Migrating Parcel data into the Parcel Fabric Solution

Tim Hodson
Amir Bar-Maor
Agenda

• What is a Parcel Fabric?

• Loading data into a Parcel Fabric

• What is the Local Government Information Model?

• Data Loading Phases

• Tips & Tricks
What is a Parcel Fabric?

- Set of related tables and feature classes stored in a geodatabase
  - Created in a feature dataset
- Connected parcel groups
  - Forms a parcel boundary network
- Explicit topology
  - Defined by common parcel corner points, no overlaps and gaps between neighboring parcels
Parcel Fabric Data Model

- **Plans**
  - **Parcels**
    - **Points**
      - **Control**
      - **Line Points**
    - **Lines**
What is a Parcel Fabric?
Optimized Data Model for Parcels
Parcel Fabric
Line-Points

Preserve original record dimensions, ensure topology between parcels
All Subdivisions, Lots, Tax Parcels, etc. are “Parcels” in the Parcel Fabric
Migrating Data to a Parcel Fabric

• Load topology geoprocessing tool
  - Loads a clean, validated topology into a parcel fabric
  - Line feature class, polygon feature class
  - Topology is validated against a required set of rules

• Import control points wizard
  - Loads control from a feature class, table or .csv file
Loading data into a Parcel Fabric
What is the Local Government Information Model?

- Collection of GIS dataset models, web services, maps & apps

- Organizes information and processes across departments

- Parcel Fabric Solution is a part of the LGIM
What is the Local Government Information Model?

- Uses a parcel fabric for parcel editing & maintenance

- Parcel data is migrated to a parcel fabric

- 10.1 SP1: Create/upgrade a parcel fabric to LGIM with a button click

LGIM – Parcel Editing uses a Parcel Fabric
Parcel Editing in the LGIM

Tax Parcel Editing Map

• Built with three components of COTS technology:
  - A Parcel Fabric Information Model (Info)
  - A Tax Parcel Editing Map designed for editing workflows
  - Workflow dialog with specific, goal-driven tasks
## Parcel Editing in the LGIM

Parcel fabric layer and additional layers for parcel types

<table>
<thead>
<tr>
<th>Layer</th>
<th>Parcel Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic parcels</td>
<td>Type 7, 9, 6</td>
</tr>
<tr>
<td>Cadastral Framework</td>
<td>Type 1, 2, 3</td>
</tr>
<tr>
<td>Subs and Condos</td>
<td>Type 5</td>
</tr>
<tr>
<td>Tax Parcels</td>
<td>Type 7</td>
</tr>
<tr>
<td>Lots and Units</td>
<td>Type 6</td>
</tr>
<tr>
<td>Encumbrances</td>
<td>Type 9</td>
</tr>
<tr>
<td>Special Survey (not shown)</td>
<td>Type 4</td>
</tr>
<tr>
<td>Ownership (not shown)</td>
<td>Type 8</td>
</tr>
<tr>
<td>Separated right (not shown)</td>
<td>Type 10</td>
</tr>
<tr>
<td>Other (not shown)</td>
<td>Type 11</td>
</tr>
</tbody>
</table>

One parcel fabric, Many parcel types
Parcel Editing in the LGIM
Parcel types and domains

- Some parcel type layers have attribute domains
  - Layers symbolized using attribute domains

<table>
<thead>
<tr>
<th>Layer</th>
<th>Attribute domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic parcels</td>
<td>Reason Parcel Retired</td>
</tr>
<tr>
<td>Subs and Condos</td>
<td>Sub or Condo Type</td>
</tr>
<tr>
<td>Tax Parcels</td>
<td>None</td>
</tr>
<tr>
<td>Lots and Units</td>
<td>Lot or Unit Type</td>
</tr>
<tr>
<td>Encumbrances</td>
<td>Encumbrance Type</td>
</tr>
</tbody>
</table>
Data Loading Phases
Source > Staging > Loading

Geodatabase \ Coverages
Files: CAD, SHP
Tables with XY for Control, CAMA

Staging Geodatabase
Simple Feature Classes & Topology

Data Cleanup

Loading

Production
Parcel Fabric

Esri UC2013 . Technical Workshop . Migrating Parcel data to the Local Government Information Model
Resources for Data Migration

Data Migration

• **GP Tool:** [Parcel Fabric Data Migration and Analysis Tools](#)
• **GP Tool:** [Iteratively Load to the Parcel Fabric](#)
• **Staging Data:** [Tax Parcel Editing Fabric](#)

Original Sources → Staging

Simple Feature Classes & Topology

[Staging]

Loading → Production

Parcel Fabric

The Tax Parcel Editing map includes the following:

- A multi-scale ArcMap map document designed for parcel editing
- A staging geodatabase that can help you migrate your parcel data into the Local Government Information Model
- A python script to create published representations of parcel data
- The [Local Government geodatabase](#) with sample data from Bloomfield Township, Michigan
- Tutorial data: a scanned subdivision and a CAD file.
Resources for Data Migration

Data Migration

- **Whitepaper**
  - Loading Data Into a Parcel Fabric

- **ArcGIS Help 10.2**
  - Migrating data to the Parcel Fabric
Most of the work is done in staging

- Use a schema only layer package (part of the Tax Parcel Editing download)
- Calculate types on source parcel data
- Load & Create polygons and lines for each parcel type
- For each type validate and fix topology errors
- Use the Load Topology geoprocessing tool to migrate data

To avoid topology errors: create polygons from lines or vice versa
Data Cleanup

• Fix Geometry before attributes
• Polygon to lines (or vice versa)
• Clean and format curves
• Check COGO dimensions on lines (if exist)
• Check and repair geometries
• Create and Validate topologies, fix errors
Resource for Data Cleanup
Helper Add-in: Curves And Lines

- Use Desktop Search to Find Add-ins for fabrics
Loading data using Topology

- Load Topology Geoprocessing tool
  - Load topologies to the parcel fabric in the ParcelEditing feature dataset
- Log file
- Import Control points
Staging Environment

Data Cleanup

Loading to LGIM
# Data migration Tips and Tricks

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing an Attribute</td>
<td>Create an attribute on the target fabric with the same name &amp; type</td>
</tr>
<tr>
<td>Loading overlapping parcels</td>
<td>Separate to non-overlapping datasets</td>
</tr>
<tr>
<td>Loading a large dataset</td>
<td>Use geoprocessing data migration iteration model</td>
</tr>
<tr>
<td>Migrating plan data</td>
<td>Create a field called ‘PlanName’ on the parcels</td>
</tr>
<tr>
<td>Monitor Loading</td>
<td>A log file is created for each migration. IDs of dropped parcels are logged</td>
</tr>
<tr>
<td>Environment</td>
<td>Use the target environment for data migration (SDE)</td>
</tr>
</tbody>
</table>
Community
Resources and Participation

• New Instructor-Lead Training
  - (http://bit.ly/1btCtdB)

• New 10.2 Resource Center for Land Records
  (http://bit.ly/15bV3qA)

• Community Participation: Meet-up, Forum, Ideas
Community Meet-up

Community

Ideas

- Ideas: http://ideas.arcgis.com/
Community Forum

Additional offerings

• Editing and Maintaining Parcels with ArcGIS
  - Thu 7/11/2013, 10:15 AM - 11:30 AM, Room 10

• ArcGIS Deed Drafter: An Introduction
  - Thu 7/11/2013, 11:30 AM - 12:00 PM, Hall H - GIS Discussion Lounge
Thank you…

Please fill out the session evaluation

Offering ID: 1383

Online – www.esri.com/ucsessionssurveys

Paper – pick up and put in drop box