CONVERTING CADASTRAL DATA TO GEODATABASE

Santa Cruz County Assessor Drafting Process

Gulla Gisladottir, GIS Analyst
gulla.gisladottir@co.santa-cruz.ca.us
PRESENTATION FOCUS
CADASTRAL DATASET

- Migration Strategy
- Database Design
- Data Maintenance Procedures
- Serving up the data
- Future Goals
DATA CONVERSION AND MIGRATION

- Clean up and coordinate all the layers in the 103 AutoCAD Book drawings.
- Assemble the 103 Map Books and create seamless layers for the APNs, parcel boundaries and easement lines.
- Extract all the dimension text from the 4,500 Map Pages.
- Extract all the Lot Number and Easement text from the Map Pages.
- Assemble all the Map Books that had condominiums and create seamless layers for each of the seven condominium floors.
- Create a point file from the APNs.
The Cadastral Feature Dataset consists of 18 feature classes.

The feature classes can be line, polygon, point or annotation data types.

A feature class can only have one data type.

A feature class can be further divided into Subtypes.
## DATABASE DESIGN

### THE BOUNDARY FEATURE CLASS

#### Boundary

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBJECTID</td>
<td>Object ID</td>
<td>Primary Key</td>
</tr>
<tr>
<td>RECEBNDID</td>
<td>Text</td>
<td>Type of boundary line defined by subtype</td>
</tr>
<tr>
<td>RECEBNDTYPE</td>
<td>Integer</td>
<td>Describes record boundary as described on deed</td>
</tr>
<tr>
<td>RECEBNDCALL</td>
<td>Text</td>
<td>Additional information on boundary</td>
</tr>
<tr>
<td>RBCOMMENT</td>
<td>Text</td>
<td>Record Basis of Bearing</td>
</tr>
<tr>
<td>BOBEARING</td>
<td>Text</td>
<td>Map Source Agent (surveyor or firm)</td>
</tr>
<tr>
<td>MAPSOURCE</td>
<td>Text</td>
<td>Source of line (digitized or record information)</td>
</tr>
<tr>
<td>SOURCETYPE</td>
<td>Text</td>
<td>Date of record document</td>
</tr>
<tr>
<td>SOURCEDATA</td>
<td>Text</td>
<td>Direction (meets and bounds)</td>
</tr>
<tr>
<td>SHAPE</td>
<td>Geometry</td>
<td>Distance (meets and bounds)</td>
</tr>
<tr>
<td>DIRECTION</td>
<td>Text</td>
<td>Radius</td>
</tr>
<tr>
<td>DISTANCE</td>
<td>Text</td>
<td>Delta</td>
</tr>
<tr>
<td>RADIUS</td>
<td>Text</td>
<td>Tangent</td>
</tr>
<tr>
<td>DELTA</td>
<td>Text</td>
<td>Arc length</td>
</tr>
<tr>
<td>TANGENT</td>
<td>Text</td>
<td>Actual length of digitized lines</td>
</tr>
<tr>
<td>ARCLENGTH</td>
<td>Text</td>
<td></td>
</tr>
<tr>
<td>SIDE</td>
<td>Text</td>
<td></td>
</tr>
<tr>
<td>SHAPE.len</td>
<td>Double</td>
<td></td>
</tr>
</tbody>
</table>

#### RECEBNDTYPE (Subtype)

- Assessor’s Parcel
- General Easement
- Road Easement
- Utility Easement
- Drainage Easement
- Well Easement
- Right of Way
- Lot Line
- Miscellaneous
- Assessor’s Parcel-Survey
- Right of Way-Survey
The relationship between the feature classes is defined by Topology Rules.

Topology validation, which is the last step in the editing process, makes sure that all the rules have been followed.
DATABASE DESIGN
TOPOLOGY RULES

**Boundary must be covered by**

- Polygon boundaries in one feature class or subtype must be covered by the lines of another feature class or subtype.

- Line errors are created where polygon boundaries are not covered by a line of another feature class or subtype.

Use this rule when polygon boundaries should be coincident with another line feature class or subtype.

**Must not overlap**

- Polygons must not overlap within a feature class or subtype.
- Polygons can be disconnected or touch at a point or touch along an edge.

Use this rule to make sure that no polygon overlaps another polygon in the same feature class or subtype.
### Condos

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBJECTID</td>
<td>Object ID</td>
</tr>
<tr>
<td>APN</td>
<td>Text</td>
</tr>
<tr>
<td>APNNO DASH</td>
<td>Text</td>
</tr>
<tr>
<td>DEED_ID</td>
<td>Text</td>
</tr>
<tr>
<td>RECORDMAP</td>
<td>Text</td>
</tr>
<tr>
<td>SPLITCOMBO</td>
<td>Text</td>
</tr>
<tr>
<td>PRCLID</td>
<td>Text</td>
</tr>
<tr>
<td>PRCLKEY</td>
<td>Text</td>
</tr>
<tr>
<td>EMISLAYR</td>
<td>Integer</td>
</tr>
<tr>
<td>FLOOR</td>
<td>Text</td>
</tr>
<tr>
<td>SHAPE</td>
<td>Integer</td>
</tr>
<tr>
<td>SHAPE.area</td>
<td>Geometry</td>
</tr>
<tr>
<td>SHAPE.len</td>
<td>Double</td>
</tr>
</tbody>
</table>

### Floor (Subtype)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Condo Ground Floor</td>
</tr>
<tr>
<td>1</td>
<td>Condo First Floor</td>
</tr>
<tr>
<td>2</td>
<td>Condo Second Floor</td>
</tr>
<tr>
<td>3</td>
<td>Condo Third Floor</td>
</tr>
<tr>
<td>4</td>
<td>Condo Fourth Floor</td>
</tr>
<tr>
<td>5</td>
<td>Condo Fifth Floor</td>
</tr>
<tr>
<td>6</td>
<td>Condo Sixth Floor</td>
</tr>
</tbody>
</table>
DATA MAINTENANCE PROCEDURES

In ArcMap
COGO description from recorded document and create new parcels

Closure < 0.1'

Find next available APN in Mainframe

Assign new APNs, update all affected cadastral layers to match and run topology

Create updated Assessor’s map page and print

No

OK

Yes

Appraisers assign new values and other parcel related data

Digital QC
Check new parcels, attributes and topology

Paper QC
Document conformity and map accuracy

Yes

No

Mainframe data entry

Assemble new map, old map, transmittal and deed/map split-comb. form for checking

Write transmittal showing old/new APNs and acreage to, from and total

Write letter to owner/surveyor, requesting correction

Update index map page if needed

No

Yes

Receive change order document, check that title is correct and taxes are paid

OK

No
DATA MAINTENANCE PROCEDURES
THE PARCEL EDITING PROCESS

ArcSDE
Geodatabase

FEATURE DATASETS
- Administrative Boundaries
- Biotic and Natural Resources
- Cadastral/Default Version
- County Service Areas & TRAs
- Cultural Resources & Census
- Etc.

Assessor’s Edit Version

Version 1
Version 2
Version 3

Assessor’s Editors
DATA MAINTENANCE PROCEDURES
PARCEL CHANGES UPDATED TO GEODATABASE

Monthly Assessor edits completed

Assessor Admin. runs Version Comparison between the Parent Version of all Editor Versions and Default

Assessor Admin. reconciles each Edit Version with Parent Version

Assessor Admin. posts each Edit Version to Parent Version

Each editor deletes their Version
Assessor Admin deletes Parent Version

Assessor Admin. runs Version Comparison program for each editor against the Parent Version and checks for duplicate APNs

Each editor corrects their version as needed and makes it public

Admin. Runs Version Comparison between Parent Version and Default Version to create Delta table

Assessor Admin. Reconciles and posts Assessor Parent Version to Default Version

Monthly Assessor edits completed

Assessor Admin. runs Version Comparison between the Parent Version of all Editor Versions and Default

Assessor Admin. reconciles each Edit Version with Parent Version

Assessor Admin. posts each Edit Version to Parent Version

Each editor deletes their Version
Assessor Admin deletes Parent Version

Assessor Admin. runs Version Comparison program for each editor against the Parent Version and checks for duplicate APNs

Each editor corrects their version as needed and makes it public

Admin. Runs Version Comparison between Parent Version and Default Version to create Delta table

Assessor Admin. Reconciles and posts Assessor Parent Version to Default Version

DATA MAINTENANCE PROCEDURES
PARCEL CHANGES UPDATED TO GEODATABASE

Monthly Assessor edits completed

Assessor Admin. runs Version Comparison between the Parent Version of all Editor Versions and Default

Assessor Admin. reconciles each Edit Version with Parent Version

Assessor Admin. posts each Edit Version to Parent Version

Each editor deletes their Version
Assessor Admin deletes Parent Version

Assessor Admin. runs Version Comparison program for each editor against the Parent Version and checks for duplicate APNs

Each editor corrects their version as needed and makes it public

Admin. Runs Version Comparison between Parent Version and Default Version to create Delta table

Assessor Admin. Reconciles and posts Assessor Parent Version to Default Version
DATA MAINTENANCE PROCEDURES

ASSESSOR MAP PAGES

"Experience is the name everyone gives to their mistakes"
Oscar Wilde
SERVING UP THE DATA

GEODATABASE AND THE DATA MENU APPLICATION

ArcSDE
Geodatabase

FEATURE DATASETS
Administrative Boundaries
Biotic and Natural Resources
Cadastral
County Service Areas & TRAs
Cultural Resources & Census
Etc.

Data Menu Application
Feature Data Sets
Feature Classes

ArcView
ArcMap
ArcEditor

Version 1
Version 2
Version 3

Assessor's Editors

County Data Users
FUTURE GOALS

- Increase accuracy of Parcel Base
- Incorporate the use of Survey Monuments in parcel maintenance
- Increase Automation of Parcel Maintenance
- Develop Inter/Intranet Applications
MANTRA: PEOPLE WITH GOALS SUCCEED BECAUSE THEY MAKE MAPS TO THEIR DESTINATION