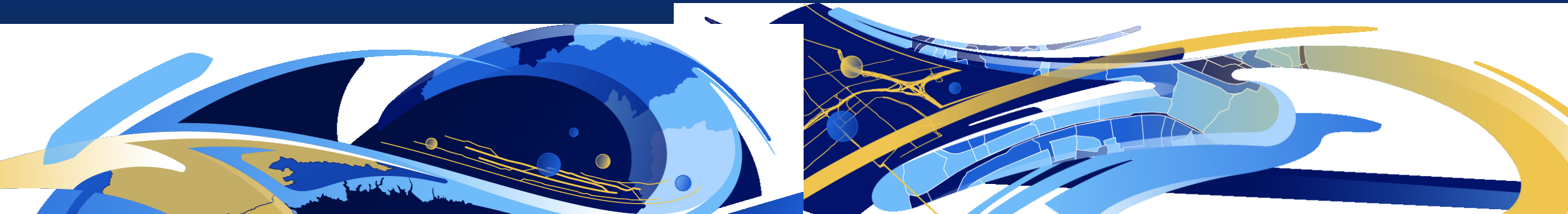


# “Hands-On” Parcel Fabric: Migrating and Administering Parcels

Christine Leslie

Amir Bar-Maor



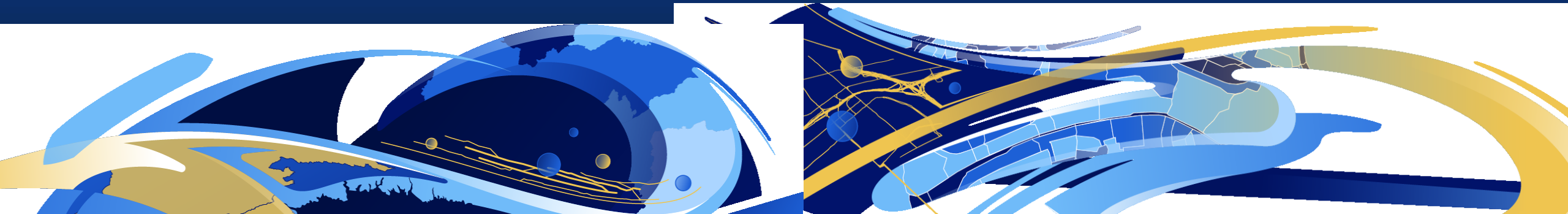
# Meetup Session overview

- **Parcel fabric in ArcGIS Pro**
- **Data migration:**
  - Step by step
  - Hands On
- **Upgrade a parcel fabric for ArcMap**
  - Step by step
  - Hands On
- **Enterprise deployment and publishing**
- **Project configuration**



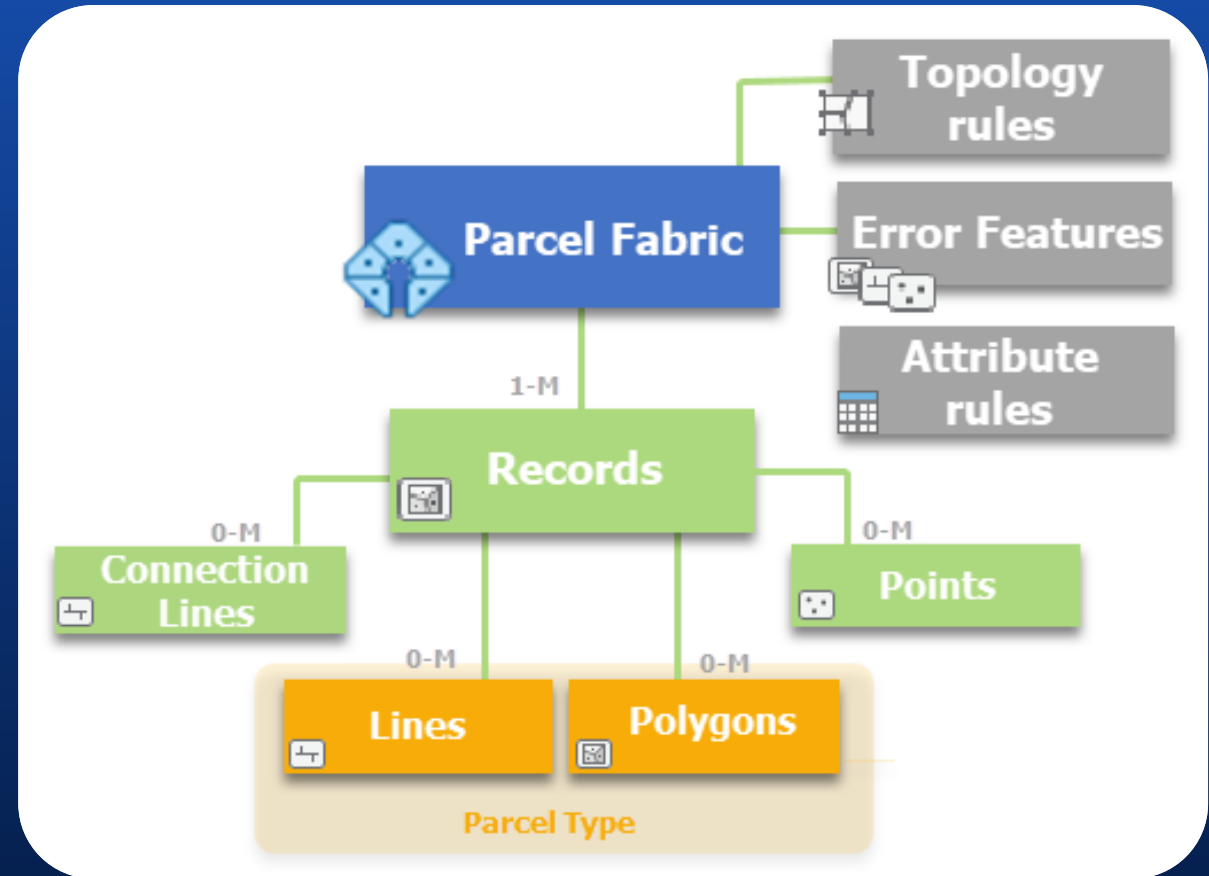
# The parcel fabric in ArcGIS Pro

Christine Leslie



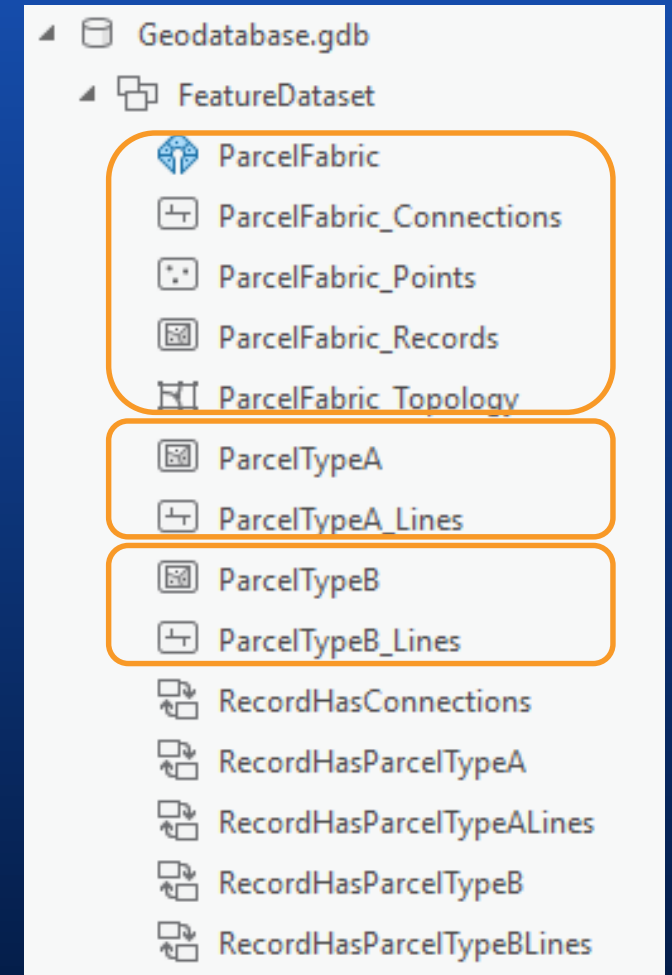
# Parcel fabric in ArcGIS Pro

- Simple data model
- Record-driven
  - Parcel features associated to parcel records
- Build-in quality management
  - Topology rules
  - Attribute rules
  - Error features



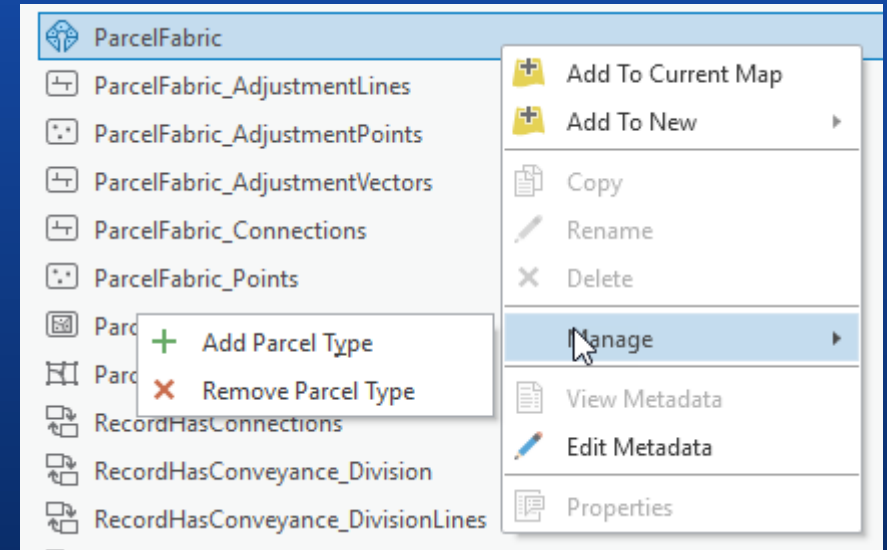
# What is a parcel fabric?

- Parcel fabric is a controller dataset
  - controls **simple feature classes** and topology
- Parcels are stored as parcel types
  - Each parcel type has its own polygons and lines
  - Defined by your organization
- Record driven workflows
  - Record polygon
  - Parcels associated to the record that created or retired them
- Configurable quality rules
  - Geodatabase topology rules
  - Attribute rules



# Parcel fabric feature classes

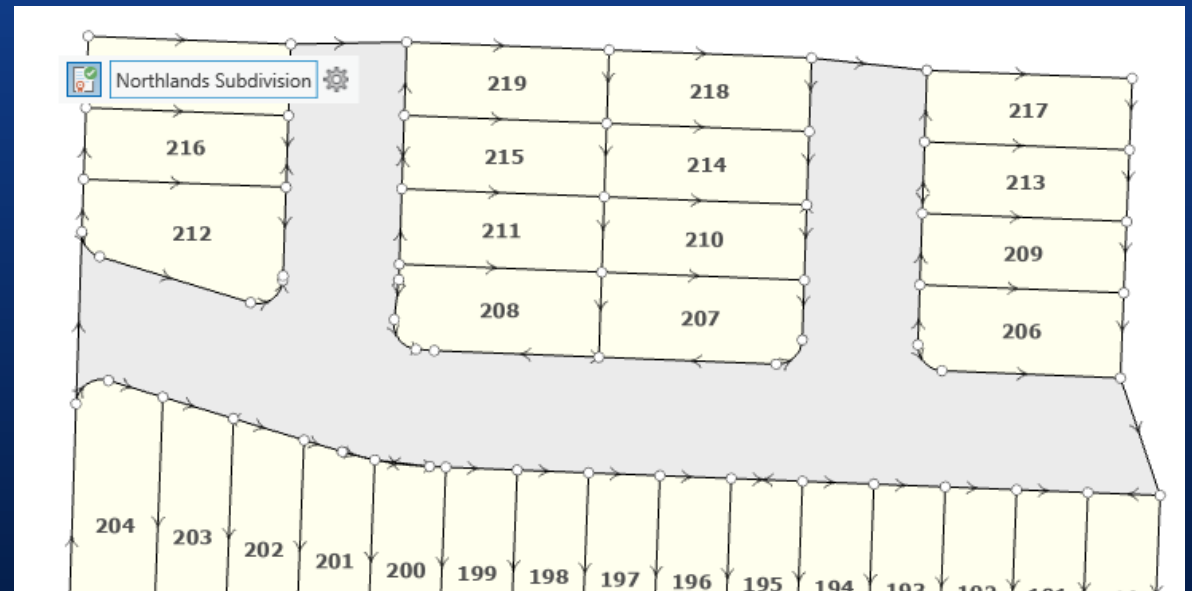
- Records
- Parcel type feature classes
  - parcel polygons
  - parcel lines
- Connection lines
- Points
- Errors
  - Topology
  - Attribute Rules
- Add the parcel fabric to the map to add all its associated layers



# Parcel fabric is a system of record

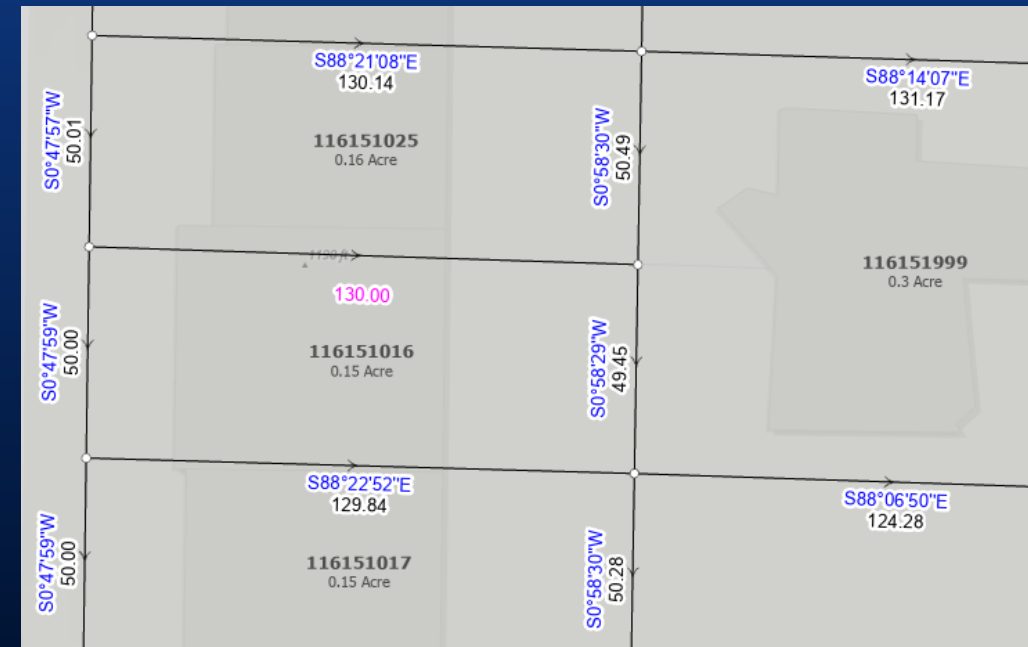
- Record-driven system
- Parcel features (points, lines, polygons) are associated to record
  - The record that created them
  - The record that retired them

| Attributes        | Geometry                               |
|-------------------|--|
| OBJECTID          | 18                                     |
| GlobalID          | {3AE22DD1-6209-49ED-89B3-711E9EDCF91D} |
| Name              | 123456789                              |
| Created By Record | {B4B9F17F-8CE4-415D-B92A-F7D62E459FCC} |
| Retired By Record | <Null>                                 |
| Stated Area       | 28                                     |
| Stated Area Unit  | Square Foot                            |
| Calculated Area   | <Null>                                 |



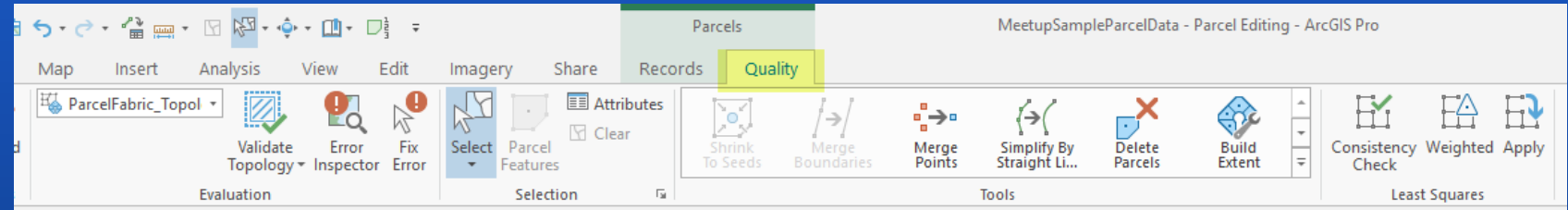
# Parcel fabric is a 'system of record'

- Lines can have COGO dimensions
  - Entered from record, generated from geometry or computed
  - Partial COGO is legitimate (COGO distance but null COGO direction)
  - Line dimensions (COGO) match geometry
- Within a parcel type, lines are not duplicated for parcels
  - unless described in the legal record
- One point on the ground → one point in the fabric

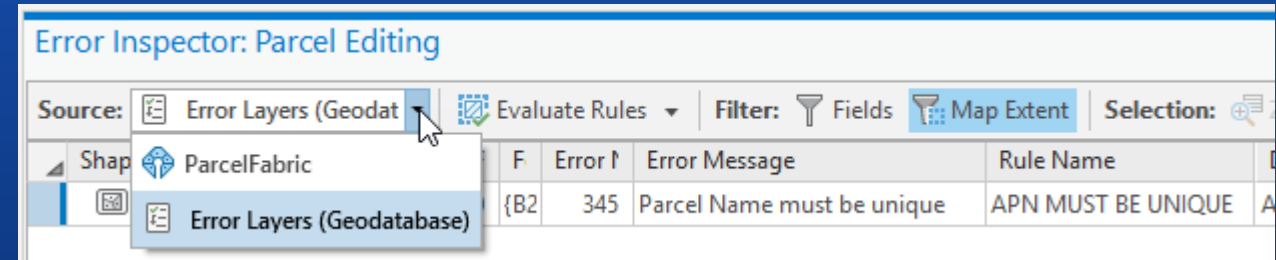






# Quality management



- What is a “good parcel”?
  - Subjective to your organization
- Configure parcel behavior
  - Use topology and attribute rules
  - For example, certain parcel types can overlap
- What types of rules?
  - Geometry: Topology engines & Attribute Rules
  - Attributes: Attribute rules
- Identify errors and incorrect behavior
  - ‘Validate’ the topology, ‘Evaluate’ attribute rules



# ArcMap parcel fabric vs ArcGIS Pro parcel fabric

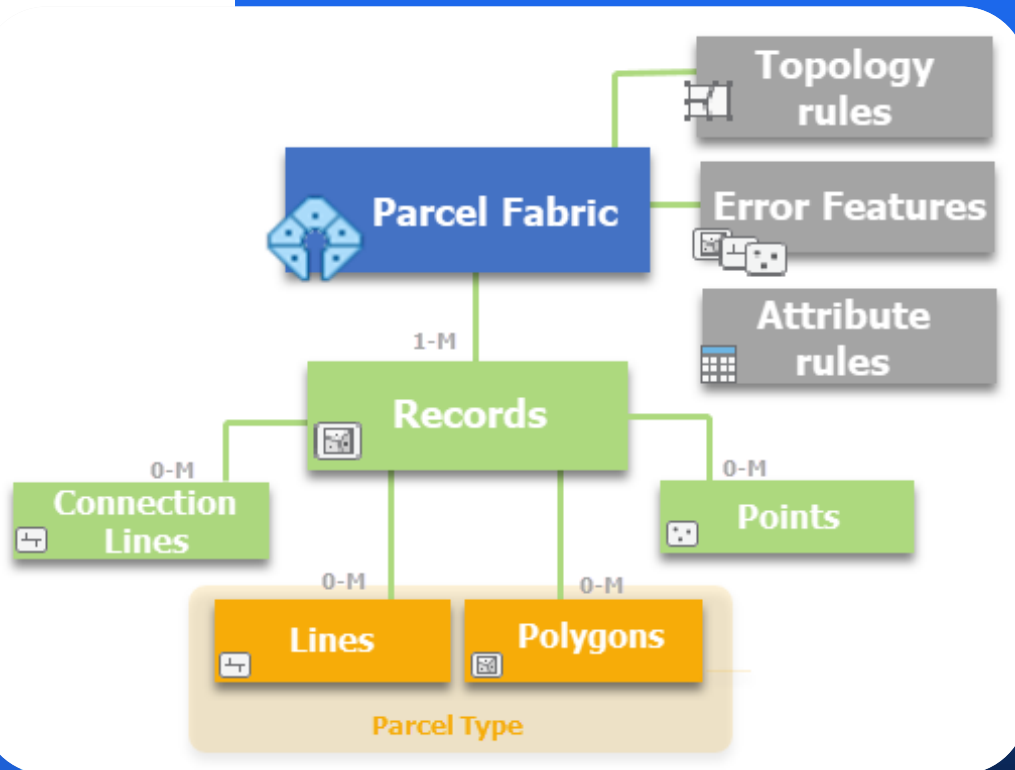
| ArcMap Parcel Fabric  | ArcGIS Pro Parcel Fabric  |
|--|--|
| Parcel types stored in one feature class   | Each parcel type has it's own schema   |
| Plans table (no geometry)  | Records feature class (record polygon)   |
| Points, control points, line points  | Points   |
| Connection lines are part of the parcel  | Connection lines in a separate feature class   |
| Every parcel 'owns' its lines  | Polygon, boundary lines, points are 'owned' by the legal record  |
| Check Fabric creates a text file   | Validate creates error features  |
| Unjoined, unclosed, construction parcels   | Deprecated   |



# ArcGIS Pro parcel fabric improvements

- Data is defensible
  - Associated to the record, editor tracking
- Simple feature classes
  - Easily extended, published
- Each parcel type has its own schema
  - Simplifies the TOC and the map display
- No hidden tables or hidden fields
- Use of Branch versioning
- Quality management engines: topology, attribute rules
- 3D enabled



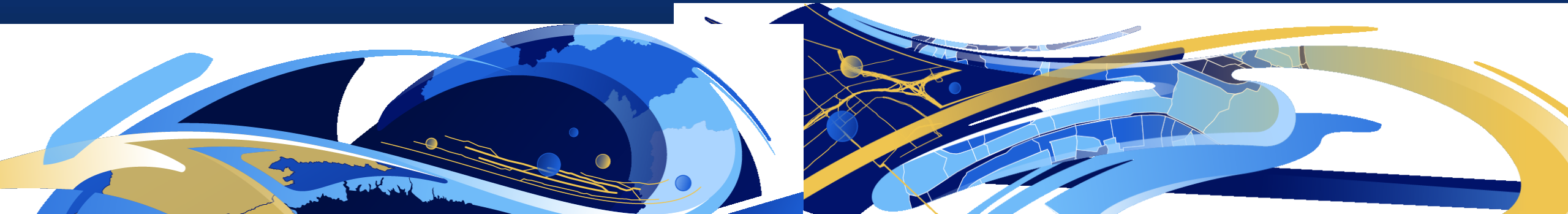


# Demo: Parcel fabric information model

Amir Bar-Maor

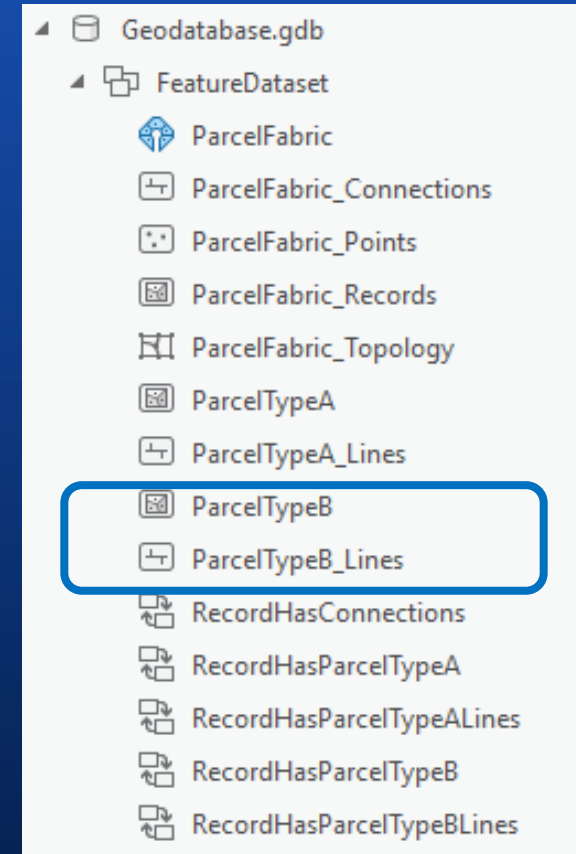
# What is a parcel?

Christine Leslie



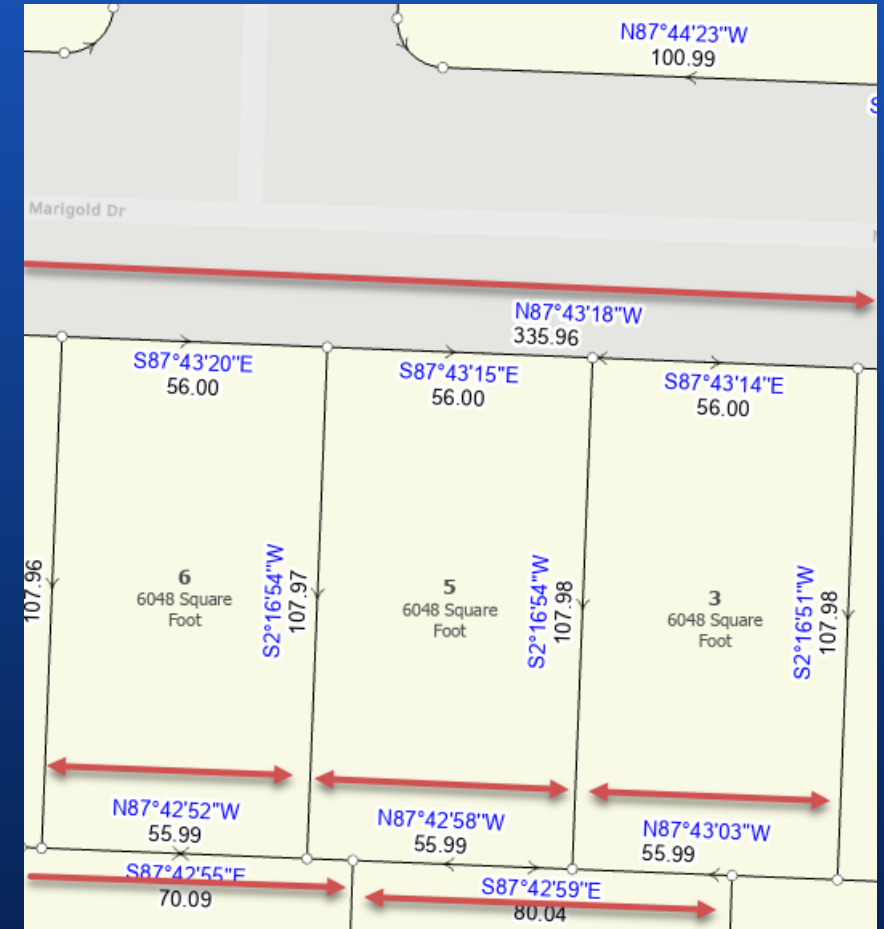
# Parcels

- Parcels are stored as parcel types
  - Add your own parcel types (Add Parcel Type geoprocessing tool)
- Separate polygon and line feature class for each type
- Each parcel type can have its own schema and rules



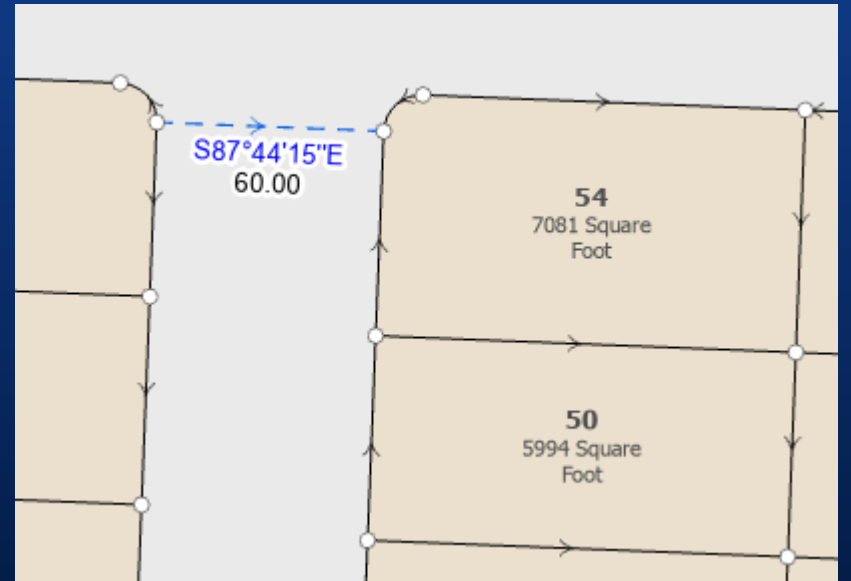
# Parcel lines

- Single line for adjacent boundaries
  - Matching geometry
  - Matching dimensions
  - Same parcel type
- Overlapping lines for adjacent boundaries
  - Boundaries aren't coincident
  - Coincident boundaries but record shows different dimensions
  - Different parcel types
- Administration boundaries
  - Large administration parcels, for example, county parcels



# Points and connection lines

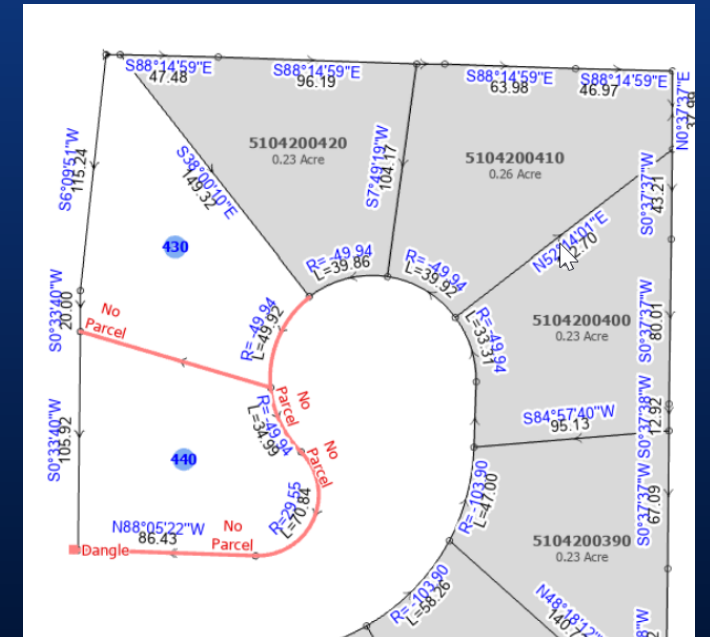
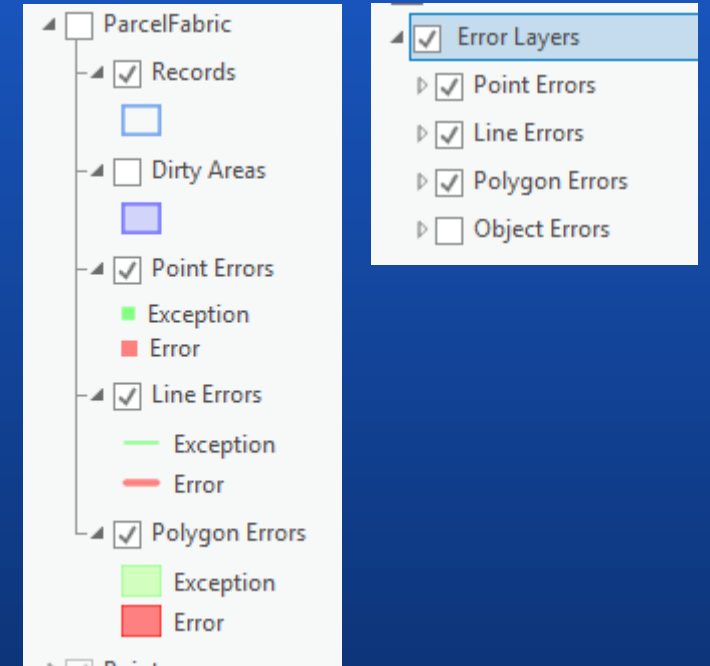
- Points are shared between parcels
  - Control points are used to *constrain* LSA
  - XYZ coordinates are optional
  - Point geometry can be held fixed
- Connection lines are used for non-boundary lines
  - Separate feature class
  - Right-of-way centerlines
  - Connections to control points

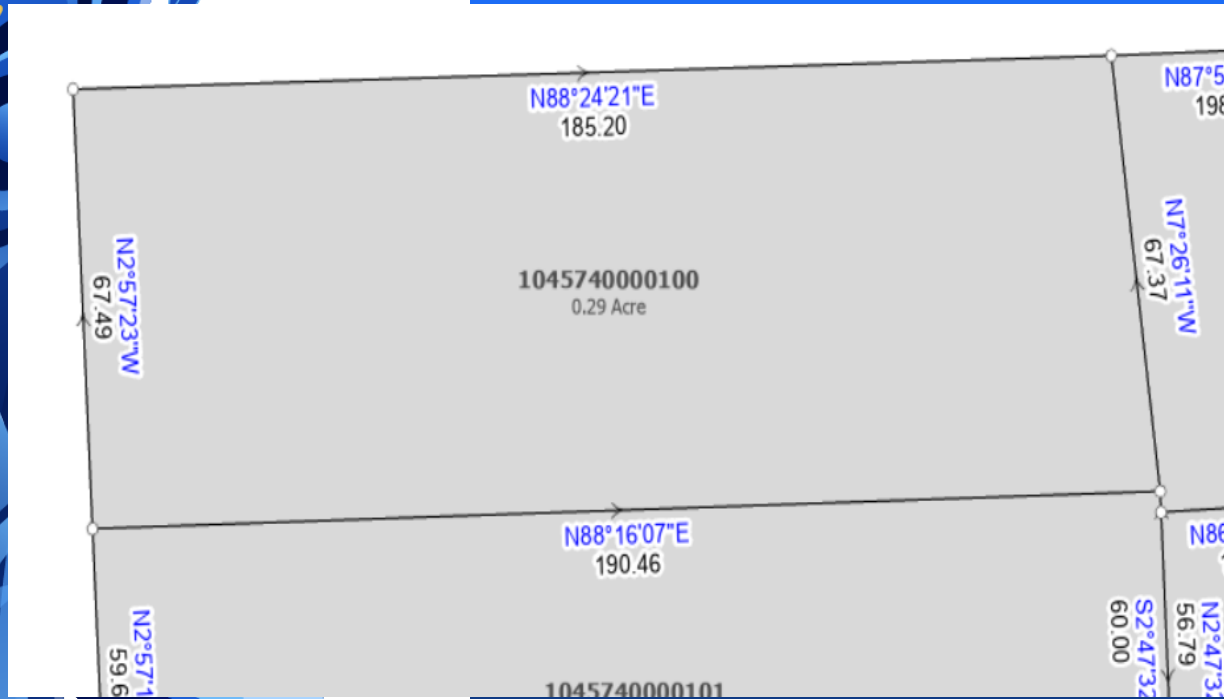




# Topology, Attribute Rules and error feature classes

- Errors are stored in error features
  - Topology error features are part of the parcel fabric layer
  - Attribute Rules error features can be added to the map
- Topology can be configured & extended
- Attribute Rules can be configured & extended





# Demo: Create a parcel fabric, add parcel types, Extend

Amir Bar-Maor

# Data migration

Christine Leslie

<https://pro.arcgis.com/en/pro-app/latest/help/data/parcel-editing/workflow-createpfandload.htm>

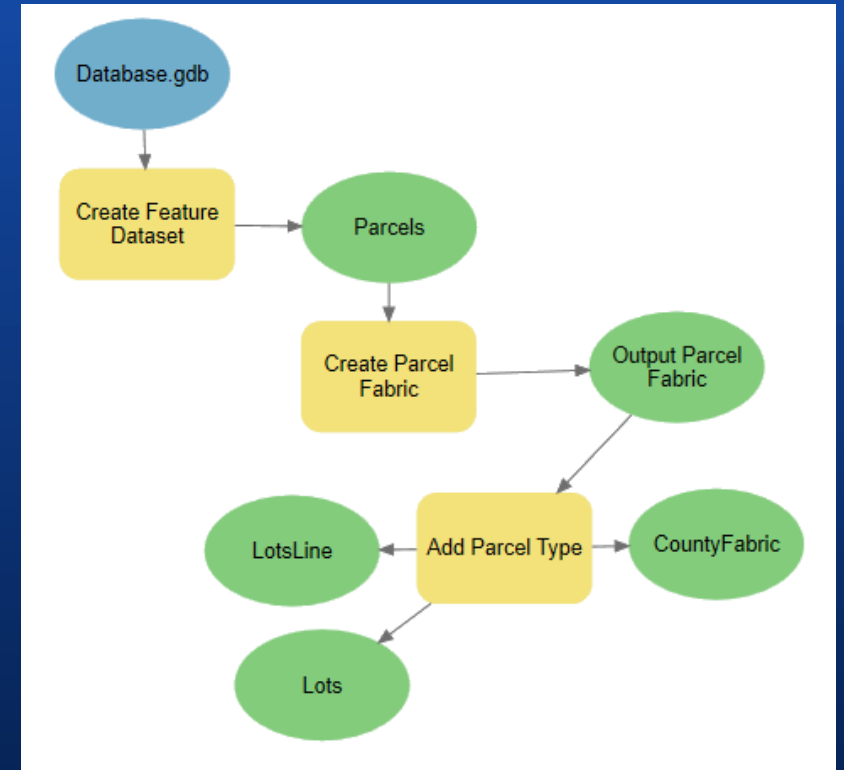


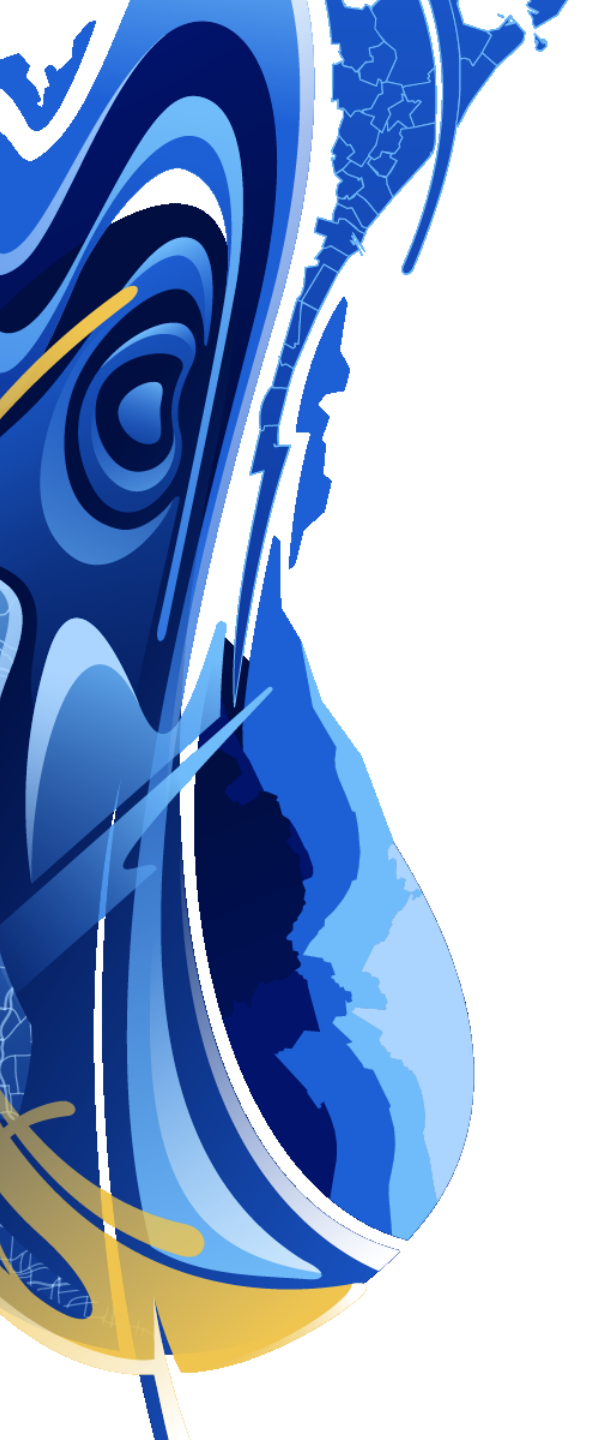
# Data migration steps

1. Create a feature dataset
2. Create a parcel fabric
3. Add parcel types
4. Optionally extend information model
  - Fields, domains, geodatabase rules, attribute rules
5. Append your data
  - Can use field mapping

## After Loading

6. Create Parcel Records
7. Build Parcels





# Demo: Data migration

Amir Bar-Maor



# Upgrade an ArcMap parcel table

Christine Leslie

# Upgrade today, fix later

## Data migration to an ArcMap parcel fabric



## Upgrade an ArcMap parcel fabric to an ArcGIS Pro parcel fabric



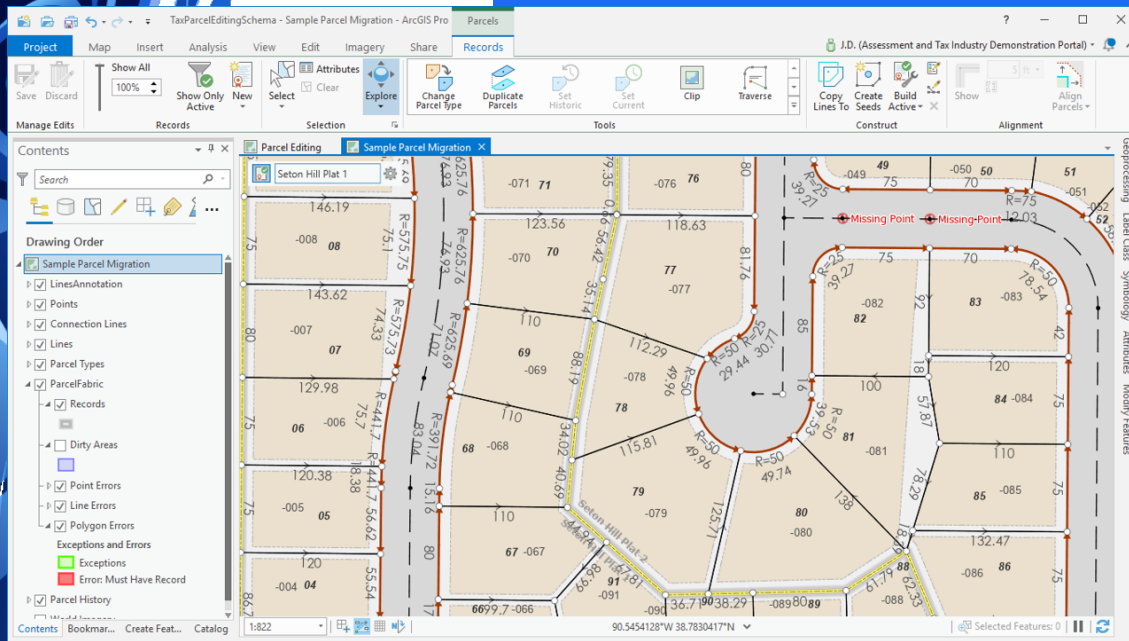
# Upgrade an ArcMap parcel fabric

- Geoprocessing tool
- Creates a new parcel fabric in ArcGIS Pro
  - All parcels are transferred
- ArcMap TYPE field determines the parcel types in Pro
- Extended attributes and domains are transferred
- ArcMap Plans become ArcGIS Pro Records
  - Record polygon matches the area of parcels associated to it

- Tip: upgrade to a staging file geodatabase







# Demo: Upgrade ArcMap parcel fabric

Amir Bar-Maor



# Post-migration data clean up

Christine Leslie

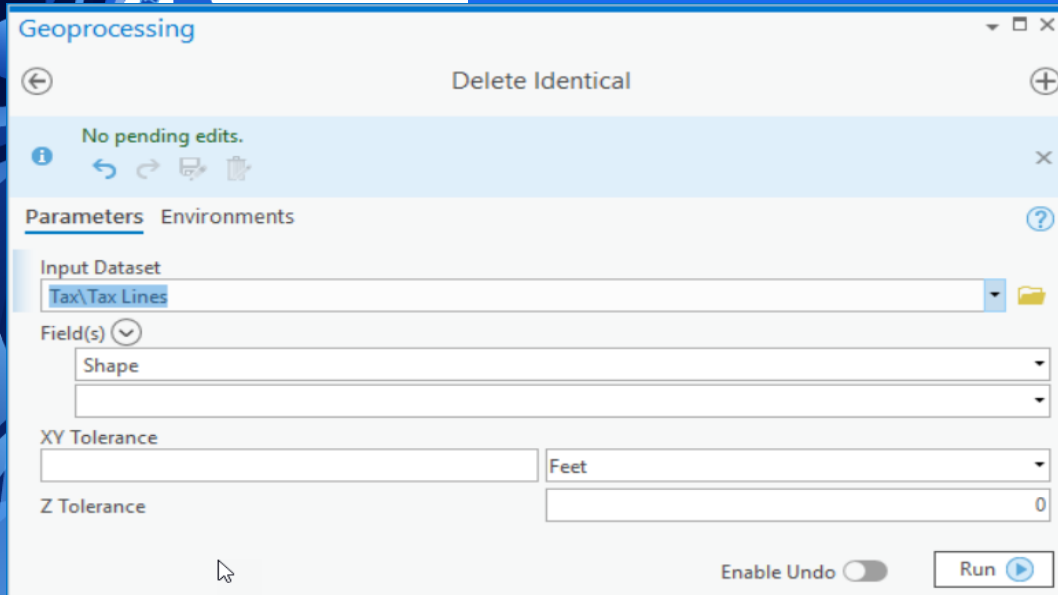
## Common data clean-up tasks

- Delete Identical tool (optional)
  - Remove duplicate overlapping lines
  - Shape field as Input Field
- Simplify By Straight Lines and Circular Arcs tool (optional)
  - Extract/Convert segmented curves to true curves
- Remove fields that do not belong to a parcel type



# Demo: Post-migration data clean-up

Amir Bar-Maor



# Deployments

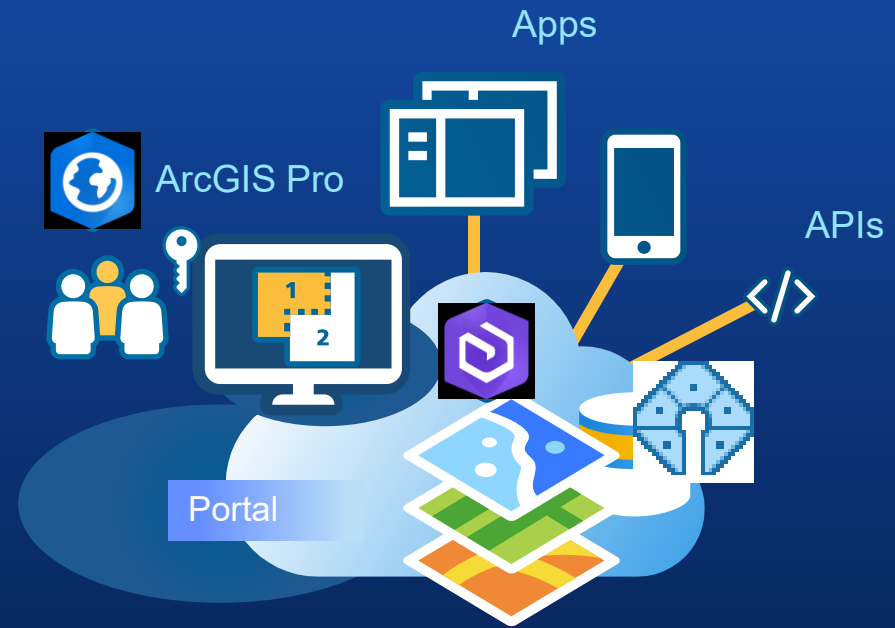
Christine Leslie



# Deployments



Single user, file geodatabase



Enterprise



## Enterprise deployment - Before publishing for editing

- Geodatabase connection type → branch
- Register as versioned
- Configure editing map symbology after publishing
  - Symbology configured after publishing
- Perform large field calculations on staging file geodatabase



The screenshot displays a map interface with a parcel boundary highlighted. The boundary is defined by several segments with bearings and distances:  $N87^{\circ}54'02''E$  198.01,  $N7^{\circ}26'11''W$  67.37, and  $N1^{\circ}1'E$ . A parcel ID '000100' is visible. Below the map, a metadata panel for 'Renton' is shown, including a thumbnail map, owner 'admin', tags 'Renton', modification date '7/4/2019 9:19 PM', and location URL: <https://galileo.esri.com/server/rest/services/Renton/FeatureServer>.

**Catalog**  
Project Portal Favorites History

My Content  
Search

- Renton
- Renton
- HCADIncrement
- HCADIncrement
- KGTest
- KGTest
- Cyprus Pilot publish2
- Cyprus Pilot publish2

# Demo: Publishing the parcel fabric

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# Map configuration

Christine Leslie



# Project configuration

- **File geodatabase**
  - Start editing
- **Enterprise geodatabase**
  - Create an switch to a version to edit
- **Configure:**
  - Units
  - Maps & layouts
  - Layer:
    - Symbology
    - Scale dependency
    - Labels
    - Feature templates

Options

Set the units used in this project.

▼ Distance Units

| Code               | Name           | Plural     | Abbrev | Meters/Unit     | Format    | Default                          |
|--------------------|----------------|------------|--------|-----------------|-----------|----------------------------------|
| Statute_Mile       | Mile           | Miles      | mi     | 1609.344        | 12,345.12 | <input type="radio"/>            |
| Foot               | Foot           | Feet       | ft     | 0.3048          | 12,345.12 | <input checked="" type="radio"/> |
| Foot_US            | US Survey Foot | US Feet    | ftUS   | 0.3048006096... | 12,345.12 | <input type="radio"/>            |
| Yard               | Yard           | Yards      | yd     | 0.9144          | 12,345.12 | <input type="radio"/>            |
| Kilometer          | Kilometer      | Kilometers | km     | 1000            | 12,345.12 | <input type="radio"/>            |
| Meter              | Meter          | Meters     | m      | 1               | 12,345.12 | <input type="radio"/>            |
| <Select Unit Code> |                |            |        | 0               | 12,345.12 | <input type="radio"/>            |

> Angular Units

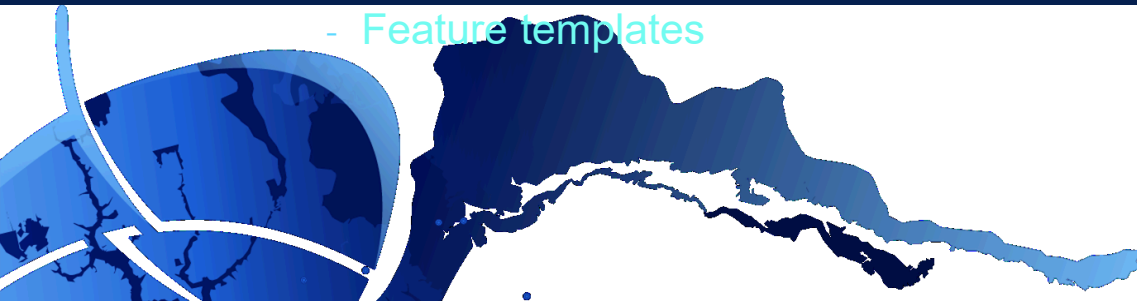
> Area Units

> Location Units

▼ Direction Units

| Code          | Name          | Abbrev | Format     | Default               |
|---------------|---------------|--------|------------|-----------------------|
| North Azimuth | North Azimuth | NAz    | 86°51'31"  | <input type="radio"/> |
| South Azimuth | South Azimuth | SAz    | 266°51'31" | <input type="radio"/> |

OK Cancel



```
ession
change the settings portion to configure direction format, color, rounding and abbreviations
this is an Arcade expression

SETTINGS
QuadrantBearingFormat = true; //set 'true' for quadrant bearing, 'false' for north azimuth
howDistance = true; //set as 'true' to show distance
howDirection = true; //set as 'true' to show direction
howRadius = true; //set as 'true' to show radius
howCurveParameter = true; //set as 'true' to show a curve parameter
curveParameter = "ArcLength"; //set as 'ArcLength' or 'Chord' or 'Angle' for central angle. Case sensitive!
//set as 'true' to show a curve parameter

Insert fields with coded value description function
move extra spaces
move extra line breaks
more about label expressions
```

# Demo: Project configuration

Amir Bar-Maor

# Summary

- *Easy Migration*
- *Easy Upgrade from ArcMap*
- *Works out-of-the-box*
- *Configurable*
- *Easy to adopt*
- *Built in quality management*



# Resources



- Training course:
  - Managing parcels with ArcGIS Pro
  - [www.esri.com/training/catalog/5ed005cddbabe0afc9fff3a/managing-parcels-with-arcgis-pro/](http://www.esri.com/training/catalog/5ed005cddbabe0afc9fff3a/managing-parcels-with-arcgis-pro/)
- Help documentation
- Parcel Fabric Meetup
  - [www.meetup.com/Esri-Parcel-Fabric-Meet-Up/](http://www.meetup.com/Esri-Parcel-Fabric-Meet-Up/)
- GeoNet Parcel Fabric place
  - [community.esri.com/community/arcgis-parcel-fabric](http://community.esri.com/community/arcgis-parcel-fabric)



