Editing & Maintaining Parcels with ArcMap

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What to expect

• An introduction to the parcel fabric for ArcGIS Desktop
• A detailed explanation of the parcel fabric data model
• General editing techniques using parcel editing tools
Audience Participation!

- Who here is familiar with the Parcel Fabric?
- Who here has successfully migrated and deployed their parcel network to the Parcel Fabric?
- Who here is migrating or planning on migrating to the Parcel Fabric?
What is a parcel fabric?

- Dataset of related feature classes and tables
  - Polygons, lines, points, plans, etc.
  - Predefined system attributes
- Connected parcel groups
  - Forms a parcel boundary network
- Explicit topology
  - Defined by common parcel corner points
- Parcel Editor toolbar
Why use the parcel fabric?

- Uses an optimized data model for parcel editing
- Preserves recorded information
- Maintains topology between parcels
- Maintains overlapping parcels
- Maintains historic parcels
- Uses automated workflows
- Uses/stores control points
- Maintains spatial accuracy
Parcel Fabric Data Model
Parcel fabric data model
Plans
Parcel fabric data model

- Represents the legal document
- Stores information such as
  - Record format (direction, angle, curve type)
  - Plan metadata
  - Legal date
- Plans contain one or many parcels
Parcels
Parcel fabric data model

- Parcel polygon is defined by a traverse

Parcel polygon has related lines

Lines have related points
Lines and Points
Parcel fabric data model

- Lines have From and To points
- Lines store recorded, COGO dimensions
- Lines have categories
  - Boundary, Radial, Connection,
- Points have X Y Z coordinates
- Points can have a control point
Line points
Parcel fabric data model

- Ensure topology between parcels
- Preserve recorded dimensions

249.42 + 249.59 ≤ 500
Control points
Parcel fabric data model

• Related (linked) to parcel points
• Can be imported or manually added
• Parcel points can be adjusted to control points in a parcel fabric least-squares adjustment
Parcel Fabric Data Model

Supports:

- True parametric curves and radial lines
- Natural boundaries
- Donut/island and multipart parcels
- Historic parcels
- Stacked parcels (Condos)
- Overlapping parcels
Overlapping parcels
Parcel fabric data model

• Subdivisions, Lots, Tax Parcels, Historic parcels share common points
Local Government Information Model (LGIM)

Parcel fabric data model

- Parcel fabric data model can be optimized for your organization
  - Add attributes, tables, definition queries
- In the USA, the LGIM is used
- Parcel fabric can be enabled with the LGIM
- Provides a configured layer for streamlined editing
- Provides automated parcel editing workflows
Parcel Editing
Parcel Editing
Create new parcels

- Parcel Editor toolbar
- Parcel traverse
  - Primary method of creating parcels
- Construct from parent parcel
- Parcel division, merge, remainder
- COGO tools
- Parcel joining
  - Add new parcels to the parcel fabric layer
Parcel Editing
Construct new parcels

- Split parent parcels
  - Construct from parent
- Build parcels from construction lines
- Add or paste construction lines
Parcel joining

- New parcels are interactively joined to the parcel fabric layer
  - Parcels are cartographically matched to existing parcels
  - Minimizes slivers, gaps, overlaps
- Two join methods
  - Fit new parcel to surrounding parcels
  - Hold new parcel fixed and move surrounding parcels
Automated parcel editing workflows
Local Government Information Model

- Common parcel editing workflows in local government
  - Parcel fabric must be enabled with the LGIM
- Workflows can be treated as guides/tutorials
Adjustments in the parcel fabric

- Least-squares adjustment
  - Adjust parcels to two or more control points
  - Parcel dimensions must match record dimensions
  - High degree of spatial accuracy
- Manual transform
  - Move/shift a selection parcels
- Feature adjustment
  - Align features to adjusted parcel fabric boundaries
Parcel Editing Demo
Amy Andis
Parcel fabric summary

- Uses an optimized data model for parcel editing
- Preserves recorded information
- Maintains topology between parcels
- Maintains overlapping parcels
- Maintains historic parcels
- Uses automated workflows
- Uses/stores control points
- Maintains spatially accuracy
Community
Land Records Meetup

Community
Geonet Land Records Group

- geonet.esri.com/groups/land-records
Community
Geonet ArcGIS Ideas

• geonet.esri.com/community/arcgis-ideas
Community
Geonet Parcel Fabric Developers Group

• geonet.esri.com/groups/parcel-fabric-developers
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The Next Generation of Parcel Management

Esri will support parcel management in future releases of ArcGIS Pro. The new generation of parcel management will be of interest to customers who maintain cadastral records at any scale, domestically and internationally.

The new generation will introduce 2D/3D editing capabilities and a simpler more efficient approach for parcel maintenance. The new generation of the parcel fabric can be edited from the entire ArcGIS Platform and maintained using the new improved editing functionality of ArcGIS Pro.

Existing customers will be able to easily upgrade their parcel fabric without having to re-migrate their data, thus saving their investment.

For more information visit the UC 2018 Q & A and search for Parcel Fabric