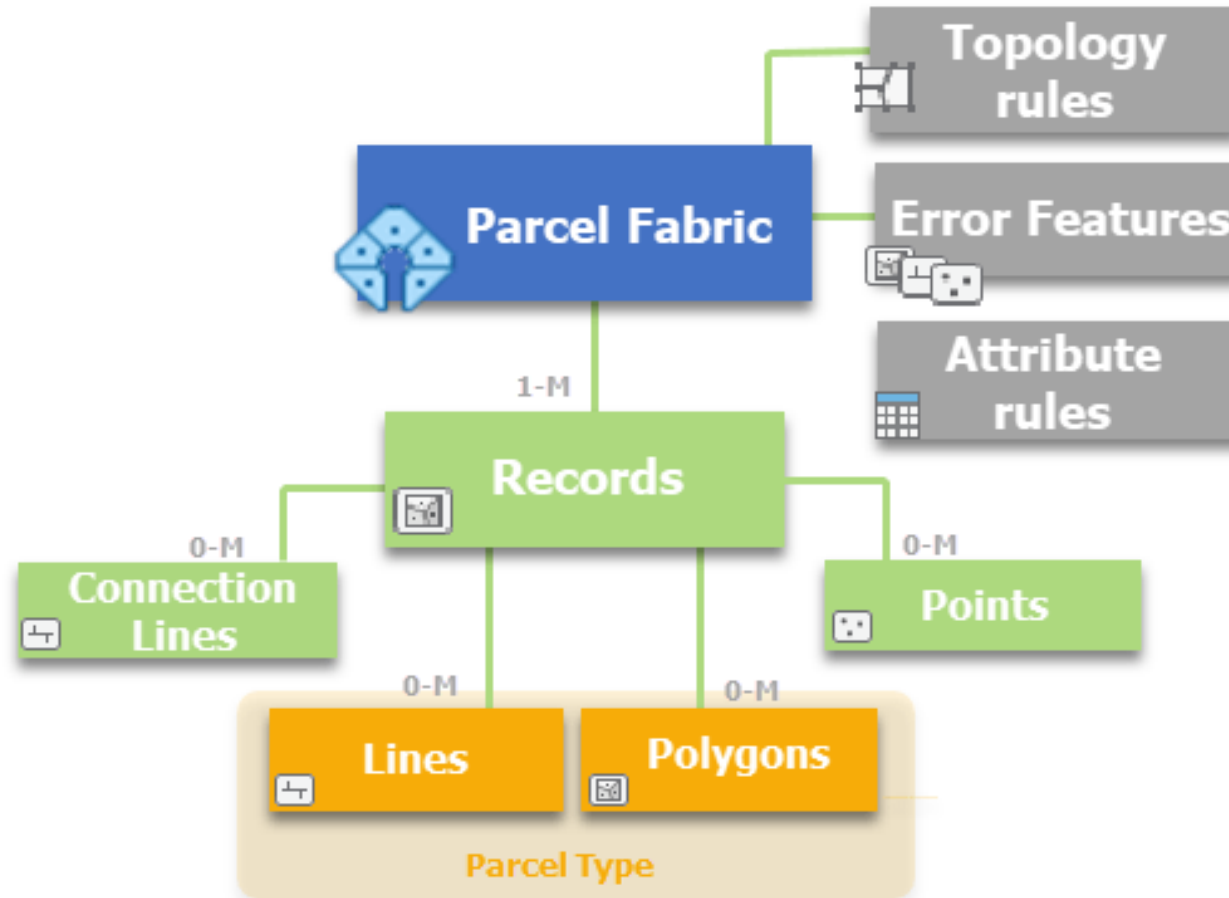


# Mapping ArcGIS Parcel Fabric to LADM Commonalities, Gaps and Implementation

Amir Bar-Maor

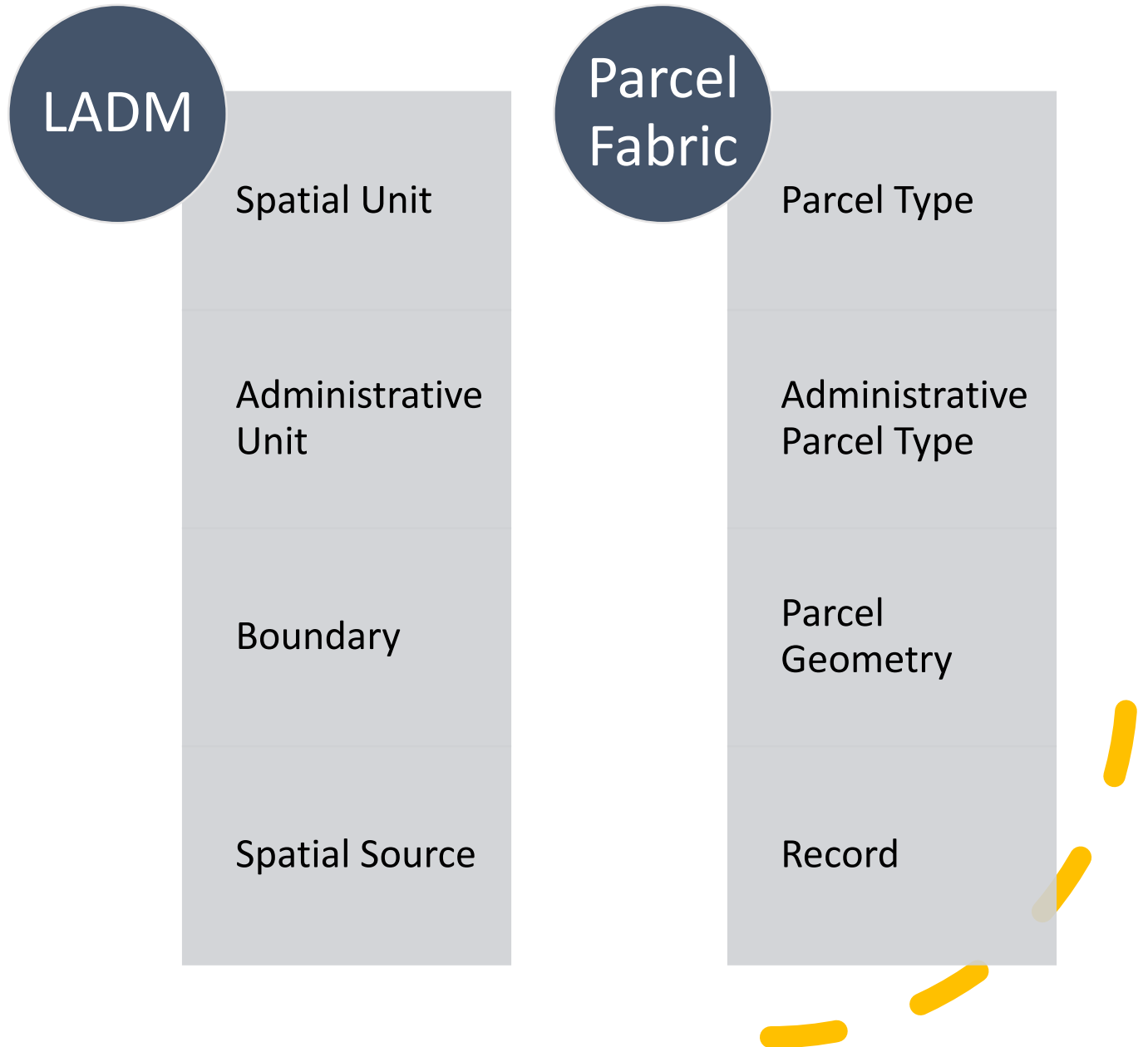
Katherine Smyth

# Parcel Fabric Data Model



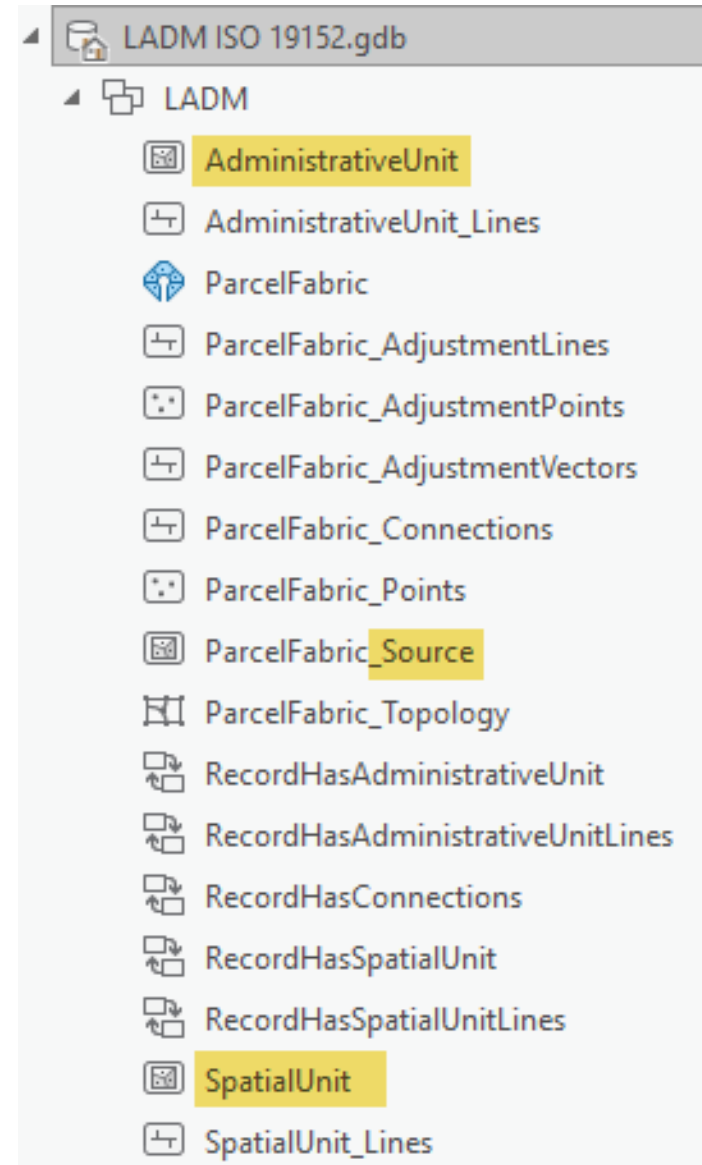
# LADM Ontology in Parcel Fabric

Supports Any  
Language



# LADM in Parcel Fabric: Ready to Use

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# Parcel Fabric Conforms to LADM

Both LADM and the PF models are:

- flexible and extendable to meet unique business needs ('profiles')
- object oriented
- use relationships between entities
- account for the physical representation and the legal representation.
- support multiple systems of legal descriptions, formal and informal



# Extending the Parcel Fabric Data Model

## To Extend, One Can Add:

- additional fields as needed
- domains (AKA 'code list') to certain fields
- and configure topology rules to model the correct parcel behavior
- and configure attribute rules to model the correct parcel behavior
- other capabilities such as contingent values, subtypes and metadata.

## Or Additionally:

- Enable versioning to allow multi-user editing
- Enable replica tracking, editor tracking and add GlobalIDs (UUID) to allow for disconnected editing capabilities.

The base LADM schema can be easily extended

The screenshot displays the ArcGIS Pro interface with a map of Dutch Kadaster parcels. The map shows a grid of parcels, with a large central area highlighted in blue. The interface includes a top menu bar with options like Project, Map, Insert, Analysis, and View. A Command Search bar is visible, along with a 'Not signed in' notification. The Contents pane on the left shows the 'Dutch Kadaster' layer with 'Parcels' selected. The Catalog pane on the right lists various LADM schema classes, including ParcelFabric, ParcelFabric\_AdjustmentLines, ParcelFabric\_AdjustmentPoints, ParcelFabric\_AdjustmentVectors, ParcelFabric\_Connections, ParcelFabric\_Points, ParcelFabric\_Source, ParcelFabric\_Topology, SourceHasAdministrativeUnit, SourceHasAdministrativeUnitLines, SourceHasConnections, SourceHasSpatialUnit, SourceHasSpatialUnitLines, SpatialUnit, SpatialUnit\_Lines, GDB\_ValidationLineErrors, GDB\_ValidationObjectErrors, GDB\_ValidationPointErrors, and GDB\_ValidationPolygonErrors. The map shows a street grid with labels like 'Hofweg', 'Oude Bovendijk', 'Abeelweg', 'Straatweg', 'Kleiweg', 'Gordelweg', 'Bergselaan', 'Bergweg', 'Noord', 'Zwaanshal's', 'Kanaalweg', 'Abtsweg', 'S114', 'S112', 'S109', 'E25|E19', 'N209', 'Grindweg', 'Bedrijventerrein Schiebroek', 'Bedrijventer Boezembo', and 'Bergse Voorplas'. The status bar at the bottom shows a scale of 1:35,929, coordinates 94,017.47E 438,726.02N m, and 'Selected Features: 0'.

'OID' – the PF uses the DBMS OIDs as well as UUID (GlobalID) for PKs and FKs. GlobalIDs are necessary for maintaining object uniqueness across replicas (connected and disconnected workflows).

built-in Quality Rules as part of the schema

built-in Workflows

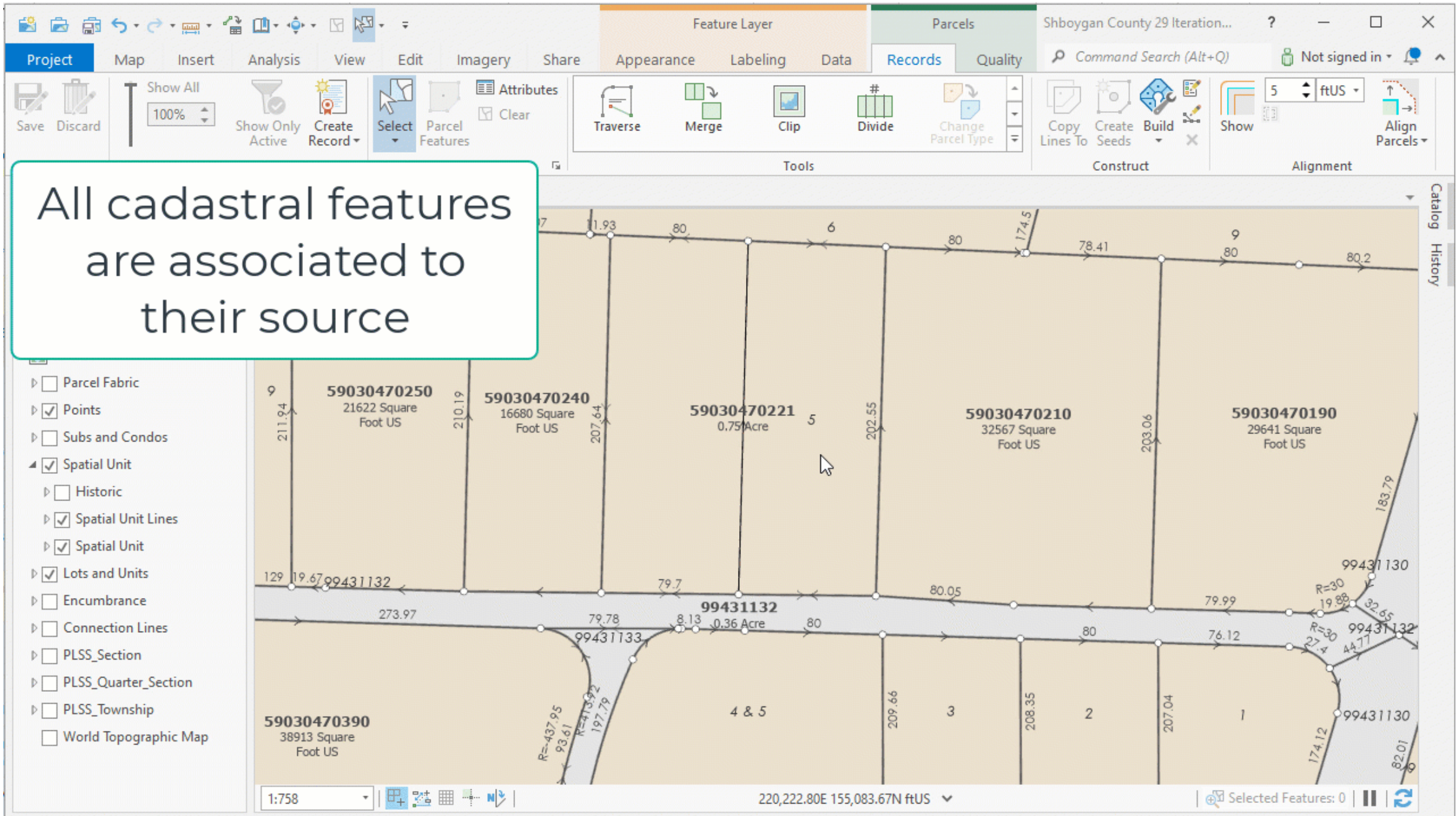
feature Level metadata

Feature Class metadata

explicit parcel lineage

# Parcel Fabric Supports





All cadastral features  
are associated to  
their source

- Parcel Fabric
- Points
- Subs and Condos
- Spatial Unit
  - Historic
  - Spatial Unit Lines
  - Spatial Unit
- Lots and Units
- Encumbrance
- Connection Lines
- PLSS\_Section
- PLSS\_Quarter\_Section
- PLSS\_Township
- World Topographic Map

1:758

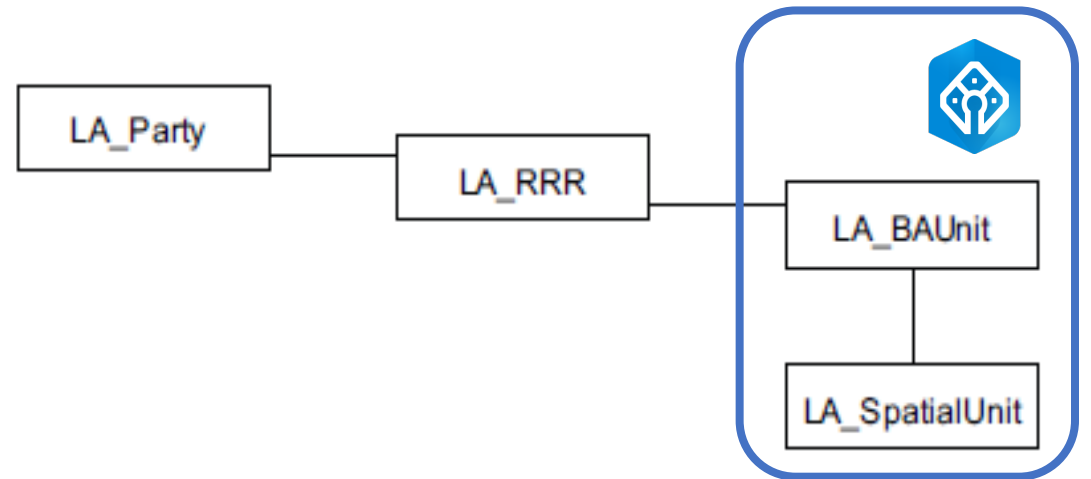
220,222.80E 155,083.67N ftUS

Selected Features: 0

# Parcel Fabric / LADM Gaps

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- The parcel fabric does not cover LA\_Party or LA\_RRR
  - these systems are usually maintained outside of a geographic information system in a registry





# LADM Is Implemented Now as Parcel Fabric

## Non-US Based Implementations

- Cyprus  
pop. 1.2m
- Bonaire  
pop. 20k
- Medellin, Colombia

## US Based Implementations

- Bureau of Land Management
- Harris County, TX  
pop. 4.7m – 1.8m parcels
- Miami Dade County, FL  
pop 2.7m