



Lining Up Your Data in ArcGIS

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A stylized graphic of a globe, primarily blue and yellow, with a focus on the Northern Hemisphere. It features a prominent yellow band around the equator and various blue and yellow lines representing latitude and longitude. The continents are visible in shades of blue and purple.

My data is everywhere else except...

Palm Springs Downtown Map Demo

A stylized graphic of a globe, primarily blue and yellow, with a focus on the Southern Hemisphere. It features a prominent yellow band around the equator and various blue and yellow lines representing latitude and longitude. The continents are visible in shades of blue and purple.



My data has unknown coordinate system



Palm Springs Downtown Map Demo



Filter and search for the predefined coordinate systems



Palm Springs Downtown Map Demo



What if my data is defined with incorrect coordinate system...



Palm Springs Downtown Map Demo



Missing transformation and how to select the right one



Palm Springs Downtown Map Demo



Selecting the right projected coordinate system for my map



Palm Springs Downtown Map Demo



Creating a custom projected coordinate system for my map

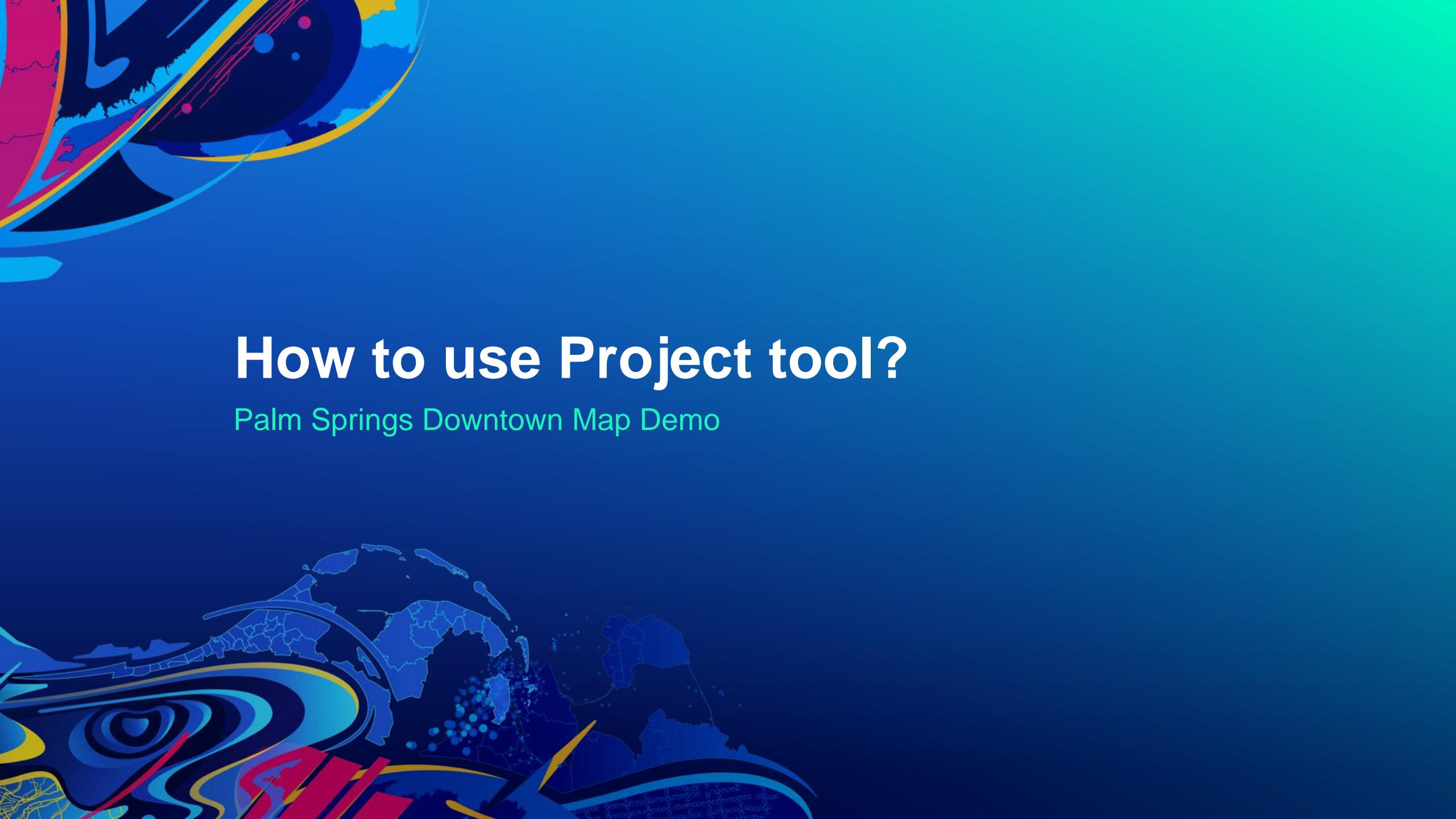


Palm Springs Downtown Map Demo



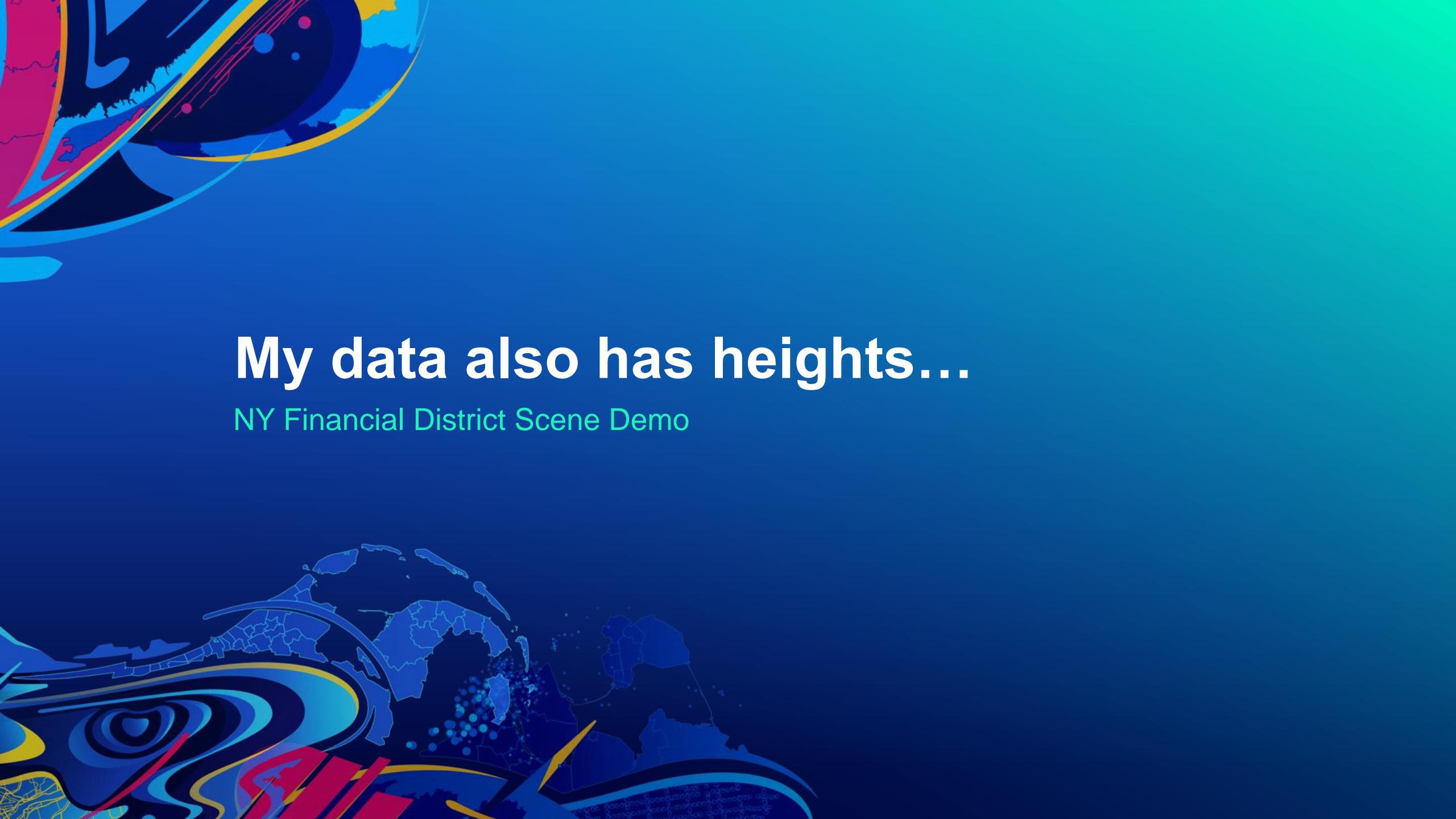
**I don't know which projection and
what parameter values I should use**

Palm Springs Downtown Map Demo



How to use Project tool?

Palm Springs Downtown Map Demo



My data also has heights...

NY Financial District Scene Demo



Selecting a vertical coordinate system for the scene



NY Financial District Scene Demo

Transforming vertical data

NY Financial District Scene Demo

ArcGIS Coordinate Systems Data

The image shows two screenshots of the ArcGIS website. The left screenshot is a search results page for 'coordinate systems' with a sidebar for 'Access to Coordinate Systems' and a 'Data and Content' link highlighted with a red arrow and a circled '3'. The right screenshot shows the 'Downloads' section of the 'My Esri' profile, with the 'Downloads' tab highlighted with a red arrow and a circled '1'. A red arrow with a circled '2' points from the left screenshot to the right one, indicating the connection between the search results and the download location.

Product Components

- Data and Content 3
- Apps
- Database Support Files
- Developer Tools
- Language Packs

Media

- Download ISO Files
- Request Media

Access to Coordinate Systems

Navigate to MyEsri
Select My Organizations
Downloads
Data and Content

Language: English

Select the items below that you want to download.

coordinate systems X Sort By: Files ▾

Item	Version	File Size	Download
ArcGIS Coordinate Systems Data ArcGIS Pro	2.1	920.81 MB	Download
ArcGIS Coordinate Systems Data ArcGIS Desktop	10.6	920.81 MB	Download
ArcGIS Coordinate Systems Data ArcGIS Desktop	10.5	903.16 MB	Download
ArcGIS Coordinate Systems Data ArcGIS Desktop	10.5.1	902.99 MB	Download
ArcGIS Coordinate Systems Data ArcGIS Enterprise (Windows)	10.5	903.16 MB	Download
ArcGIS Coordinate Systems Data ArcGIS Enterprise (Windows)	10.5.1	902.99 MB	Download
ArcGIS Coordinate Systems Data ArcGIS Enterprise (Windows)	10.6	920.81 MB	Download

My Esri

Dashboard My Profile My Organizations ?

Overview Transactions Licensing Downloads 1

Downloads 2

Files ▾ Product ▾ Version ▾

ArcGIS Coordinate Systems Data

- 2 GB additional data install
- GEOCON / NADCON 5 (US)
- NTv2 (AU, BE, CA, IS, NL, ES, CH, UK)
- NADCON (SK)
- VERTCON (US)
- Geoids (AU, JP, NZ, SI, CH, US)
- EGM2018 (world)

Geographic Transformations

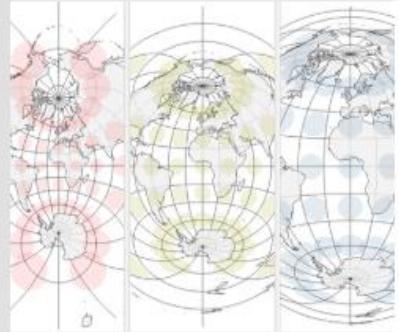
Vertical Transformations

Resources

- ArcGIS Pro and ArcGIS Desktop Online Documentation
<https://esriurl.com/ArcGISPro-coordinate-systems-and-projections>
<https://esriurl.com/ArcGIS-desktop-coordinate-systems-and-projections>
- Don't forget the Knowledge Base / Technical Articles!
<http://esriurl.com/11518>
- Map Projections Learning Path
<https://learn.arcgis.com/en/paths/map-projections>
- Make a Web Map without Web Mercator Lesson
<https://learn.arcgis.com/en/projects/make-a-web-map-without-web-mercator>

Map projections

Explore different ways to project the round earth onto a flat map.



Choose the right projection

Learn some tips for choosing an appropriate projected coordinate system for your map.

1 hr

Lesson

1



Earth peel

Illustrate map projections by peeling a digital orange in ArcGIS Pro.

10 min

Article

English Only

2

Mercator, it's not hip to be square

The purpose and problems of the Mercator projection and some methods for replacing it in web maps.

30 min

Article

English Only



3

<https://learn.arcgis.com/en/paths/map-projections>

Make a web map without Web Mercator

Make web maps with projections other than Web Mercator. Build and publish vector tiles from ArcGIS Pro to make a basemap in a chosen projected coordinate system.

Duration
50mins

Mapping Education

As a GIS consultant in Bogotá, Colombia, you make web maps for clients, all with different needs. You have two upcoming projects that require you to make web maps with specific projections—not the default of Web Mercator.

In this lesson, you'll learn how to change the projection of a web map by changing the basemap. You'll also learn how to make your own basemap in ArcGIS Pro with a coordinate system of your choice, which you can then use to build projected web maps.

[View final result](#)

Requirements

- Publisher or Administrator role in an ArcGIS organization (get a [free trial](#))
- ArcGIS Pro (get a [free trial](#))

Lesson Plan

[Make an equal-area web map](#)

Choose a projected basemap

10 minutes

[Make a custom basemap](#)

Build a custom basemap in ArcGIS Pro with a projection of your choice

25 minutes

<https://learn.arcgis.com/en/projects/make-a-web-map-without-web-mercator>

[master](#)[1 branch](#)[6 tags](#)[Go to file](#)[Add file](#)[Code](#)[README.md](#)

Esri Projection Engine Database Documentation

The Esri Projection Engine (PE) libraries deal with coordinate reference systems and their projections and transformations, as well as providing many support functions such as calculating distances and areas, converting between lat/lon notations, importing/exporting objects from/to well-known text (WKT) strings, converting from/to well-known ID (WKID) values, etc.

To perform WKID conversion, the PE contains a comprehensive database of known coordinate systems, datums, ellipsoids, units, etc. This database is regularly updated and kept in sync with the EPSG database.

This documentation is based on ArcGIS Desktop version 10.8.1 (ArcGIS Pro version 2.6). Entries taken from EPSG are from the 9.8.6 version of the EPSG database.

Contents

Documentation files are found in the following directories:

Directory	Contents	Filenames
src	projection-engine-db	projection-engine-db.h

<https://github.com/Esri/projection-engine-db-doc>

About

This repository documents the contents of the Projection Engine factory database and describes how to add user-provided entries to it.

[Readme](#)[Apache-2.0 License](#)

Releases

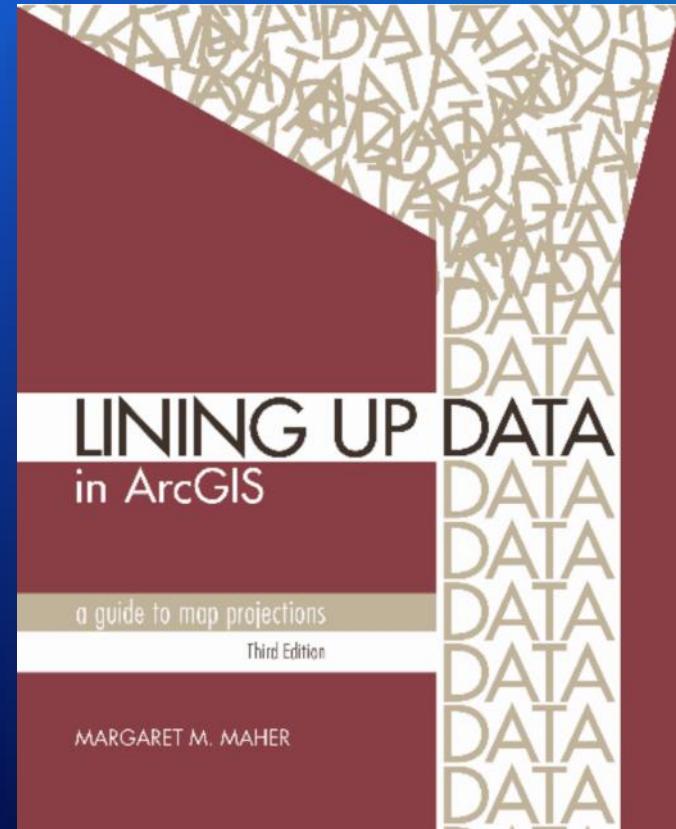
[6 tags](#)[Create a new release](#)

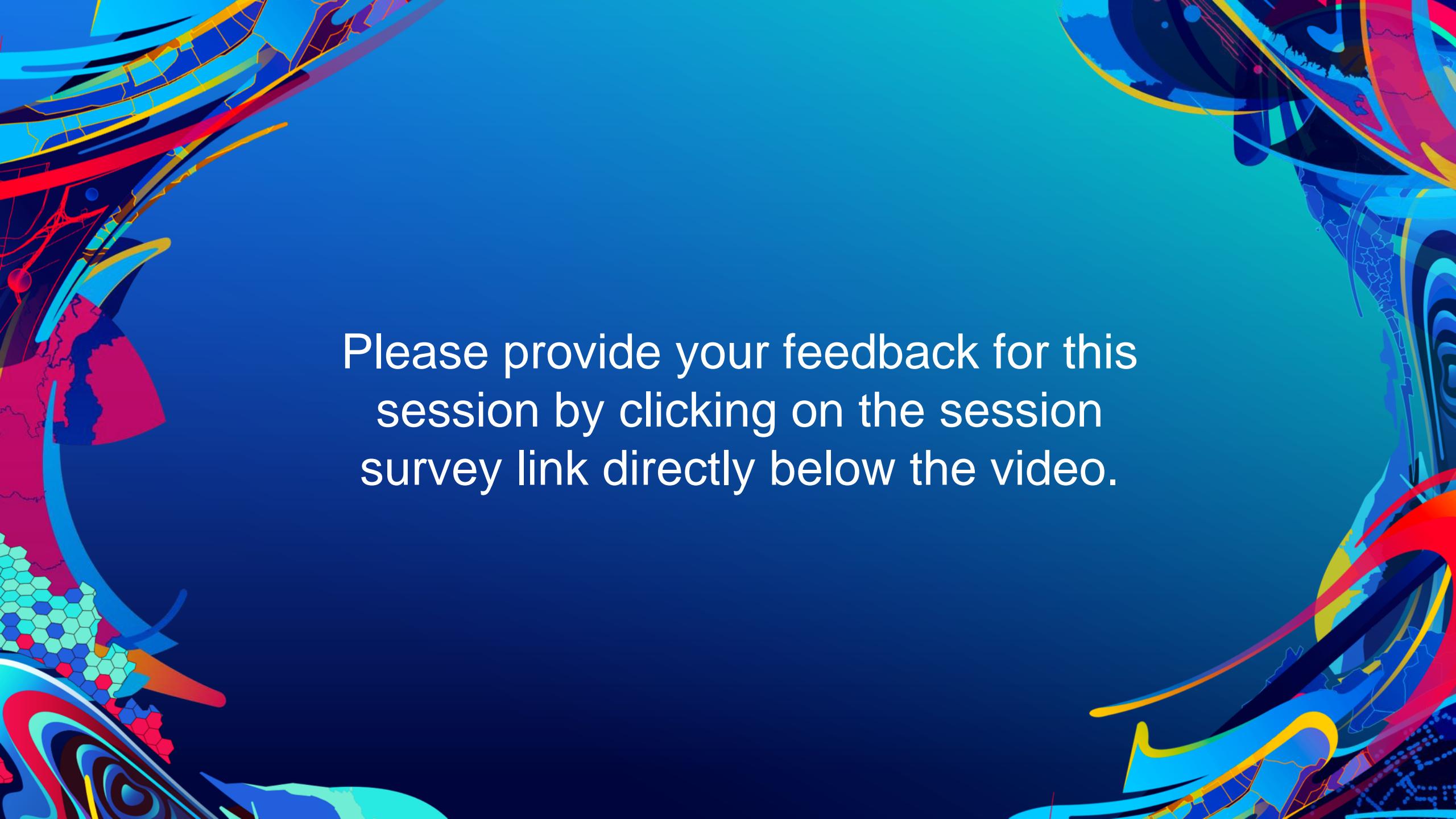
Packages

No packages published
[Publish your first package](#)

Resources

- Esri Projection Engine Database Documentation
<https://github.com/Esri/projection-engine-db-doc>
- EPSG Geodetic Parameter Dataset (epsg.org)
 - *Database of coordinate systems & transformations*
 - *Check Guidance Note 7-2 for formulas*
- GeoNet Community for user-to-user help
<https://community.esri.com>
- Lining Up Data in ArcGIS: A Guide to Map Projections
by Margaret M. Maher





Please provide your feedback for this session by clicking on the session survey link directly below the video.



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