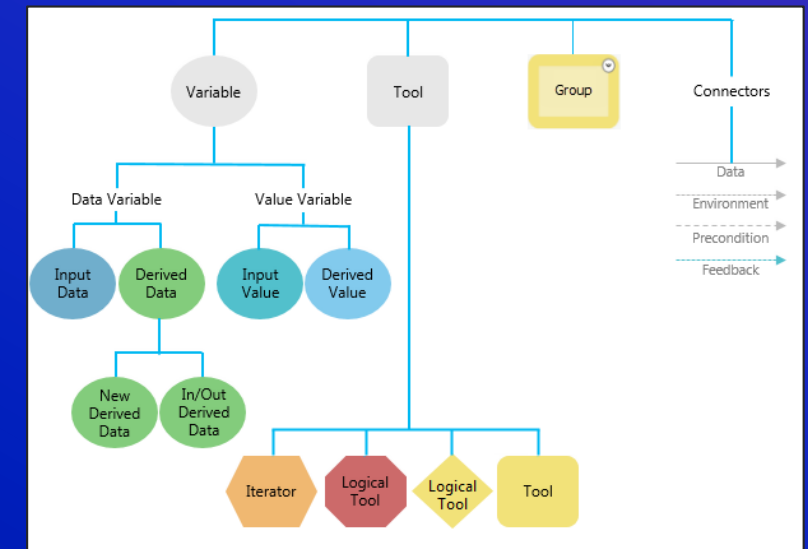
- Once edited and saved in Pro, they cannot be used in other Desktop applications. Use the Save As tool to save to earlier toolbox versions
- Calculate Field Tool does not support VB expressions in Pro, use Python or Arcade syntax.
- [Click here](#) to learn more about migrating models to ArcGIS Pro

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](#) ▾

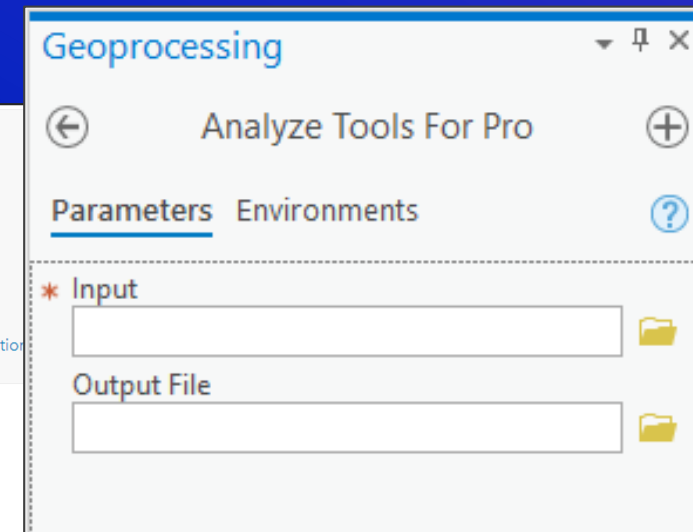
Summary

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.

In this topic

- Summary
- Usage
- Syntax
- Code sample
- Environments
- Licensing information

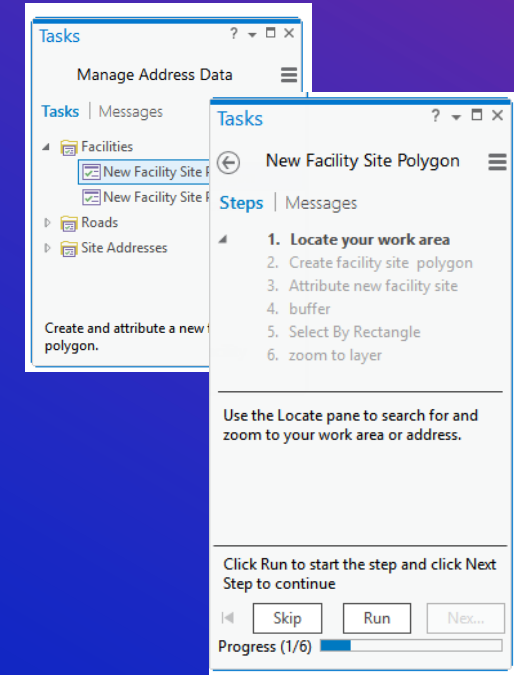


Planning for Migration

Other Options for Repeatable Workflows

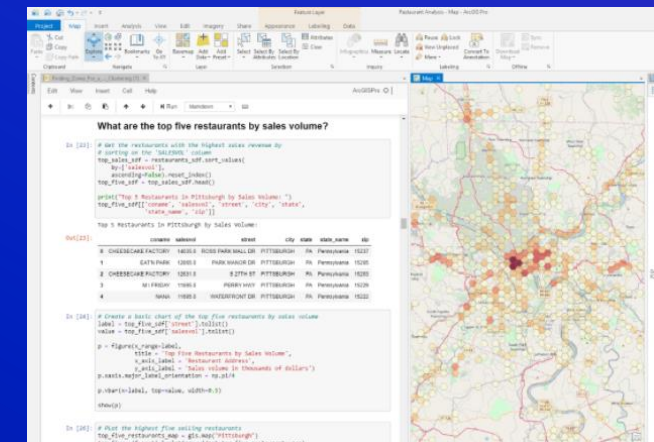
- Tasks

- 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

The image is a collage of screenshots related to the ArcGIS Pro SDK for .NET. The main screenshot shows the 'ArcGIS Pro SDK for Microsoft .NET' website. The header includes the title and a description: '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.' Below the header is a navigation bar with links: 'Released Version: 2.7 (December 2020)', 'Installation', 'What's New', 'API Reference', 'Community Samples', 'Documentation', and 'FAQ'. The main content area is titled 'Get started with tutorials' and features five cards, each with an icon and a description of a tutorial. The cards are: 'Build a map identification tool' (15 minutes), 'Style feature layers' (20 minutes), 'Edit attribute data' (20 minutes), 'Run a GP tool and a Python script' (20 minutes), and 'Build a map layout' (15 minutes). Each card has a 'Start the lab' button. Overlaid on the right side of the main screenshot are two smaller screenshots. The top one is the 'ArcGIS Pro 2.7 API Reference Guide' with a 'Collapse All' button and a link to the 'Introduction > ArcGIS Pro 2.7 API Reference Guide'. The bottom one is a 'What's New in the ArcGIS Pro SDK 2.7' announcement by Christopher Zent, dated December 17, 2020. It mentions that ArcGIS Pro 2.7 is now available with many new capabilities in the ArcGIS Pro SDK for .NET. At the bottom of this announcement is a 'Register' button and a row of social media icons.

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

Tutorial	Estimated time	Action
Build a map identification tool	15 minutes	Start the lab
Style feature layers	20 minutes	Start the lab
Edit attribute data	20 minutes	Start the lab
Run a GP tool and a Python script	20 minutes	Start the lab
Build a map layout	15 minutes	Start the lab

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

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

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

👍👎👏👑👤 (202) ❤️ ➕ ➦

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

4.5 (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 streamline 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.

 Download Table of Contents



Get started with ArcGIS Pro

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

Duration
30mins

Mapping Natural Resources

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

4.5 (970)

Duration: 14 Pages
Cost: Free



Take Advantage of Efficiencies

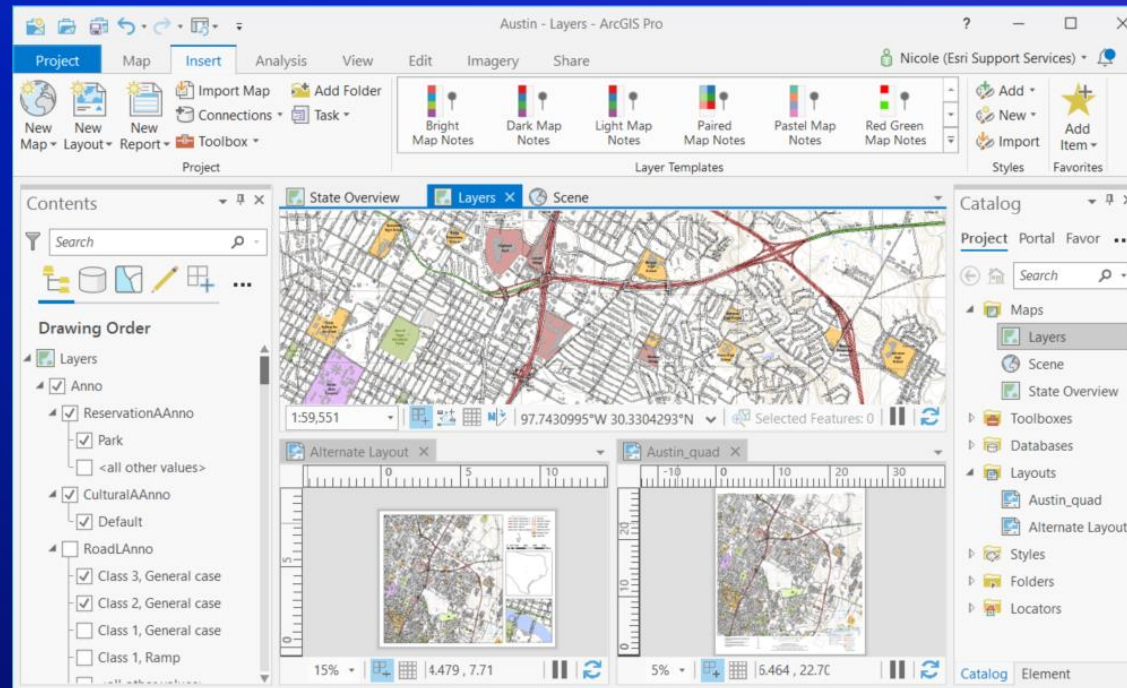
Take Advantage of Efficiencies

- Pro is a 64 bit, multi-threaded application

Use more
memory for
processing

Perform other
tasks while a tool
is running

- Simplified user interface

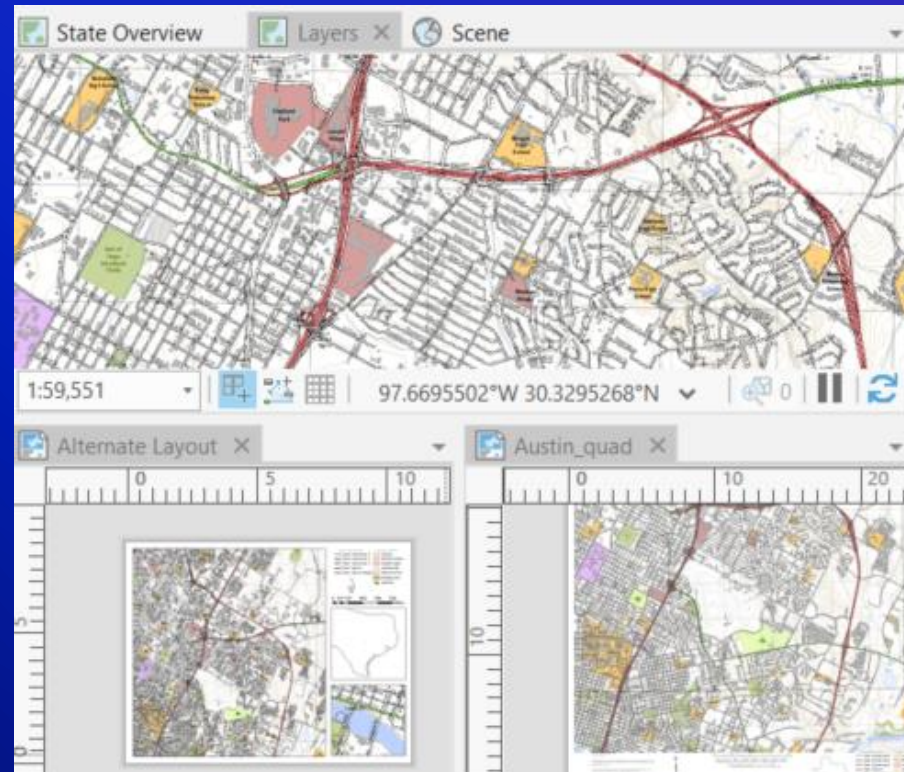


Take Advantage of Efficiencies

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

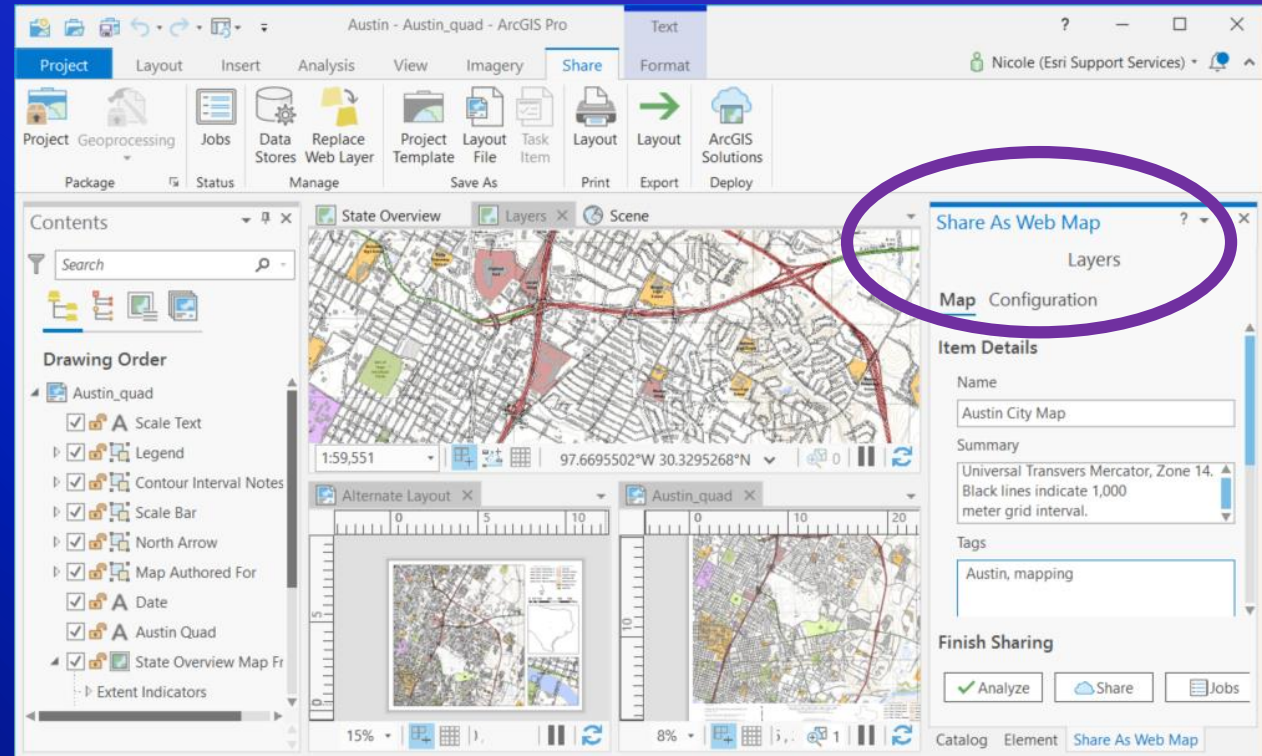
Multiple Map Tabs

Multiple Layouts



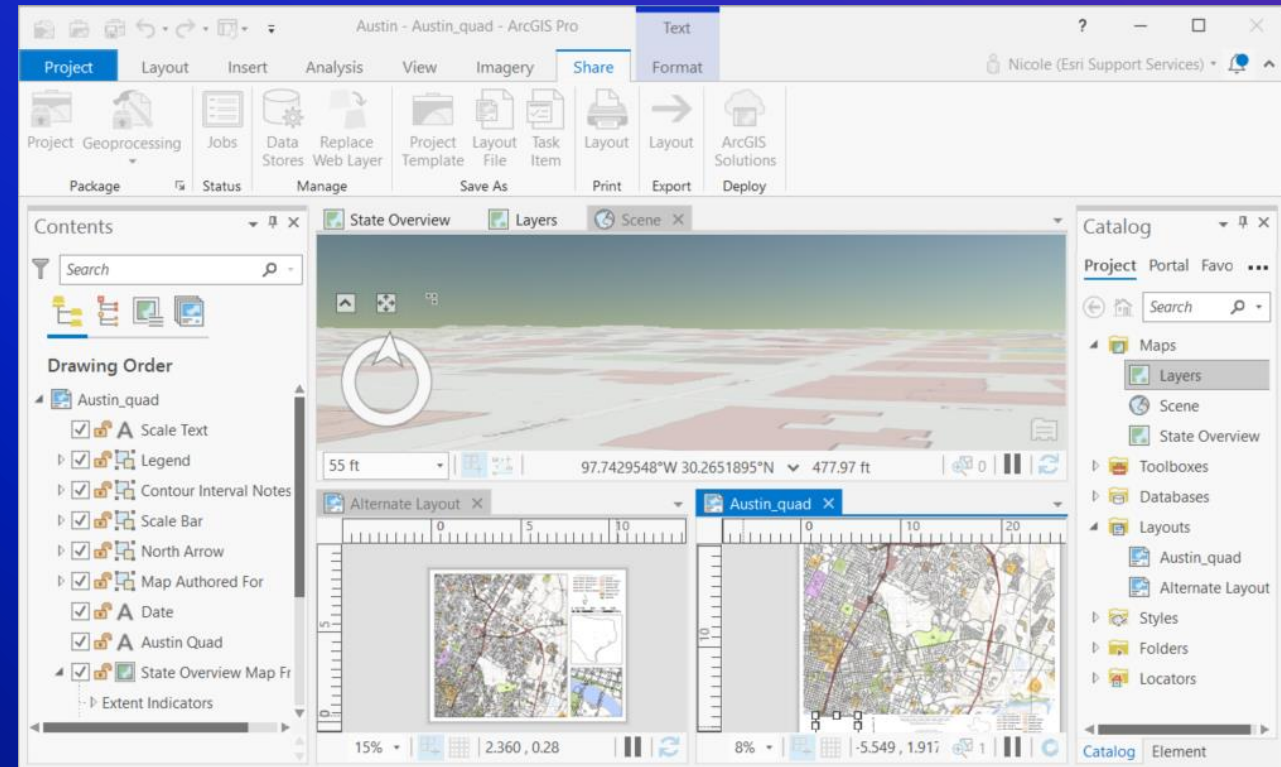
Take Advantage of Efficiencies

- 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

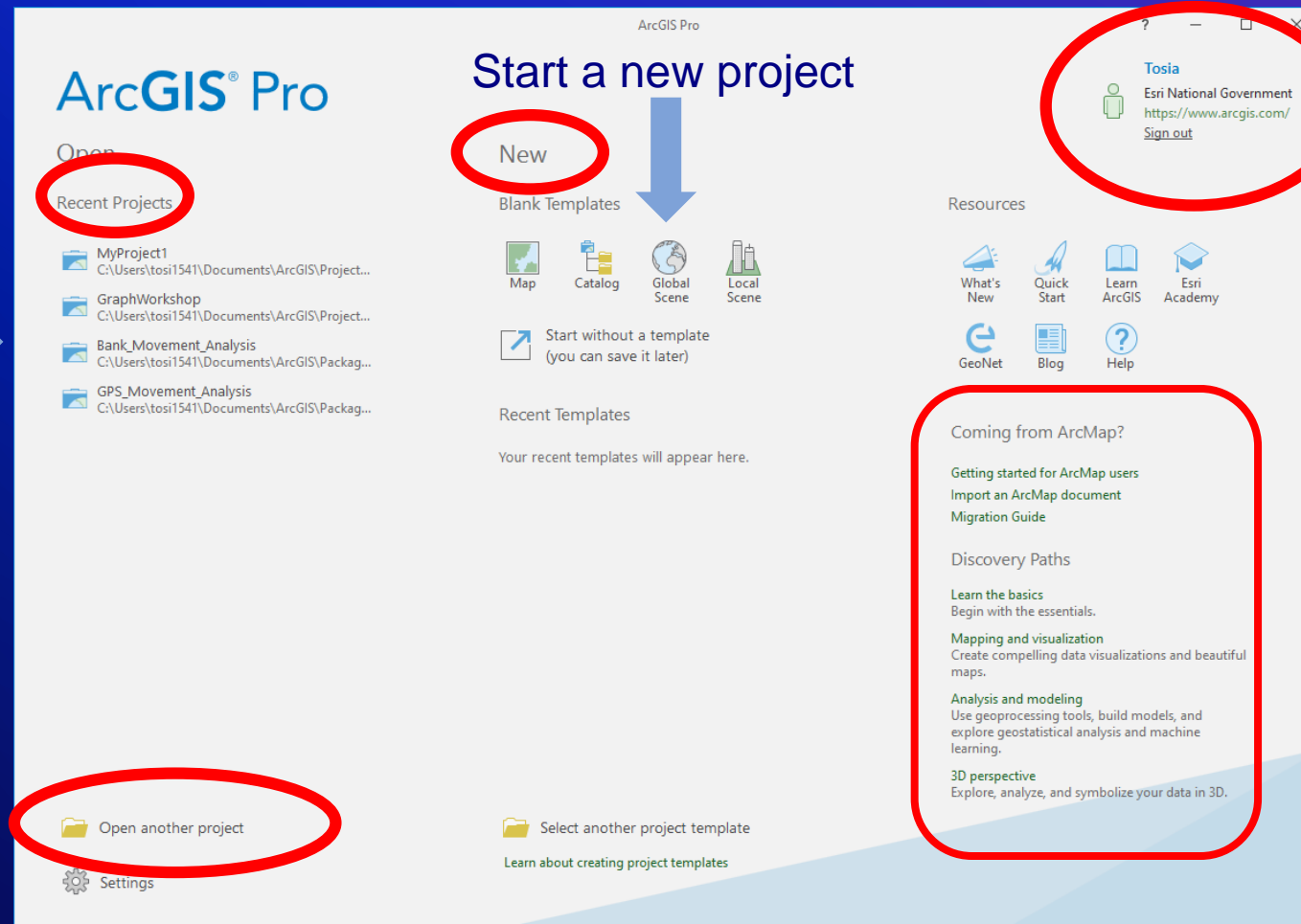
The background is a vibrant, abstract composition. It features a stylized globe in the upper right corner, rendered in shades of blue and red. Below the globe, there are swirling, wavy lines in blue and red, suggesting a dynamic or fluid environment. In the lower left corner, there is a cluster of small, colorful dots in blue, red, and orange, resembling a data visualization or a starburst. The overall color palette is dominated by deep blues, purples, and reds, creating a modern and tech-oriented aesthetic.

What will I see when I start ArcGIS Pro?

Open a recent project



Open other projects



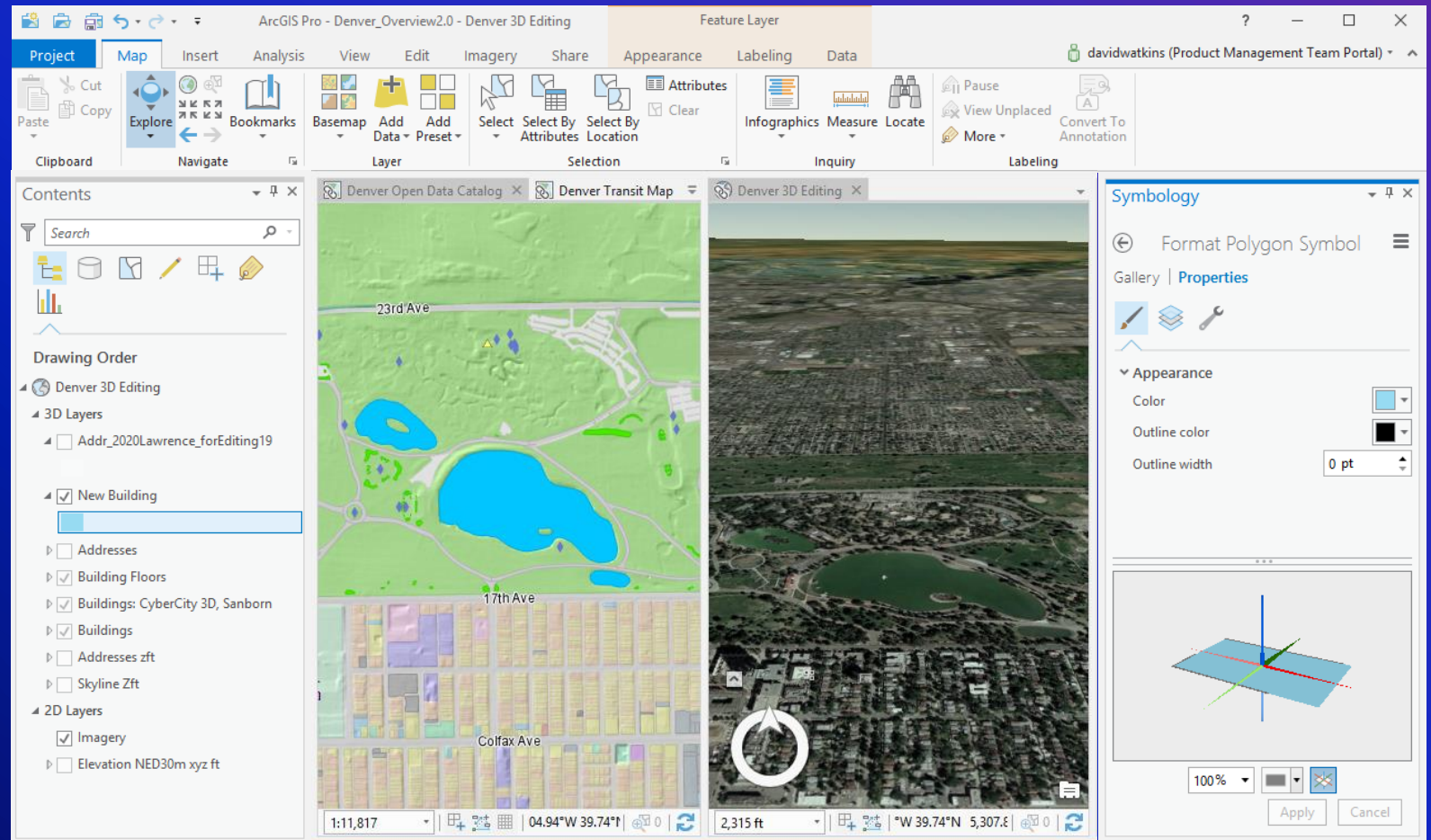
How my instance of ArcGIS Pro is licensed



For those coming from ArcMap

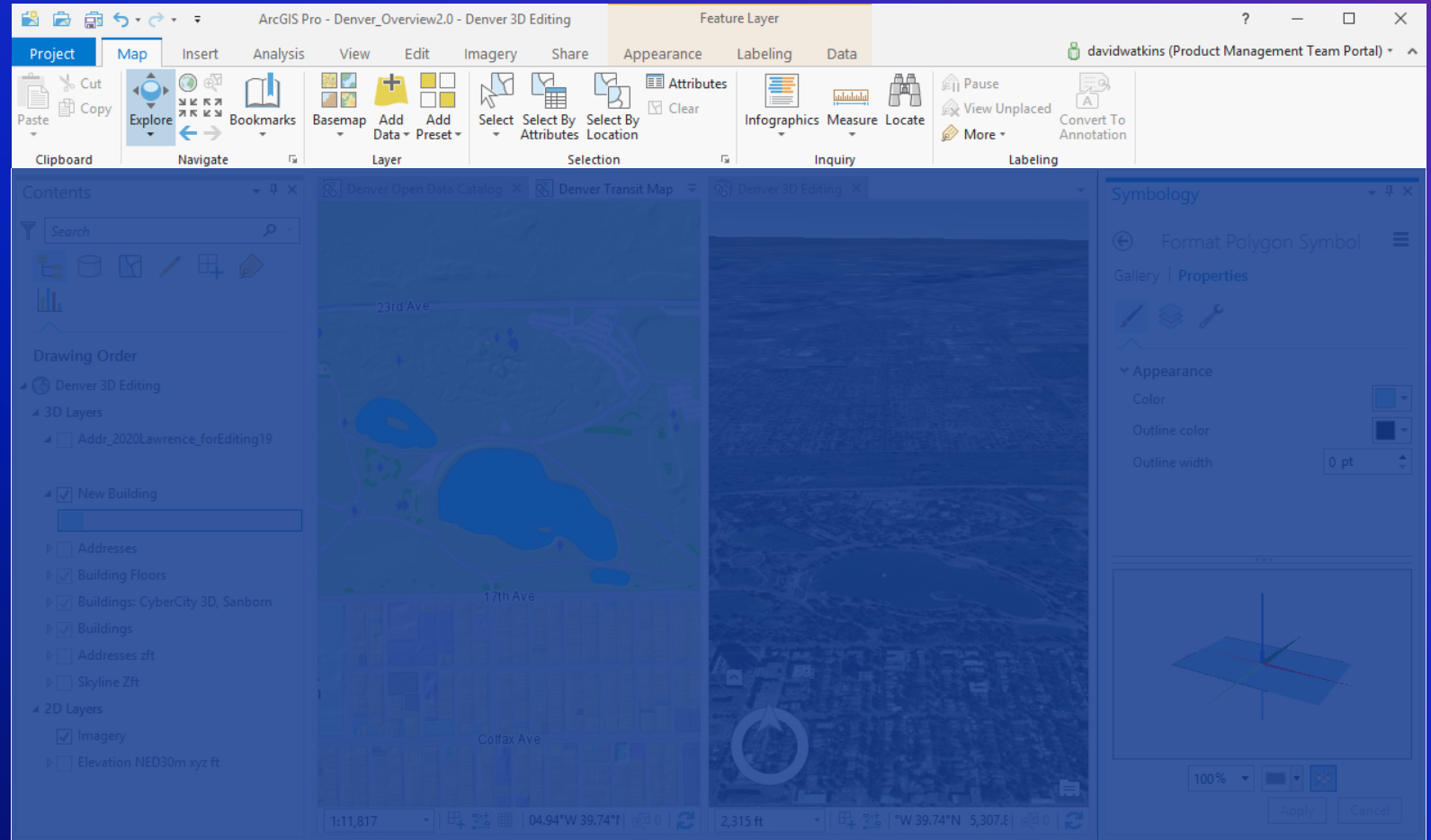


The User Interface is new



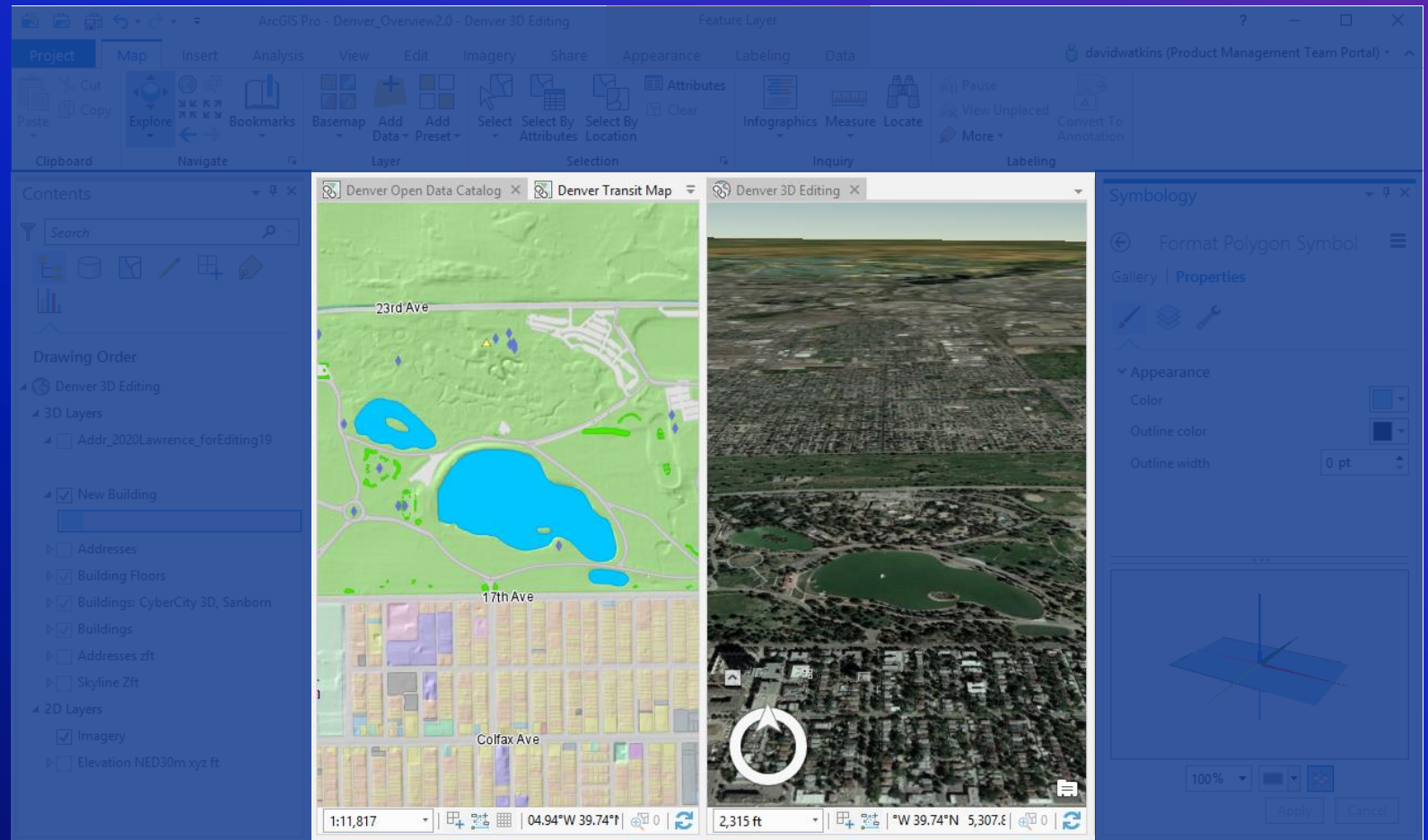
The User Interface is new

- Contextual ribbon



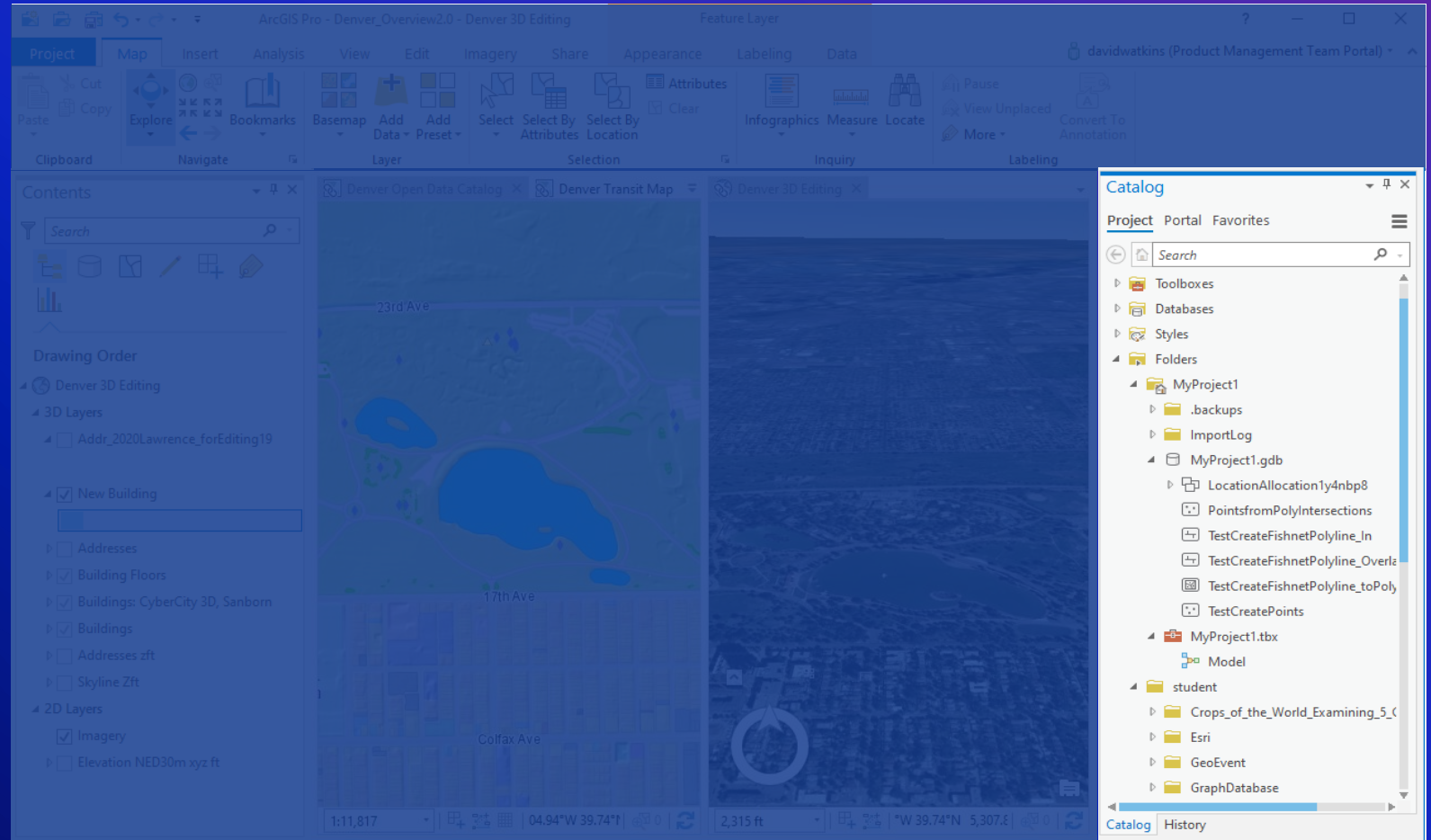
The User Interface is new

- Views



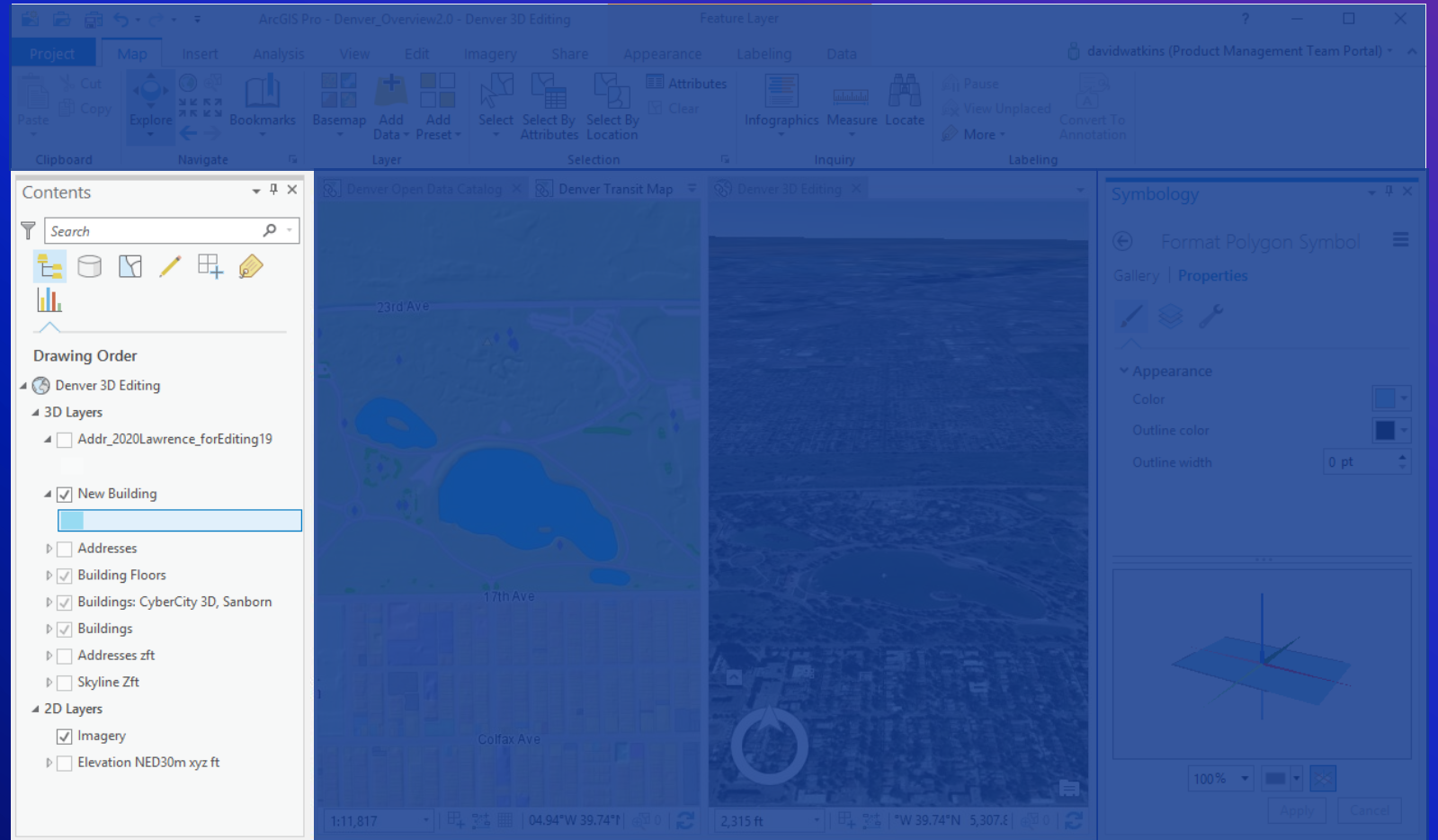
The User Interface is new

- Panes



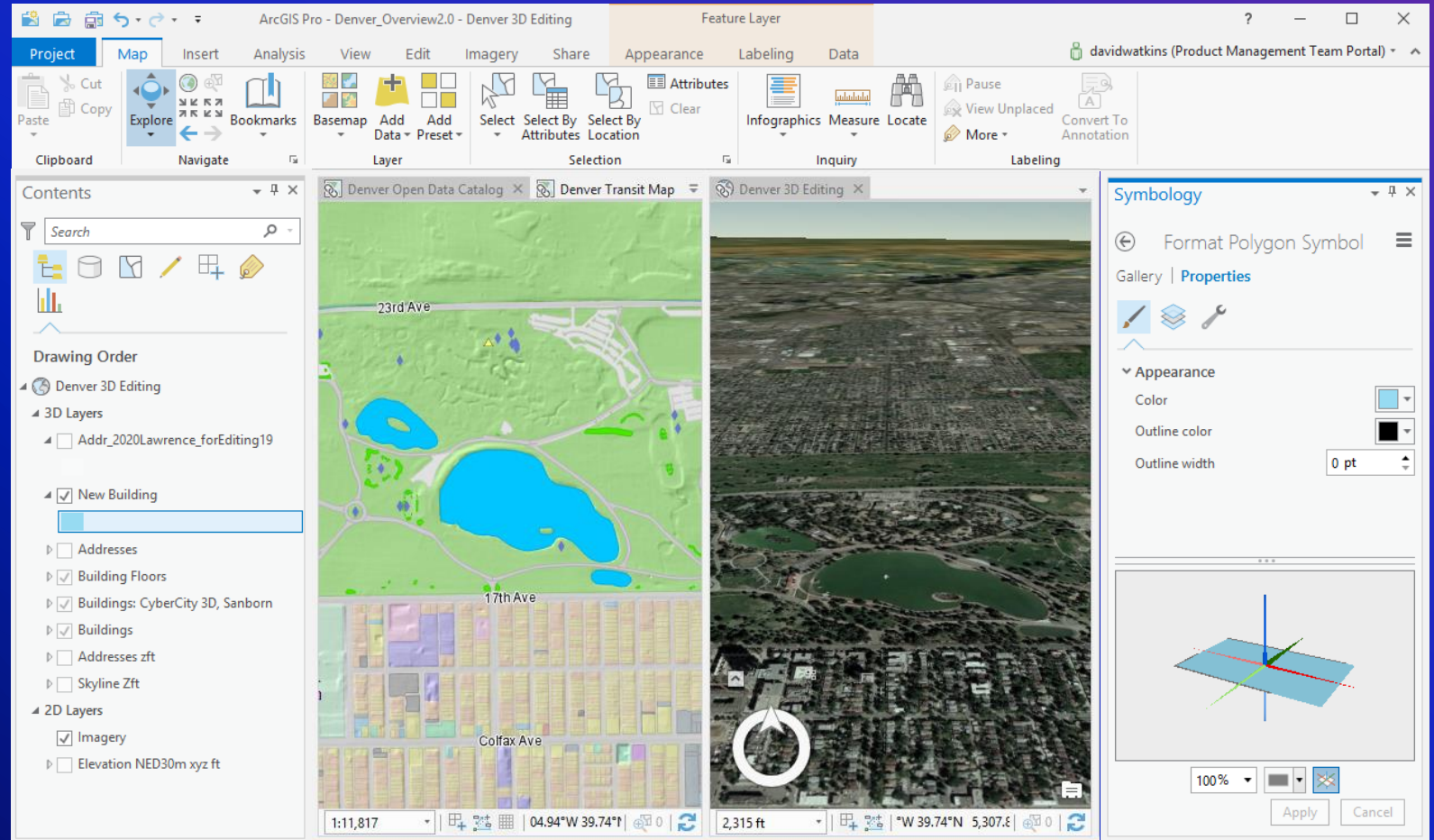
The User Interface is new

- Contents



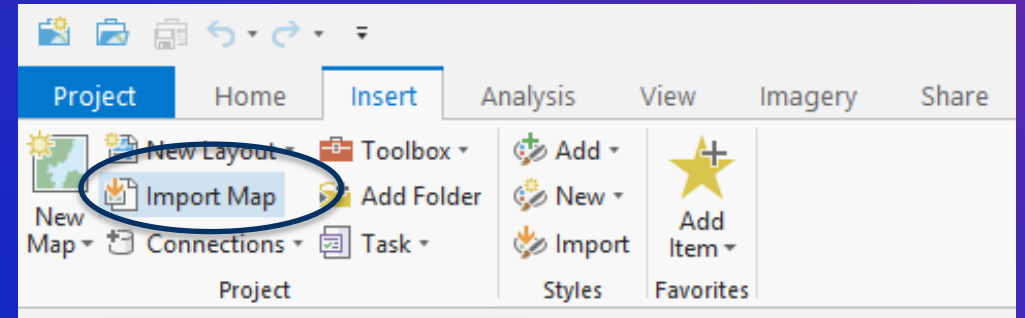
The User interface is new, but concepts are the same

- Contextual ribbon
- Views
- Panes
- Contents



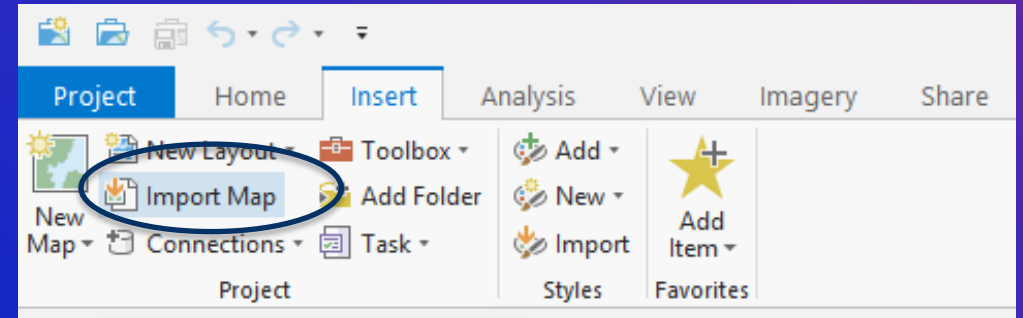
Import existing maps, scenes, and globes

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

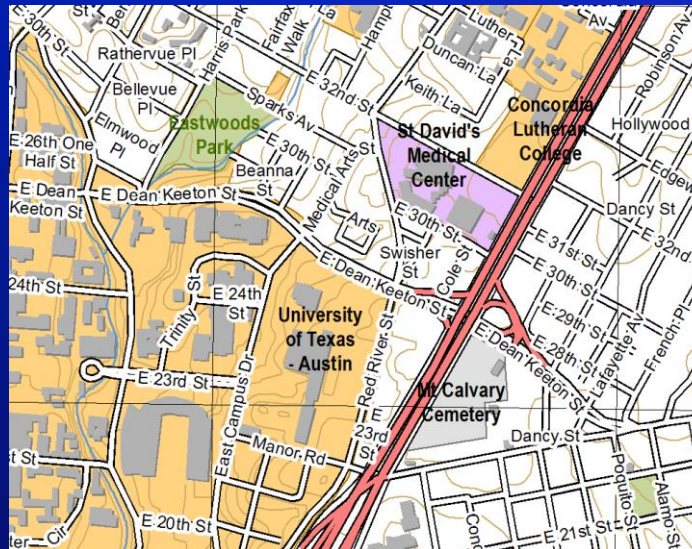


Import existing maps, scenes, and globes

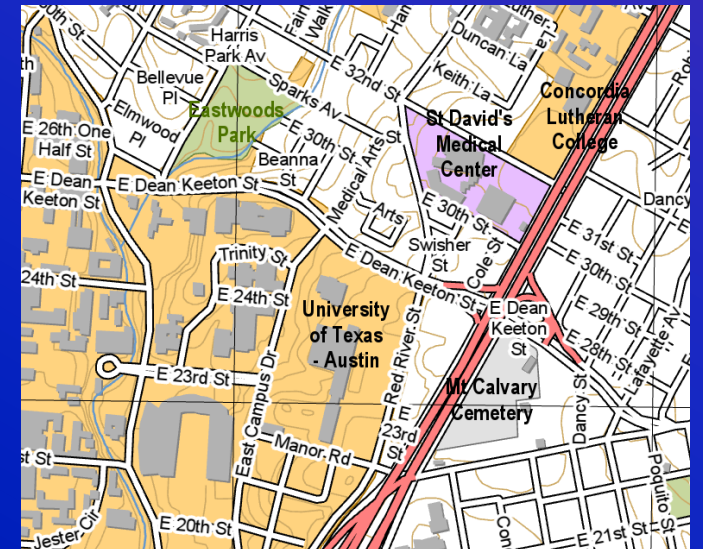
- What will import?
 - .mxd, .sxd, .3dd files
 - Maps, layouts, symbology, scenes, and models
- Results should look the same



ArcMap

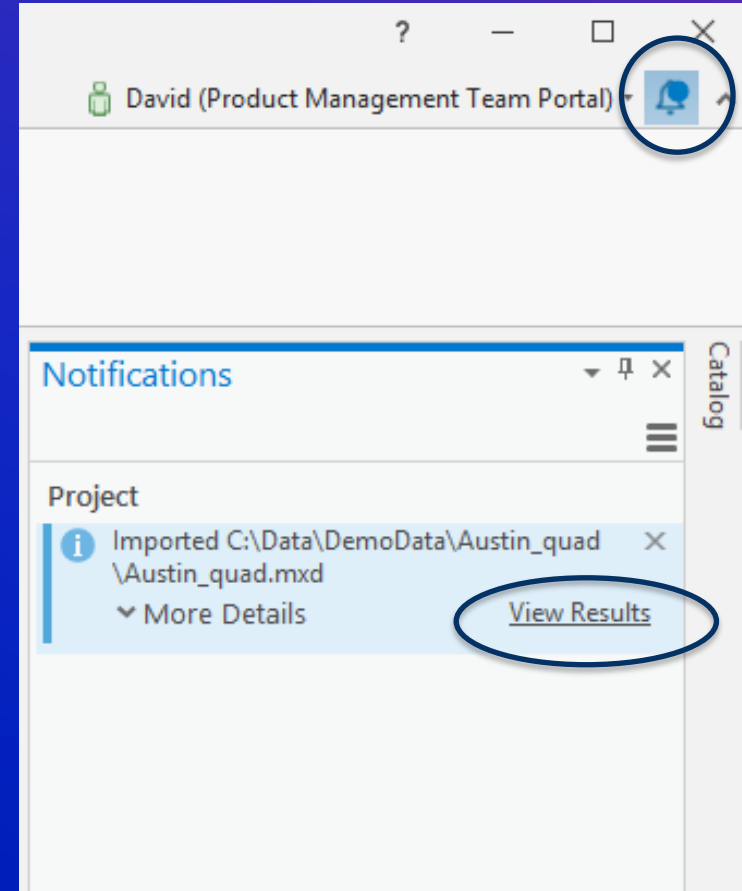


ArcGIS Pro



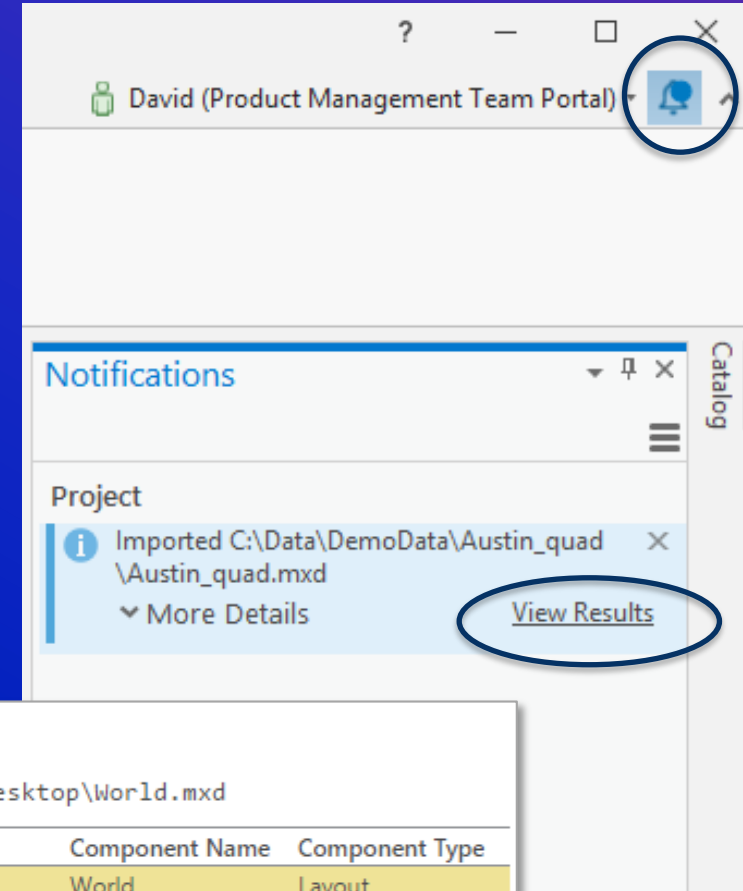
What if something doesn't look the same?

- 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



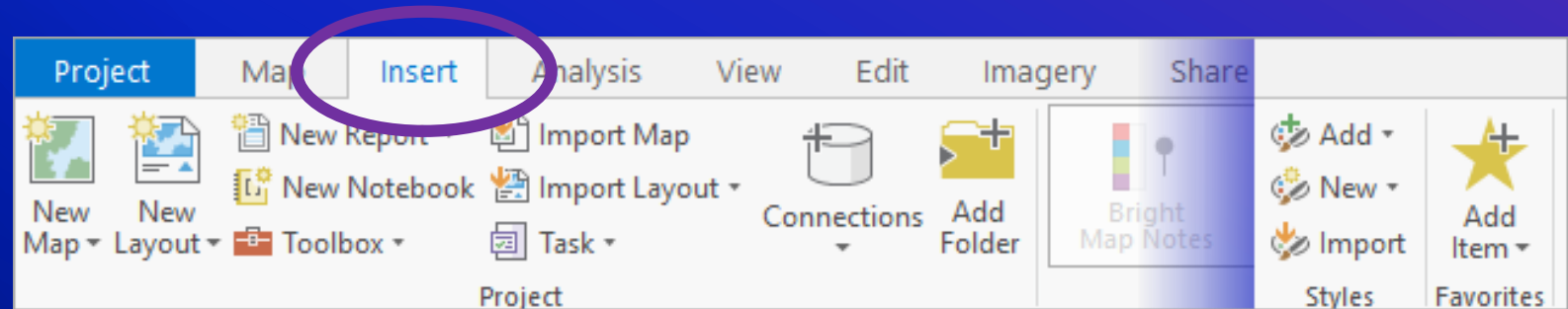
Import results for World.mxd

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

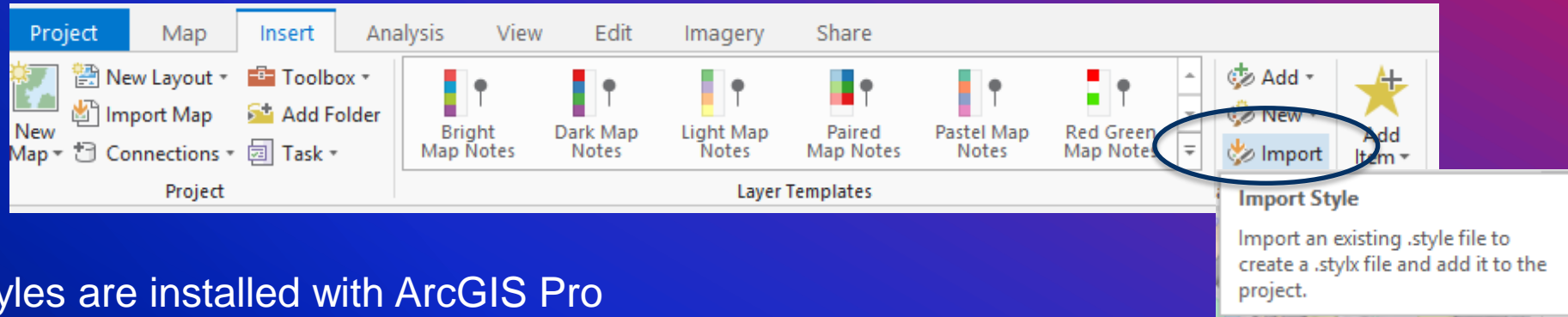
- Use the Insert Tab to add connections to:
 - Folders
 - Databases
 - Servers
 - Locators
 - Toolboxes
 - Styles



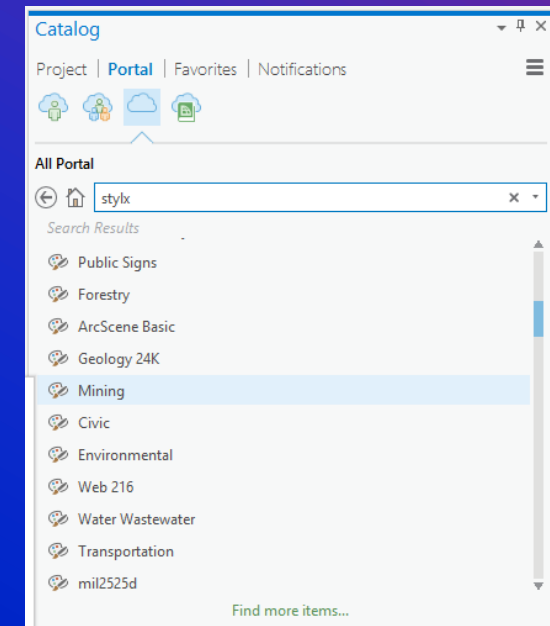
Demonstration: Import MXD

The background features a vertical gradient from deep purple at the bottom to bright red at the top. In the upper right corner, there is a stylized, abstract map of Mexico rendered in shades of blue and white. In the lower left corner, a cluster of small, semi-transparent blue and orange dots is visible, resembling a data visualization or a particle effect.

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

Grid Date Modified Filter

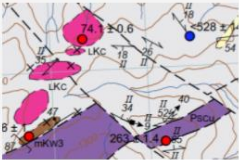
Item Type

- 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.stylx	1/10/2021 11:49 PM	STYLX File
	Crime_Analysis_en.stylx	1/10/2021 11:44 PM	STYLX File

Public Safety Pro Style

Overview

Download



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

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

★★★★★

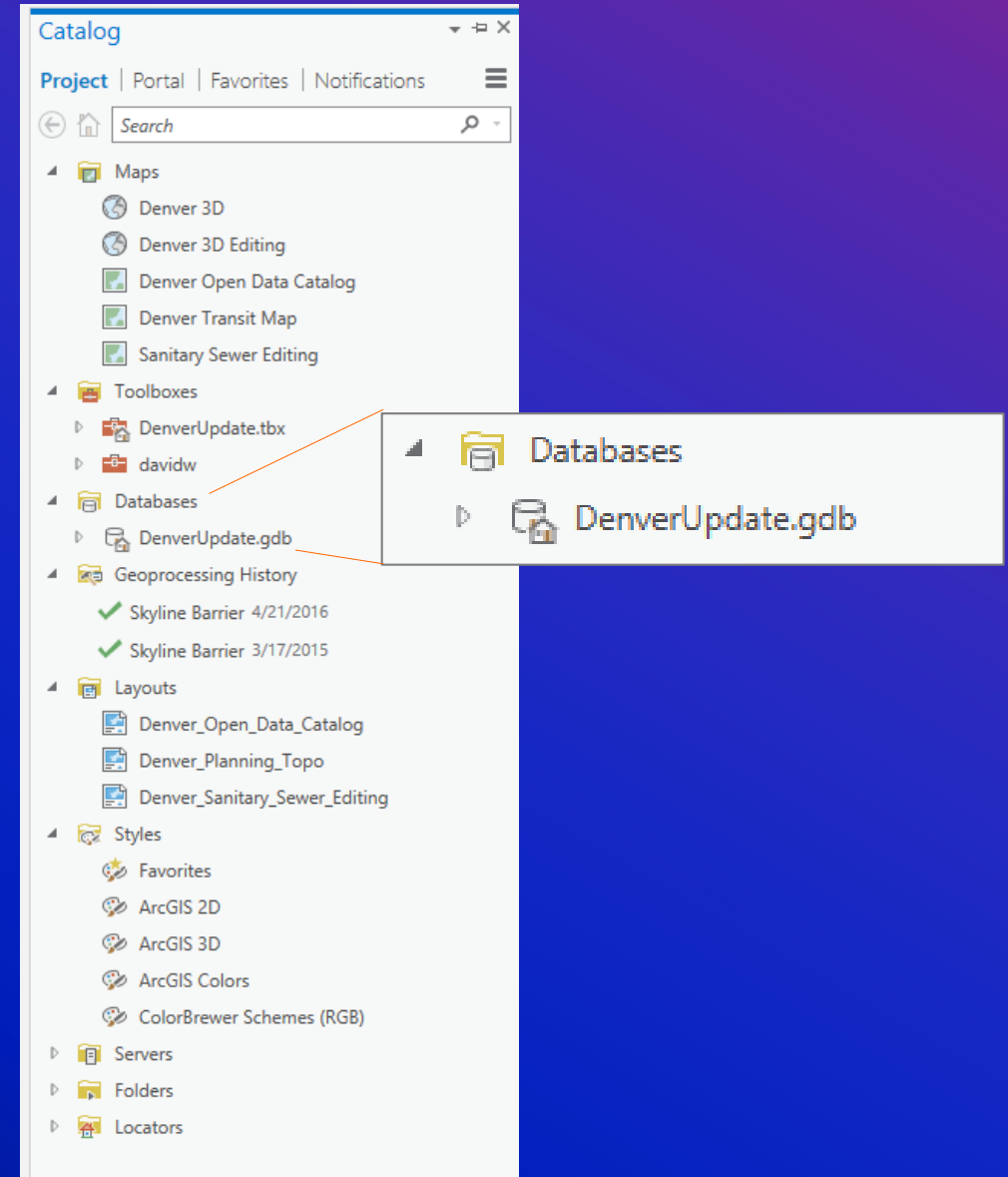
  

Catalog Pane

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

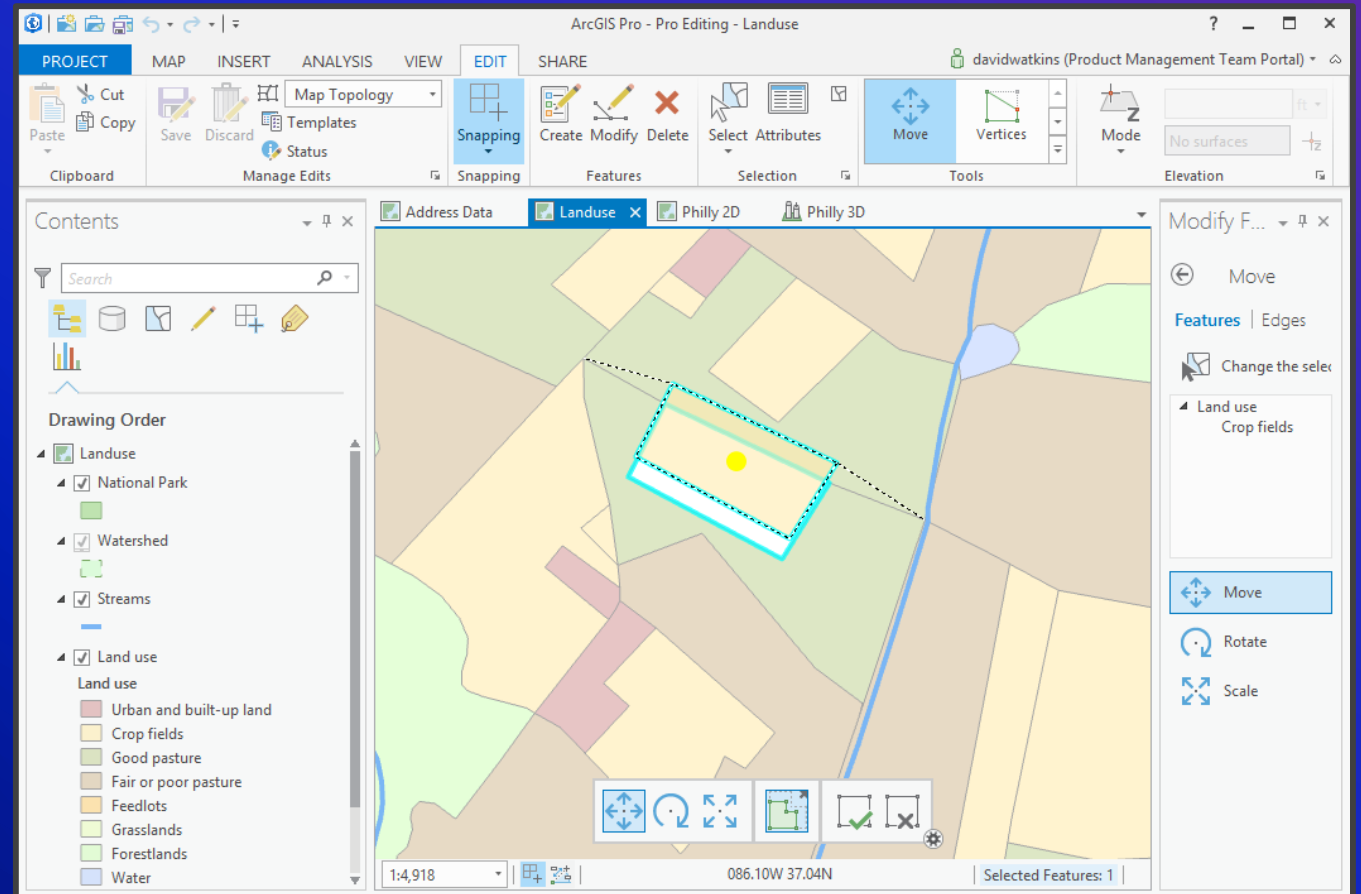
All can be easily packaged and shared

- Project packages
- Project templates



Editing in ArcGIS Pro

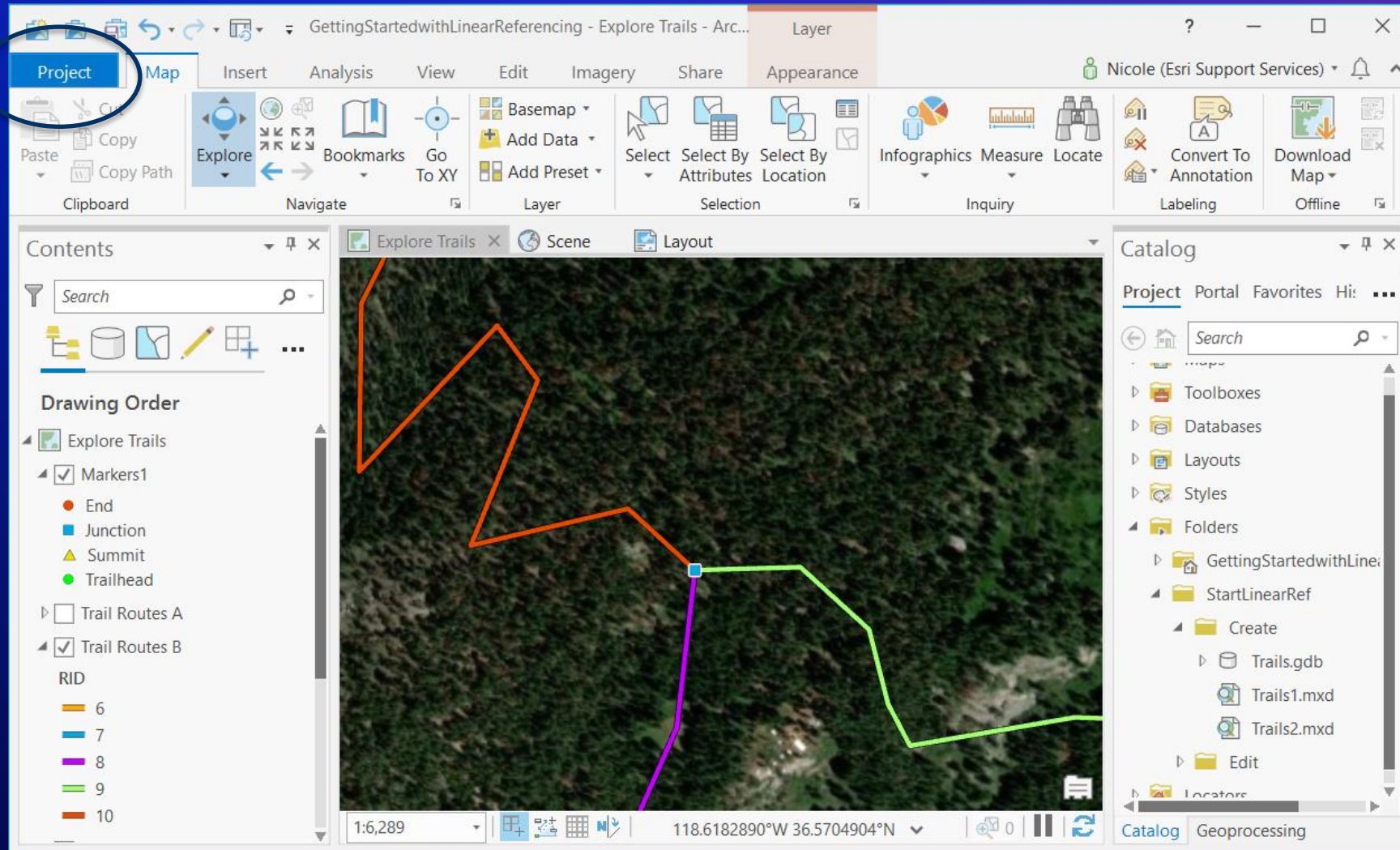
- No need to start and stop editing
- Create and modify features
- Edit versioned data
- Edit map and geodatabase topology
- Group templates



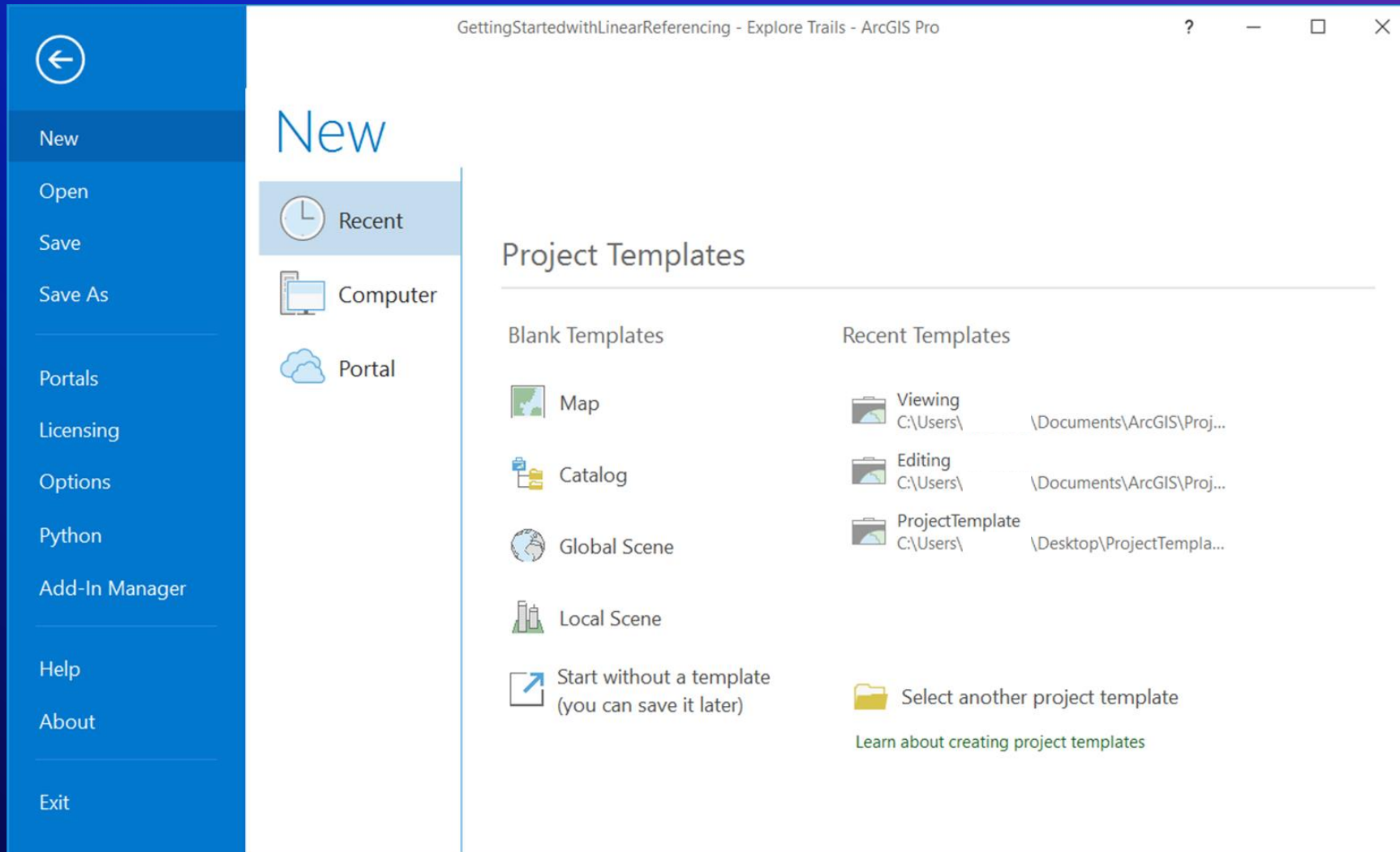
Setting Properties



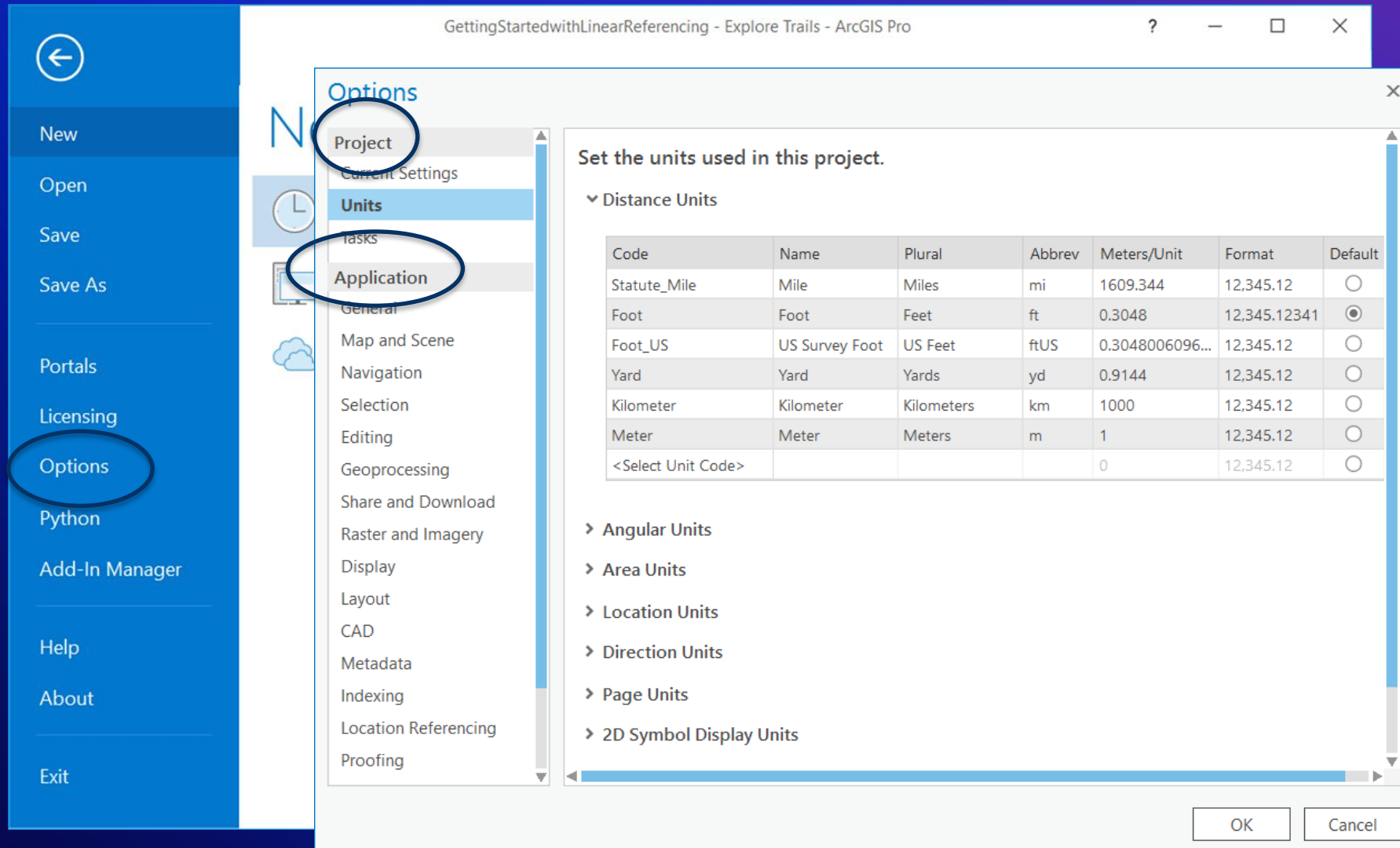
Setting Project and Application Properties



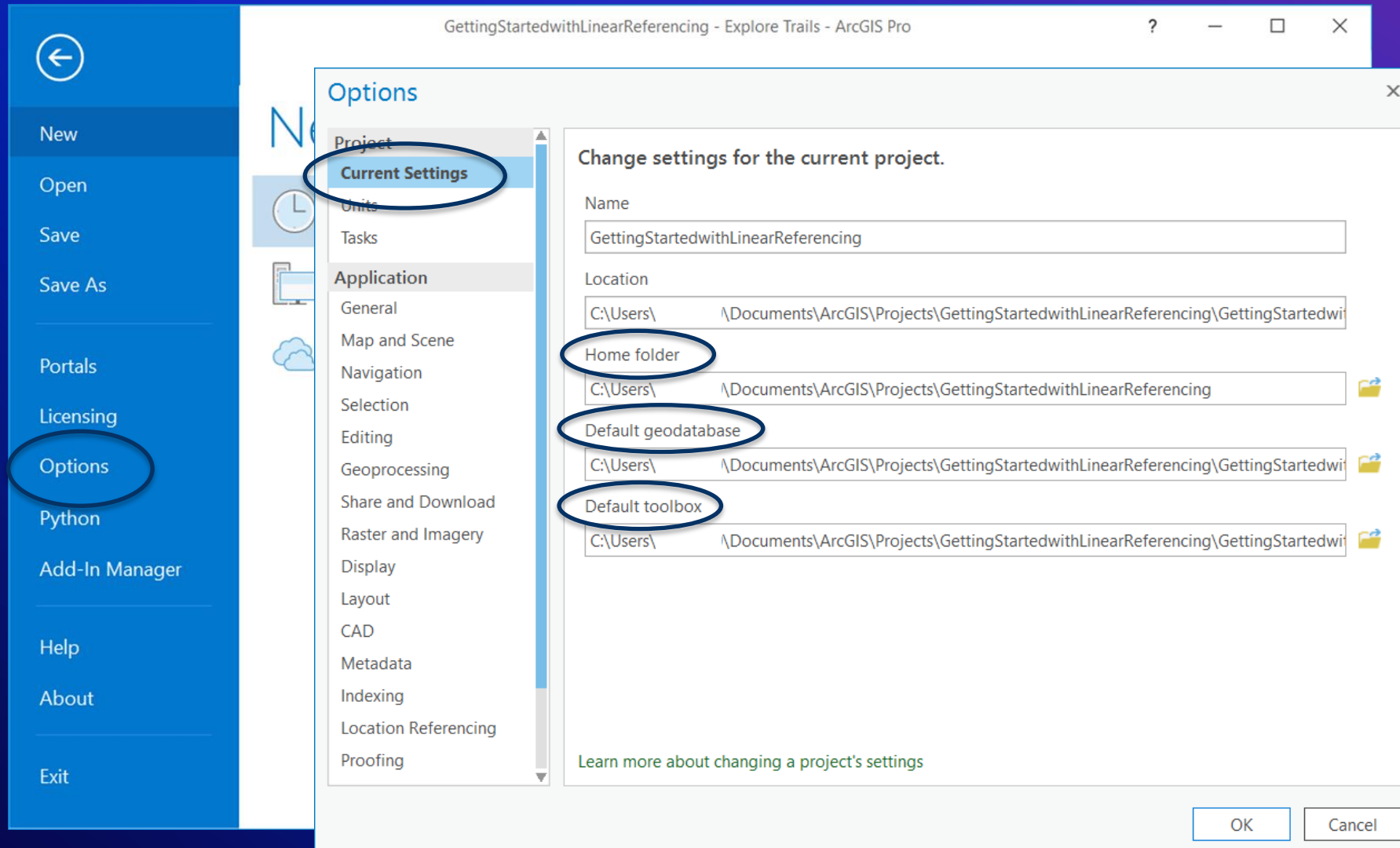
Setting Project and Application Properties



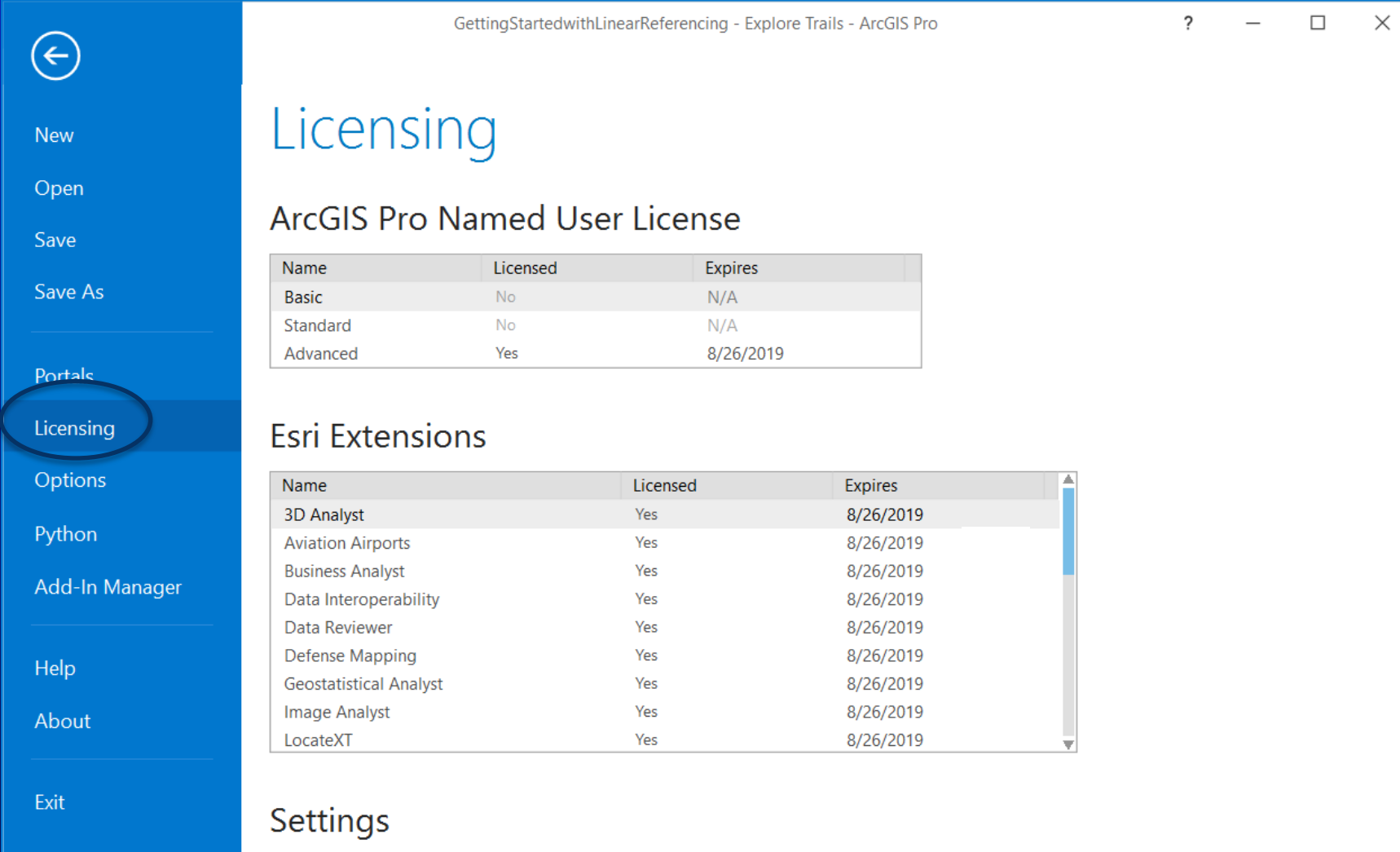
Setting Project and Application Properties



Setting Project and Application Properties



Setting Project and Application Properties



GettingStartedwithLinearReferencing - Explore Trails - ArcGIS Pro

Licensing

ArcGIS Pro Named User License

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

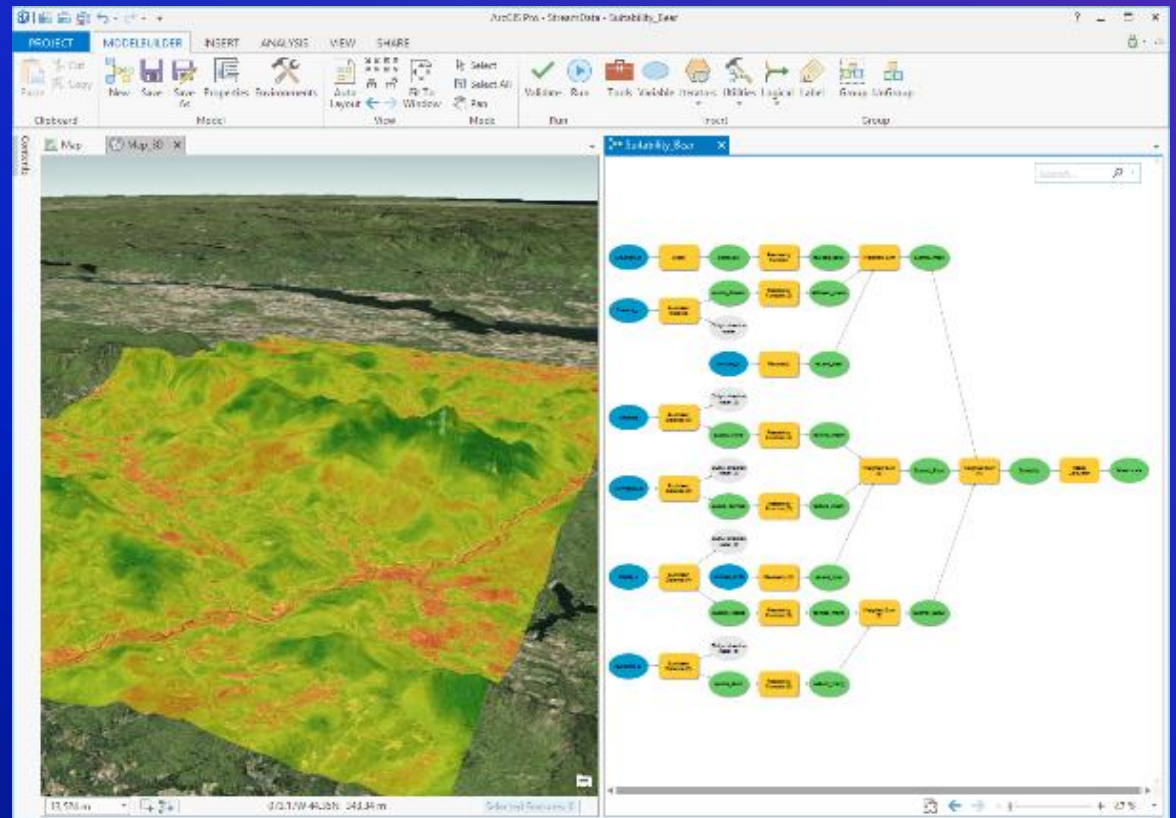
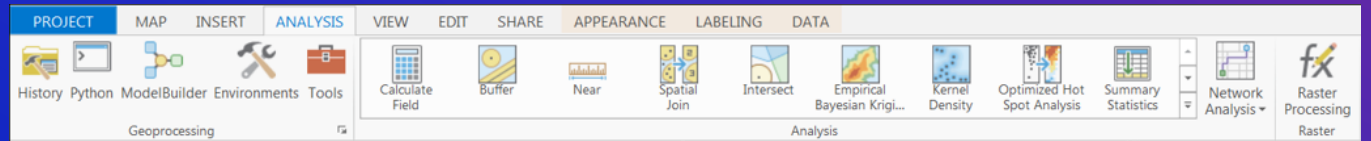
Esri Extensions

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

Analysis in ArcGIS Pro

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



Demonstration: Analysis

The background is a vibrant, abstract composition. It features a gradient of blue and orange. In the top right corner, there are large, flowing, wavy shapes in shades of blue and orange. A map of Mexico is visible in the bottom right corner, rendered in a dark blue color. In the bottom left corner, there is a cluster of small, blue and orange dots, some of which are larger and more prominent than others.

Additional Valuable Functionality

The background is a vibrant, abstract composition. It features a gradient of deep blue and magenta. In the upper right, there are stylized, wavy, organic shapes in shades of blue and red, resembling liquid or smoke. A dark silhouette of the map of Mexico is visible on the right side. In the lower left corner, there is a cluster of small, glowing blue and orange dots, some of which are arranged in a circular pattern, suggesting a molecular or data structure.

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

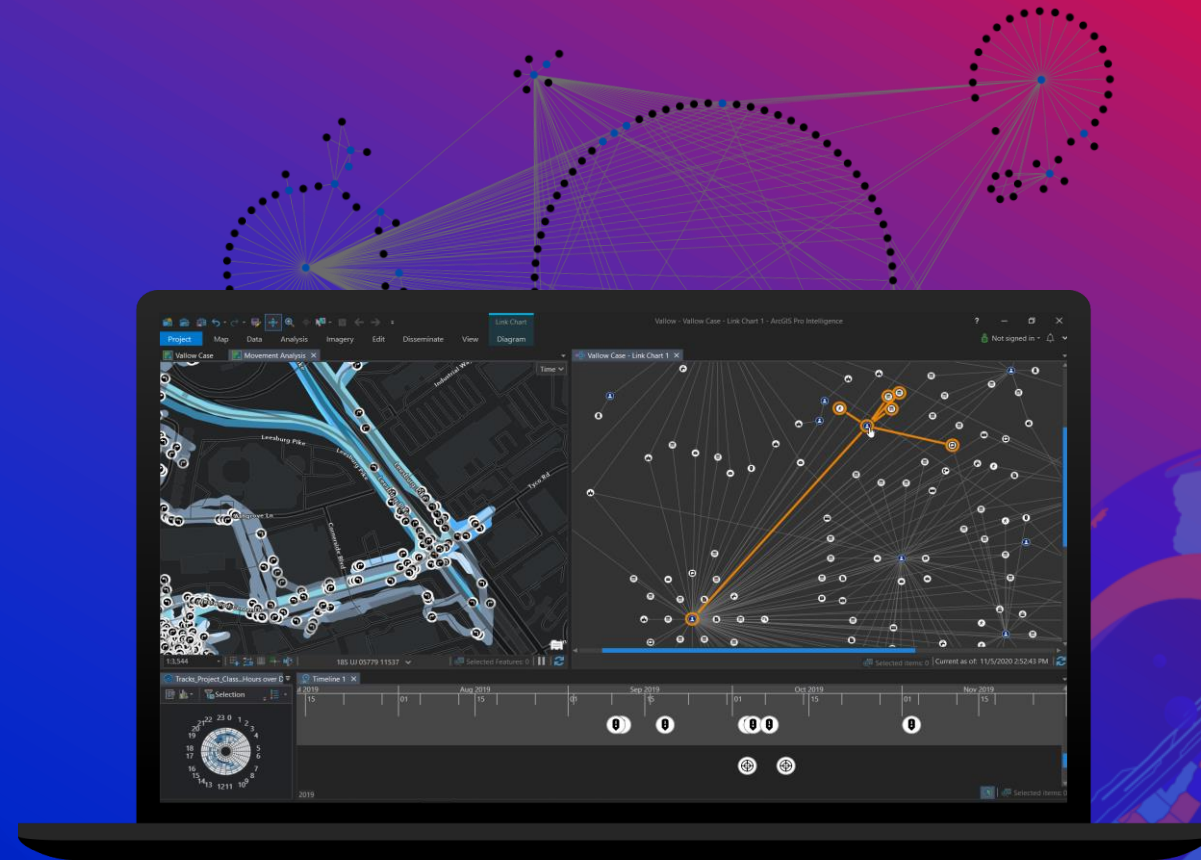
Use 2D and 3D maps, link charts, timelines, and graphs to integration your data on locations, times, and relationships

Advanced analysis

Identify key people, events, tracks, and places through 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](#)

ArcGIS Pro

Overview Extensions Features Res

Home Get Started Help Tool Reference Python SDK

Search ArcGIS Pro help

Get Started / Set up

Set up

- ArcGIS Pro 2.7 system requirements
- > Download and install ArcGIS Pro
- > Virtualization
- Run ArcGIS Pro on a Mac
- > Licensing
- > Quick-start tutorials

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.

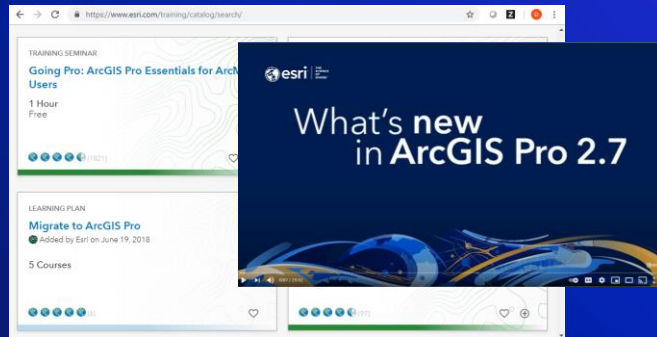
[Check your computer's ability to run ArcGIS Pro 2.7.](#)

Supported operating systems

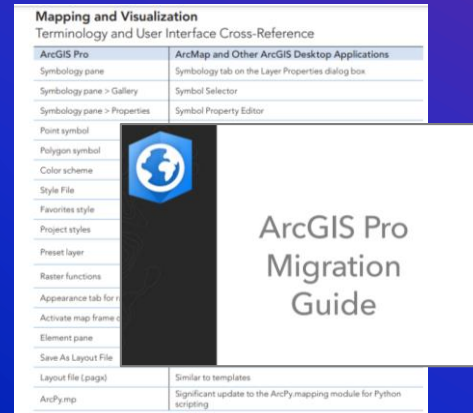
Resources



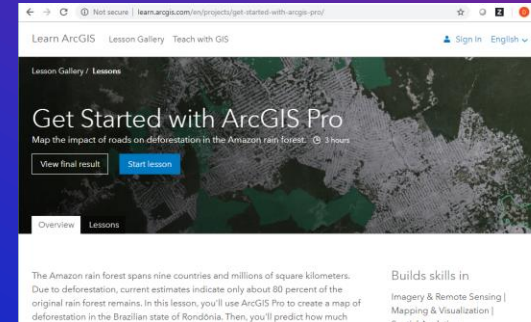
ArcGIS Pro migration and learning resources



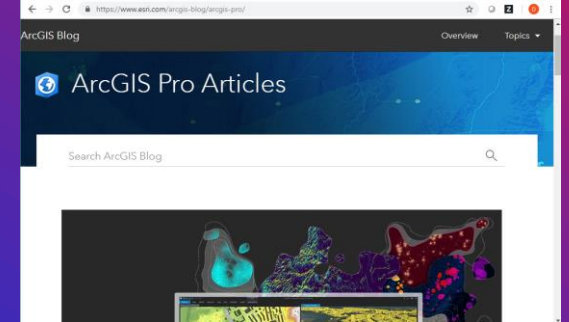
Training Classes & Videos



Guides: Terminology, Migration



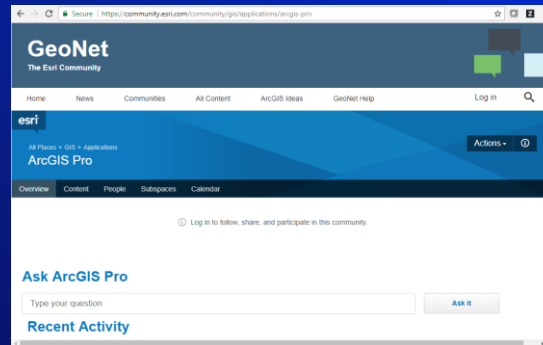
Learn.ArcGIS.com



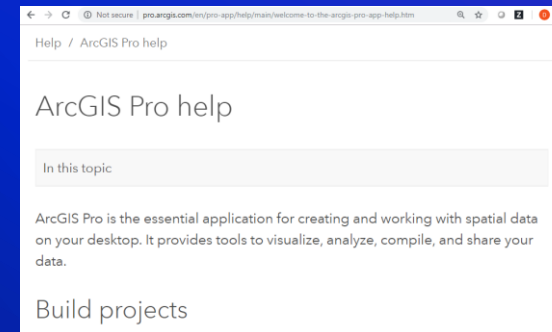
Blogs



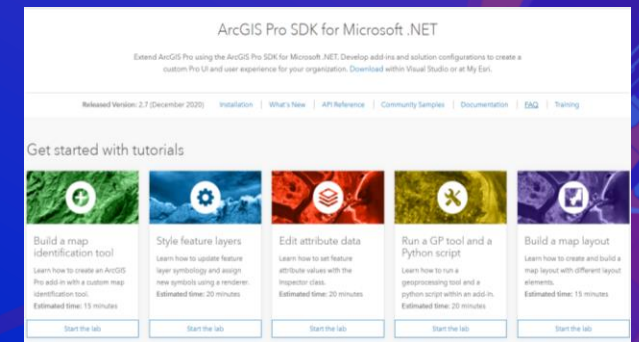
Books



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Developer Resources



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