



# ArcGIS Enterprise: Sharing and Collaboration

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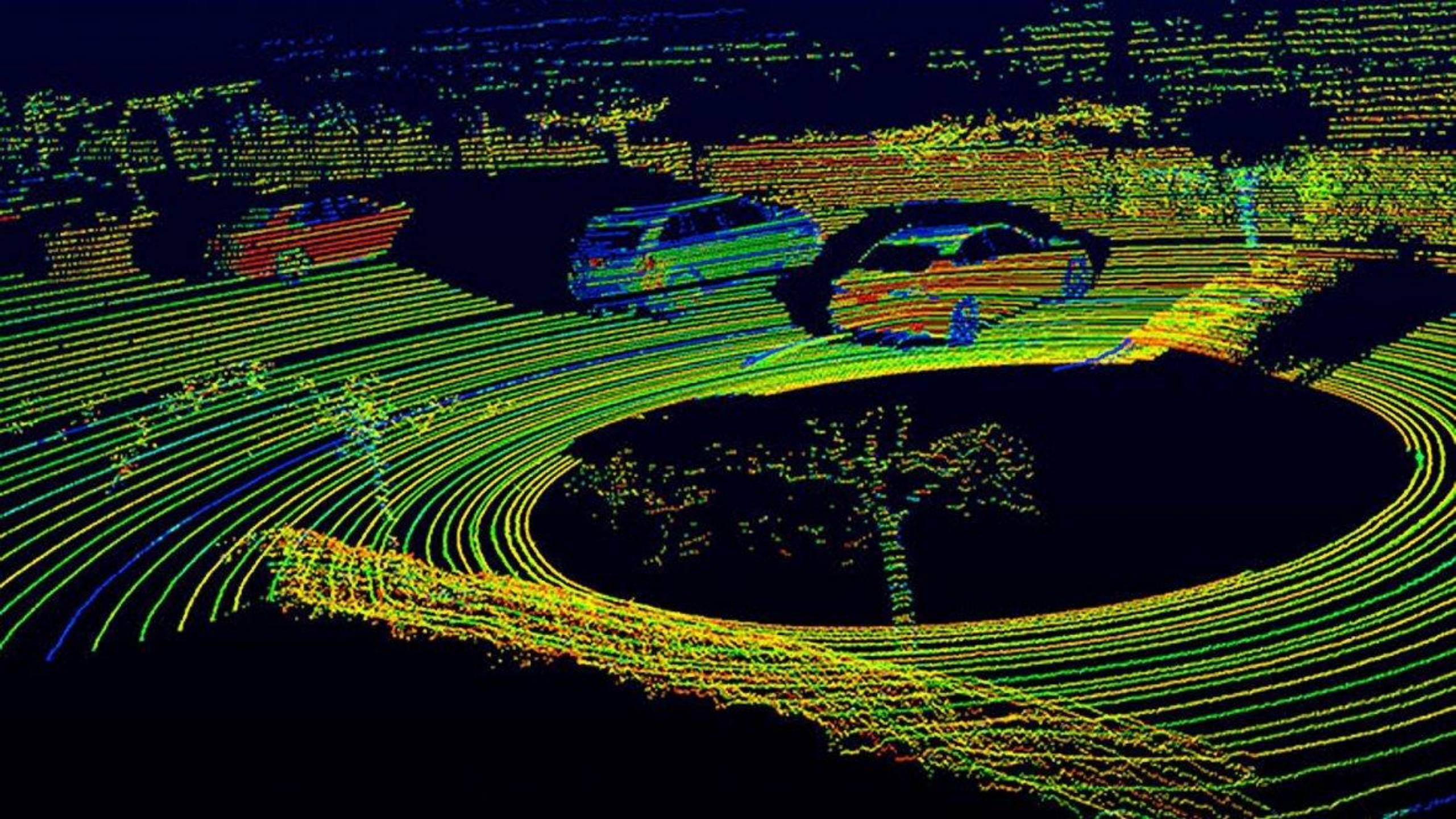
2018 Esri Mid-Atlantic User Conference

**GIS  
INSPIRING  
WHAT'S  
NEXT**

What is modern GIS?









# On the Front Lines of Famine

In parts of Africa and the Middle East, conflict and drought are driving a food crisis of unprecedented scale



What is modern GIS?

**GIS that is interactive, accessible, that helps you explore questions, solve problems, find answers, and that works with many kinds of data.**

**It is GIS you can share.**



# Technology

What parts of ArcGIS do you use

ArcGIS  
Enterprise



ArcGIS  
Pro



ArcGIS  
Online





Scenarios

**How might sharing work within your organization?**

# Where does sharing start?

ArcGIS Enterprise as a system of record, ArcGIS Online as the system of engagement



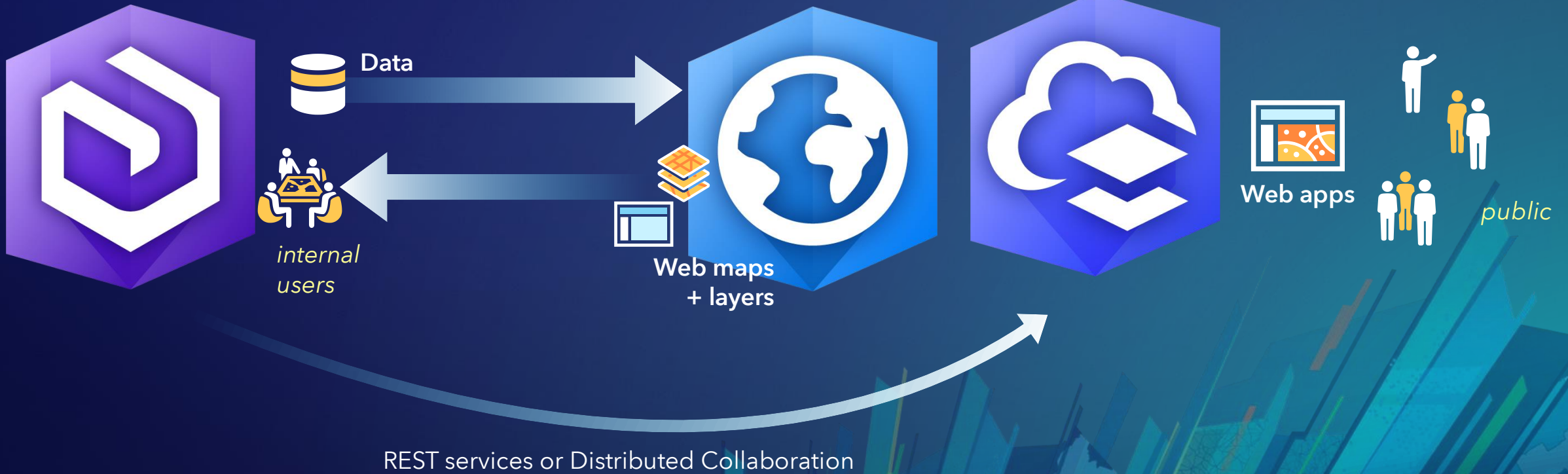
# Where does sharing start?

Supporting internal and external stakeholders

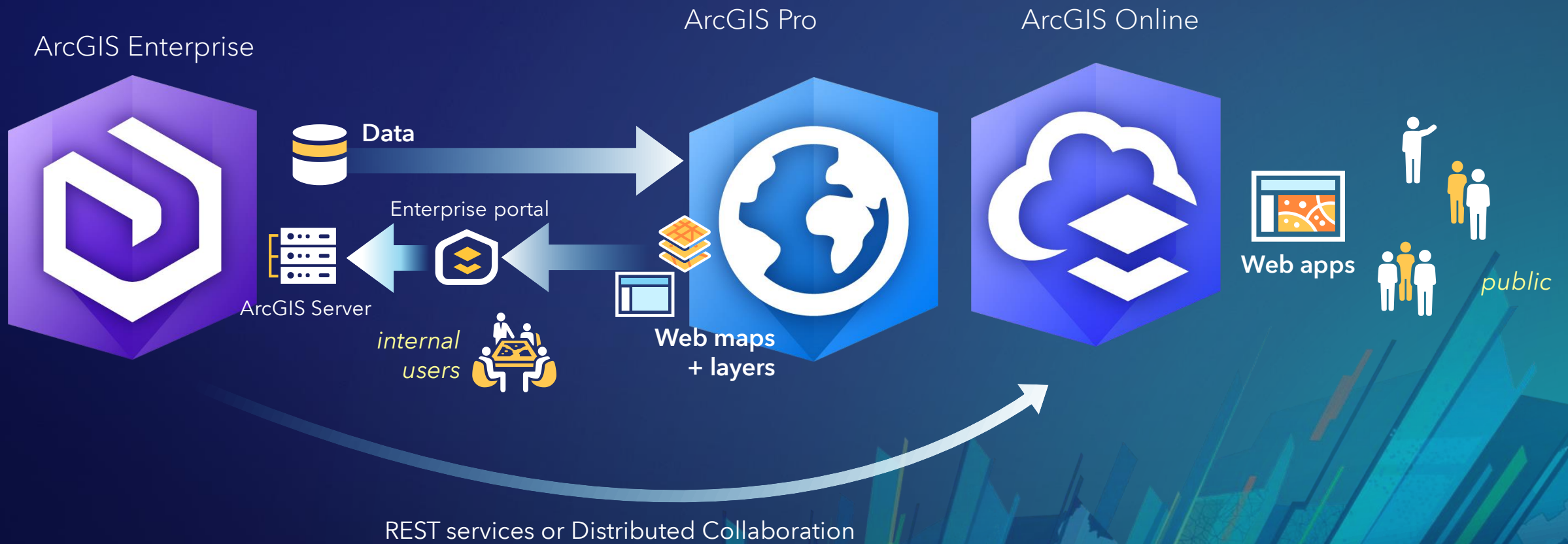
ArcGIS Enterprise

ArcGIS Pro

ArcGIS Online



# Where does sharing start?



# Where does sharing start?

And many more

ArcGIS Enterprise

ArcGIS Pro

ArcGIS Online



## Web GIS

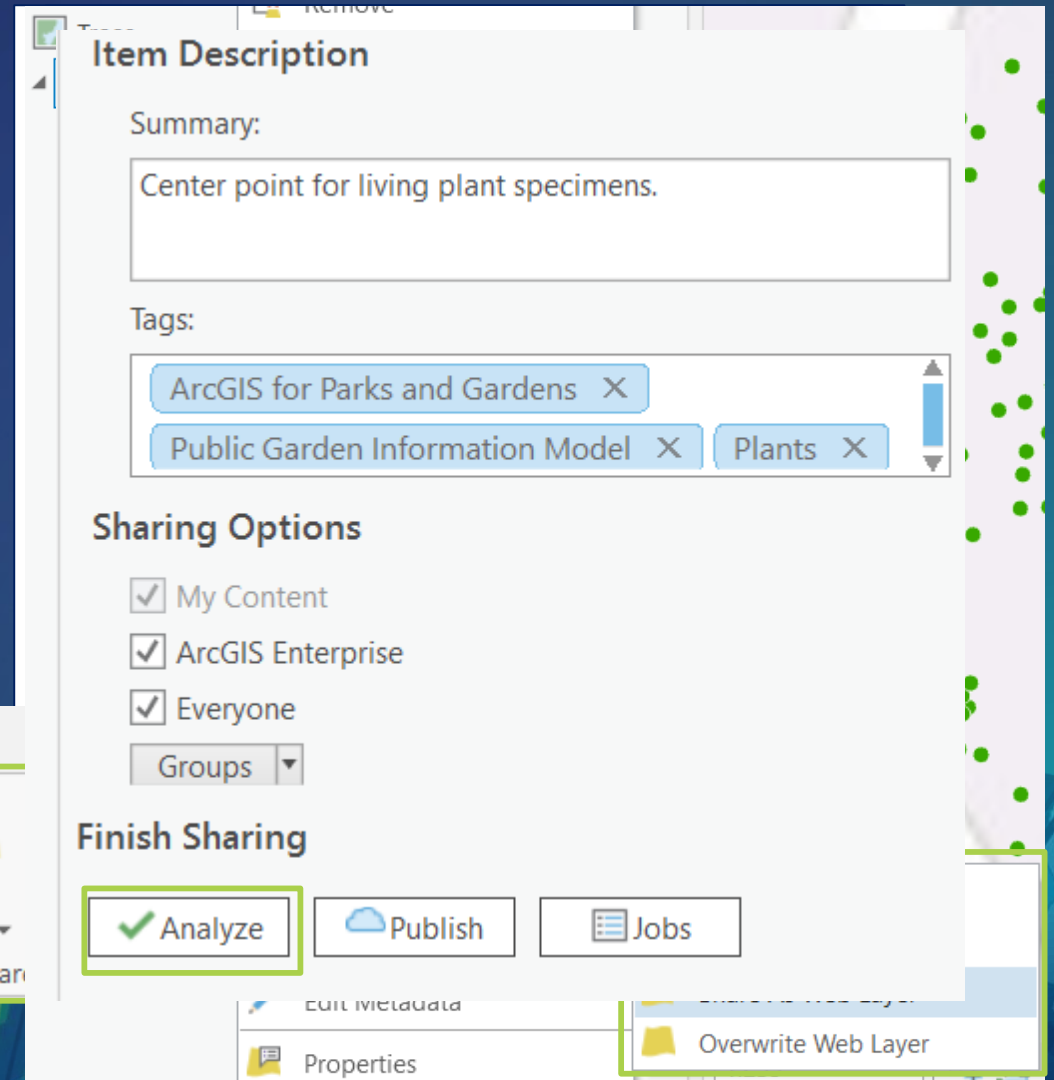
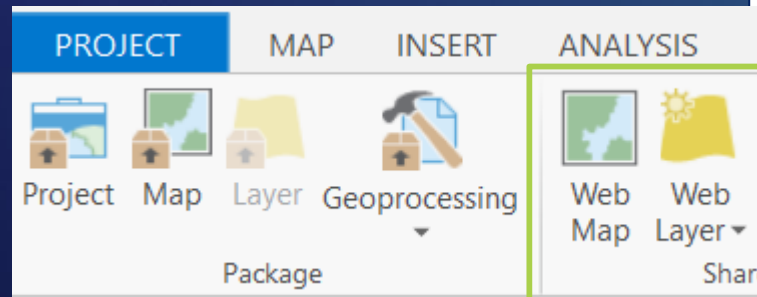
ArcGIS Pro + ArcGIS Enterprise and/or ArcGIS Online = a modern GIS

The background features a complex, layered composition of colorful geometric shapes and map elements. On the left, there are various colored rectangles and lines in shades of blue, green, orange, and red, some overlapping each other. In the center, a map of a city street grid is visible, with several pink circular markers placed on the streets. The overall aesthetic is modern and technical, typical of a GIS-related presentation.

# Sharing from ArcGIS Pro Demo

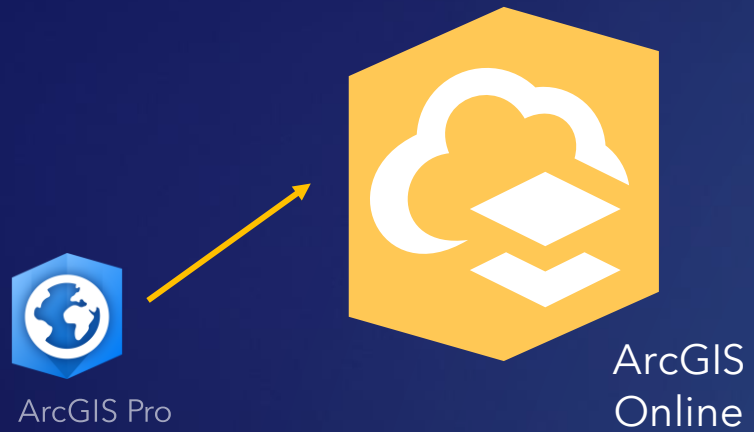
# ArcGIS Pro – Sharing User Experience

1. Sign into a portal
2. Share from:
  - i. The ribbon to share your entire map
  - ii. The context menu to share a selection of layers
3. Analyze your data for potential issues
4. Click Share/Publish



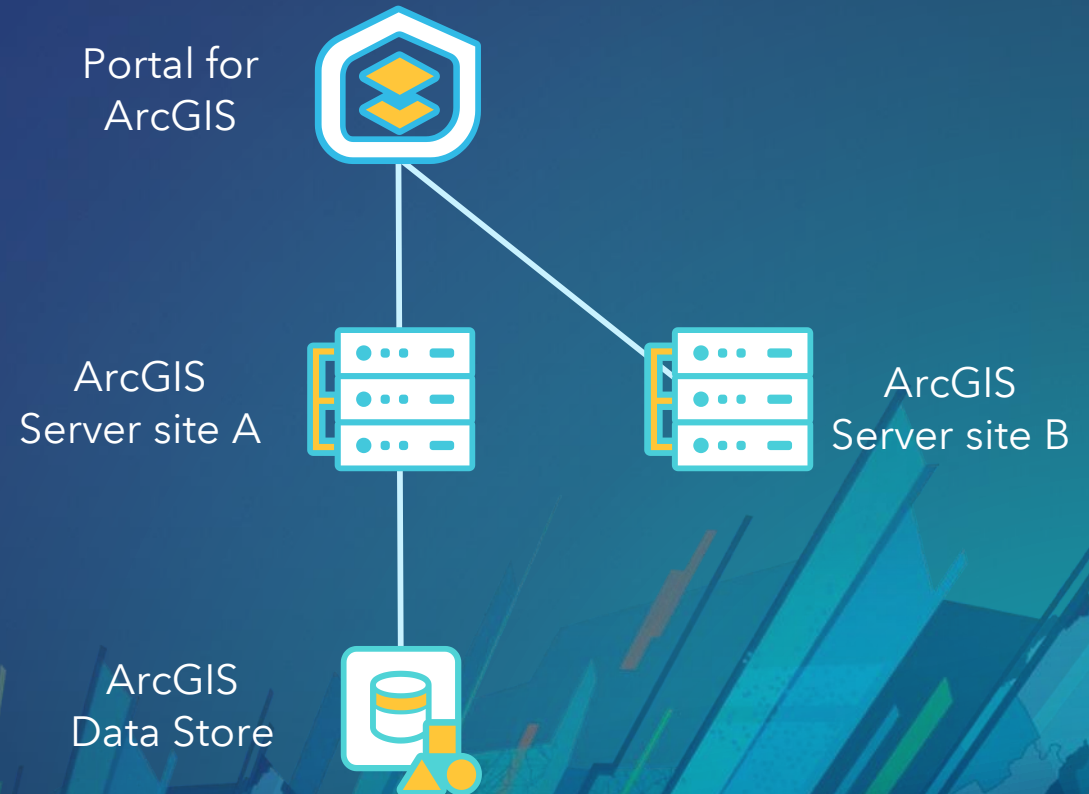


# Sharing from ArcGIS Pro



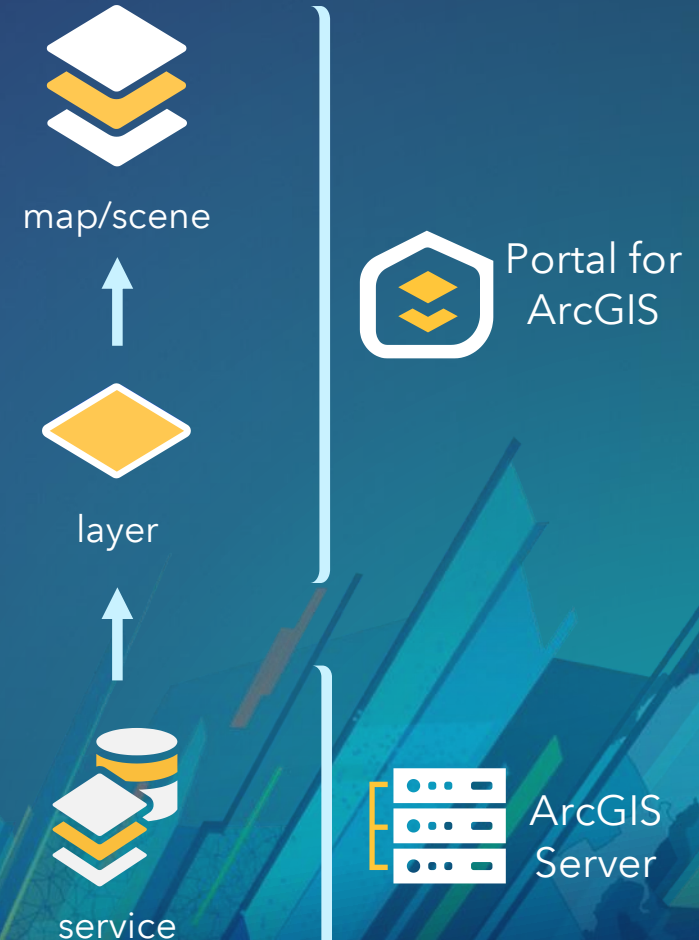
# Concept Review: Base Deployment and Federated Servers

- **ArcGIS Enterprise Base Deployment**
  - Consists of a federated Server site
  - ArcGIS Data Store has been registered with the Server site as the registered managed database
  - The Server site is designated as hosting server
- Some organizations may also have additional Server sites that are federated with Portal
- When Sharing from ArcGIS Pro, you decide which federated Server you want to share content to



# How Web maps, Layers, and Services Work Together

- **Web map (2D) or Web scene (3D)**
  - Collection of web layers and mapping functionality
- **Web Layer**
  - portal content that exposes a service
  - References a service and can configure attribute pop-ups, symbology, etc.
- **Web Service**
  - Exposes a URL for web clients to access data
  - Data can be copied to the server or referenced from a shared location or enterprise geodatabase



# Web Layer and Web Service Terminology



Enterprise  
portal



ArcGIS  
Server

Web Layer	Web Service
Map Image Layer	Dynamic/Cached map service
Feature Layer	Feature service
Tile Layer	Cached map service (hosted)
Vector Tile Layer	Vector tile service
Scene Layer	Cached scene service
Web Tool	Geoprocessing service



# Sharing web layers

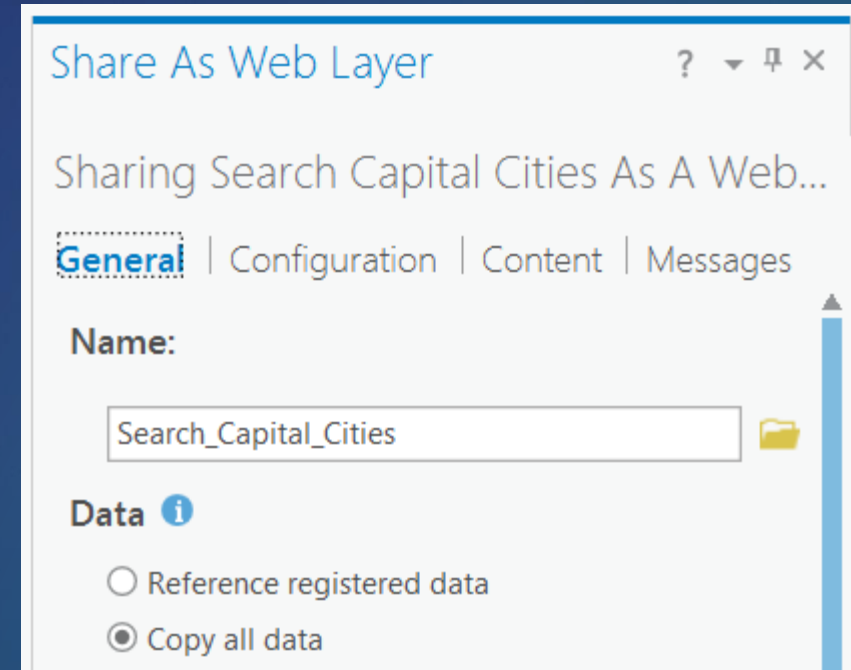
Demo

# Data

What happens to your data when you share with ArcGIS Pro?

# Sharing Data Options

1. **Reference registered data**
  - Registered data will be referenced, unregistered data will be copied
2. **Copy all data**
  - Both registered and unregistered data will be copied



# Working with Registered Data

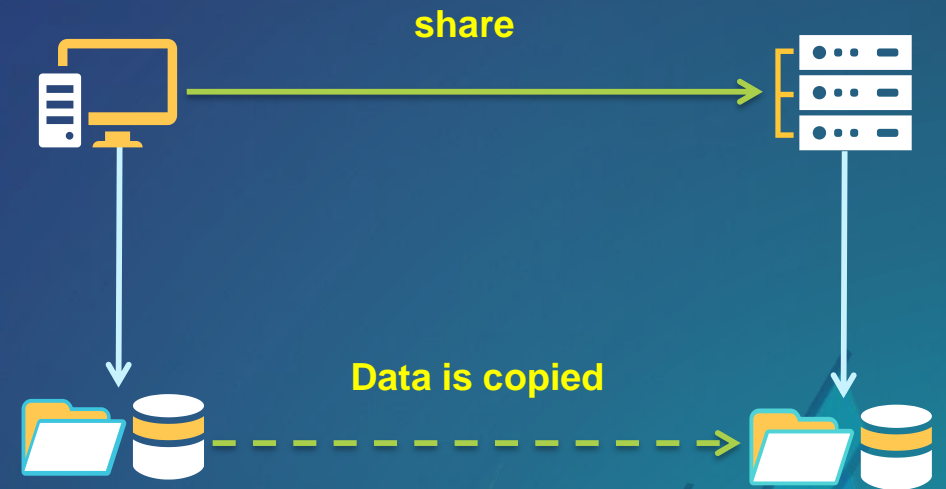
- **Designed to support enterprise editing workflows**
- **Data sources are registered with the federated server**
- **Source data is referenced, not copied**





## Working with Unregistered Data

- Source data is copied to the server machine
- Does not support enterprise data updates
- Maintains a static copy of your data
- *Copy all data* option in ArcGIS Pro
  - All source data is treated as unregistered data



# Understanding Data Stores

- **Data store items**

- Locations registered with the server that contains data used by services
- OS account that ArcGIS Server is running as has read/write access

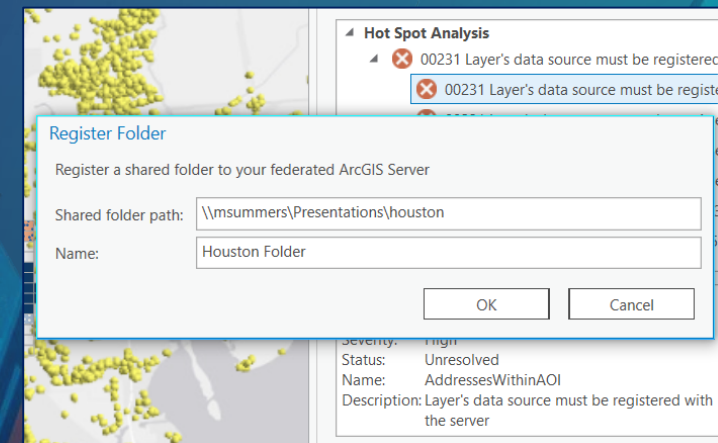
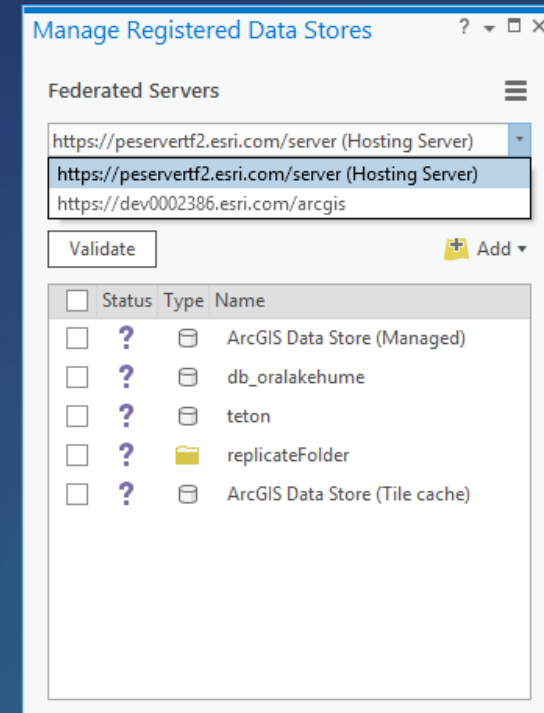
- **ArcGIS Data Store**

- Part of the base ArcGIS Enterprise deployment
- Database is managed by the server
- Used to store data copied to the server for hosted services, and data that is the result of analysis run within the Enterprise portal



# Data stores

- Valid data source locations accessible by server
  1. Databases
  2. Folders
- 2 ways to define
  1. Ahead of time:
    - Manage Registered Data Stores
    - ArcGIS Server Manager
  2. While sharing: Resolve analyzers



An abstract graphic on the left side of the slide. It features a dark blue background with a complex arrangement of overlapping, semi-transparent rectangular shapes in various colors including teal, light blue, orange, red, and purple. In the center of this graphic, there is a small, semi-transparent map fragment showing a street grid and several pink circular markers.

# Managing Registered Data Stores

Demo

## Overwriting web layers

- **Map image layers and feature layers can be overwritten**
- **When overwriting, both the web layer and underlying service are updated**
  - Service URL does not change
  - Item ID does not change
- **If a service has additional layers and capabilities (i.e. a map service with feature access), overwrite the map image layer**


## New Module – arcpy.sharing

- **Designed to be more efficient, intuitive, and follow future enhancements**
- **Map image, feature, and tile layers are split**
- **Common parameters are exposed as properties**
  - **Overwrite existing service**
  - **Portal folder and server folder**
- **Arcpy.mp workflow is still supported**

# Arcpy.sharing workflow

1. Create a map object using `arcpy.mp`
2. Create a draft of the map or specific layers using the `getWebLayerSharingDraft` function
  - `FeatureSharingDraft`
  - `TileSharingDraft`
  - `MapImageSharingDraft`

Depends on the `service_type` parameter


3. Export the draft as a service definition draft using the `exportToSDDraft` function
4. Stage using `arcpy.StageService_server`
5. Upload using `arcpy.UploadServiceDefinition_server`

# Sharing Web maps

- **Preset configurations make one click sharing of new web layers easy and accessible**
- **Map level settings, such as bookmarks, are automatically maintained**
- **For more control, new web layers can be split and configured individually or shared beforehand**

Share As Web Map

Search\_Capital\_Cities

Map | Configuration

Name: Search\_Capital\_Cities

Item Description

Summary: Dev Summit 2017 US Cities

Tags: Dev Summit 2017

Sharing Options

My Content  
 Dinoco  
 Everyone  
Groups

Select a Configuration

Copy all data: Exploratory

Copy all data

Exploratory  
Interactive map supporting queries

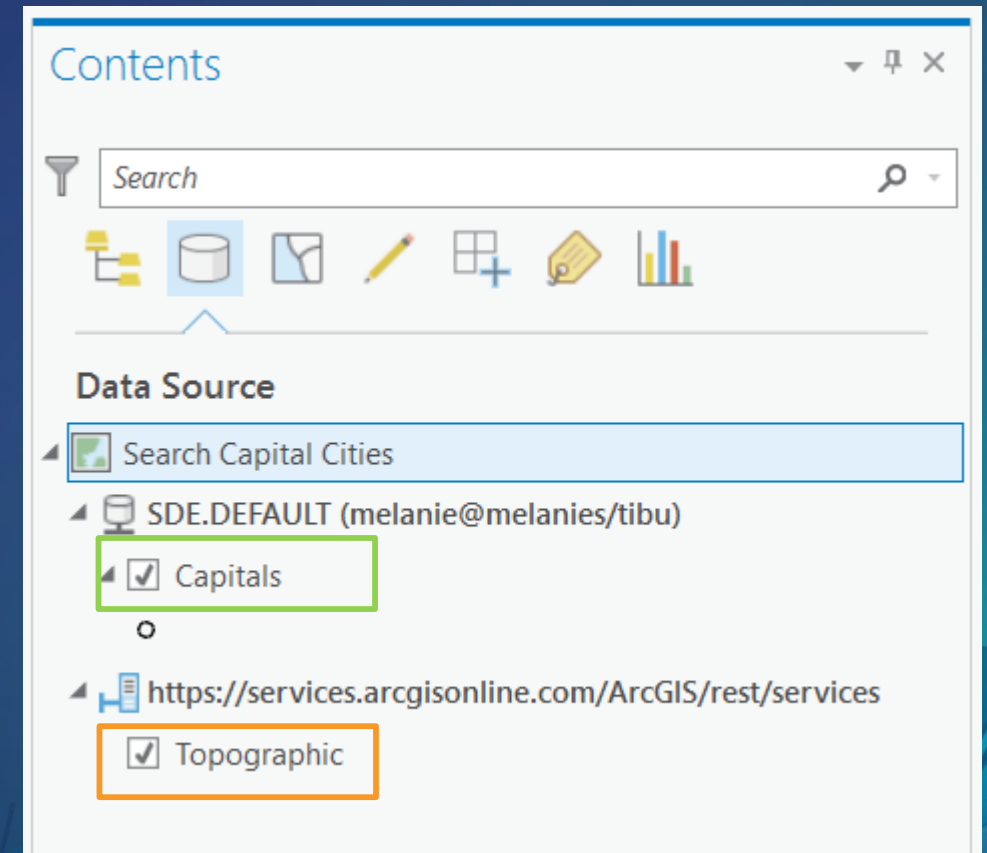
Editable  
An exploratory map with editing enabled

Visualization  
Fast rendering map using pre-generated tiles



# Web maps and existing web layers

- Existing web layers are referenced in the Web map
  - Any modified settings are stored in the map; not at the web layer or service
  - Sharing settings will NOT be updated to match the Web map
- If the map contains existing web layers, they will not be “published” again





# Sharing a web map

Demo

# Sharing Web maps - One Click Configurations

Configuration	Description
Exploratory	Interactive map that supports querying <ul style="list-style-type: none"><li>• Reference - map image layers</li><li>• Copy - non-editable feature layers</li></ul>
Editing	Editable map <ul style="list-style-type: none"><li>• Reference - map image + feature layers</li><li>• Copy - editable feature layers</li></ul>
Visualization	Pre-generated tiles <ul style="list-style-type: none"><li>• Reference - cached map image layers</li><li>• Copy - tile layers</li></ul>

- Map layers unsupported by the primary web layer type will still be shared
  - EX: **Copy all data - editing** with raster data will share raster layers as web tile layers

## Sharing 3D Data

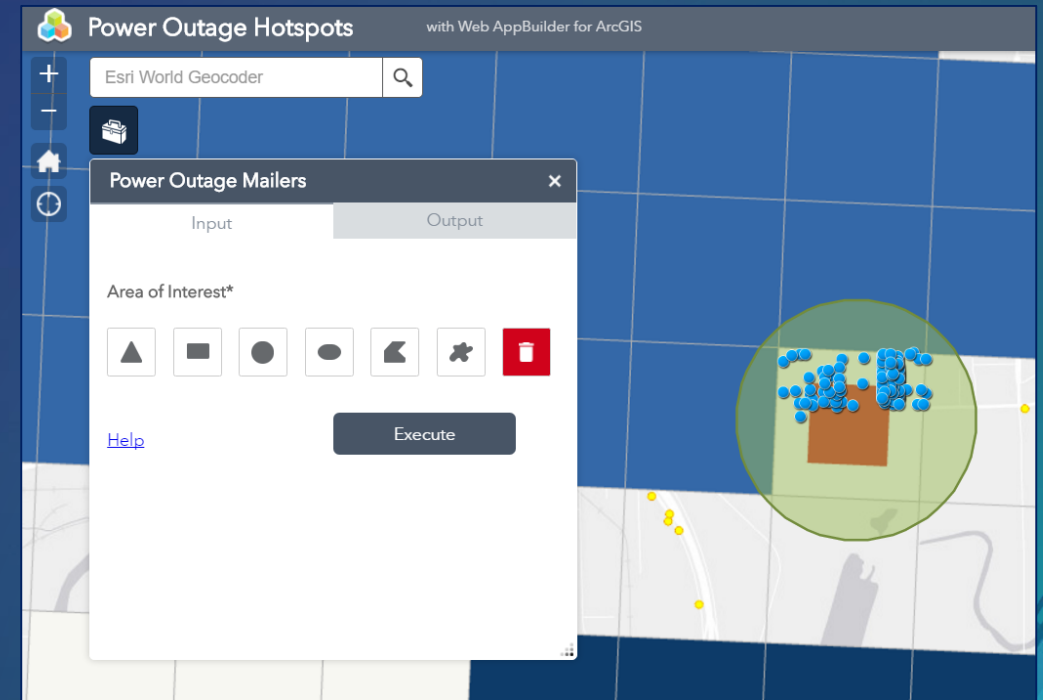
- GIS data is not siloed between 2D and 3D in ArcGIS Pro
- 3D layers and scenes are just as easy to share
- Supported 3D data types
  - Point layer
  - 3D object layer
  - Point cloud layer
  - Integrated mesh



Point cloud layer shared to Portal for ArcGIS

# Sharing web tools

- Portal item that exposes a geoprocessing (GP) service
- Can be used across the platform including ArcGIS Pro and through web clients such as Web AppBuilder for ArcGIS
- Shared from the history item of a successfully ran GP tool



Web tool added to a web application

# Questions





**esri**

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OF  
WHERE**