CONVERTING CADASTRAL DATA TO GEODATABASE

Santa Cruz County Assessor Drafting Process

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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.

DATABASE DESIGN

THE CADASTRAL FEATURE DATASET

Cadastral Feature Dataset

Cadastral Topology	DATA TYPE
AssessorsParcels	Poly
Boundary	Line
MapBooks	Poly
TaxCodeAreas	Poly
Blocks	Poly

Condo Topology	
CondoBoundary	Line
Condos	Poly
AnnoAPNCondos	Anno
AnnoAPNumber	Anno
AnnoCondoBoundary	Anno
AnnoDimensions	Anno
AnnoEasements	Anno
AnnoLots	Anno
AnnoMapPage	Anno
Hooks	Point
MiscLines	Line
NewDimensionLines	Line
SectTownRange	Poly

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

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

RECBNDTYPE (Subtype)

- Assessor's Parcel
- General Easement
- Road Easement
- Utility Easement
- Utility Easement
- Drainage Easement
- Well Easement
- Right of Way
- Lot Line
- Miscellaneous
- Assessors Parcel-Survey
- Right of Way-Survey

DATABASE DESIGN
TOPOLOGY RULES

Cadastral Topology Rules

AssessorsParcels	Must Not Overlap	
AssessorsParcels	Must Not Have Gaps	
Boundary	Must Not Self Overlap	
Blocks	Area Boundary Must Be Covered By Boundary Of	AssessorsParcels
Boundary: Assessors Parcel	Must Not Have Dangles	
Boundary: Right of Way	Must Not Have Dangles	
Boundary: Assessors Parcel-Survey	Must Not Have Dangles	
Boundary: Right of Way-Survey	Must Not Have Dangles	
Boundary: Assessors Parcel	Must Be Covered By Boundary Of	AssessorsParcels
Boundary: Right of Way	Must Be Covered By Boundary Of	AssessorsParcels
Boundary: Assessors Parcel-Survey	Must Be Covered By Boundary Of	AssessorsParcels
Boundary: Right of Way-Survey	Must Be Covered By Boundary Of	AssessorsParcels
TaxCodeAreas	Must Not Overlap	
TaxCodeAreas	Must Not Have Gaps	
TaxCodeAreas	Area Boundary Must Be Covered By Boundary Of	AssessorsParcels
MapBooks	Must Not Have Gaps	
MapBooks	Must Not Overlap	
MapBooks	Area Boundary Must Be Covered By Boundary Of	AssessorsParcels

The relationship between the feature classes is defined by Topology Rules.

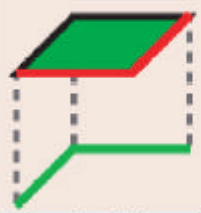
Topology validation, which is the last step in the editing process, makes sure that all the rules have been followed.

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.

Major road lines form part of outlines for census blocks.

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.

Polygon errors are created from areas where polygons overlap.

A voting district map cannot have any overlaps in its coverage.

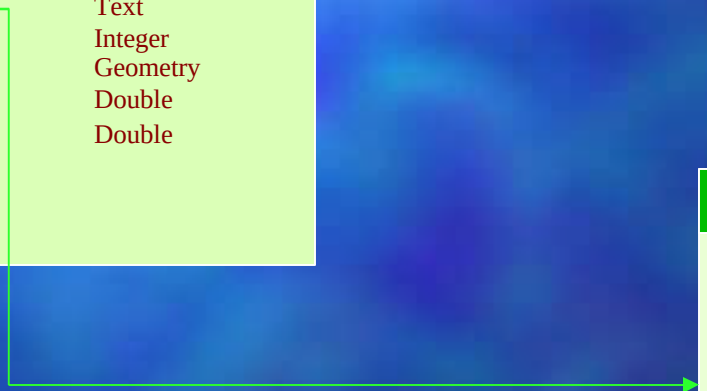
Use this rule to make sure that no polygon overlaps another polygon in the same feature class or subtype.

DATABASE DESIGN

THE CONDOMINIUM FEATURE CLASS

Condos

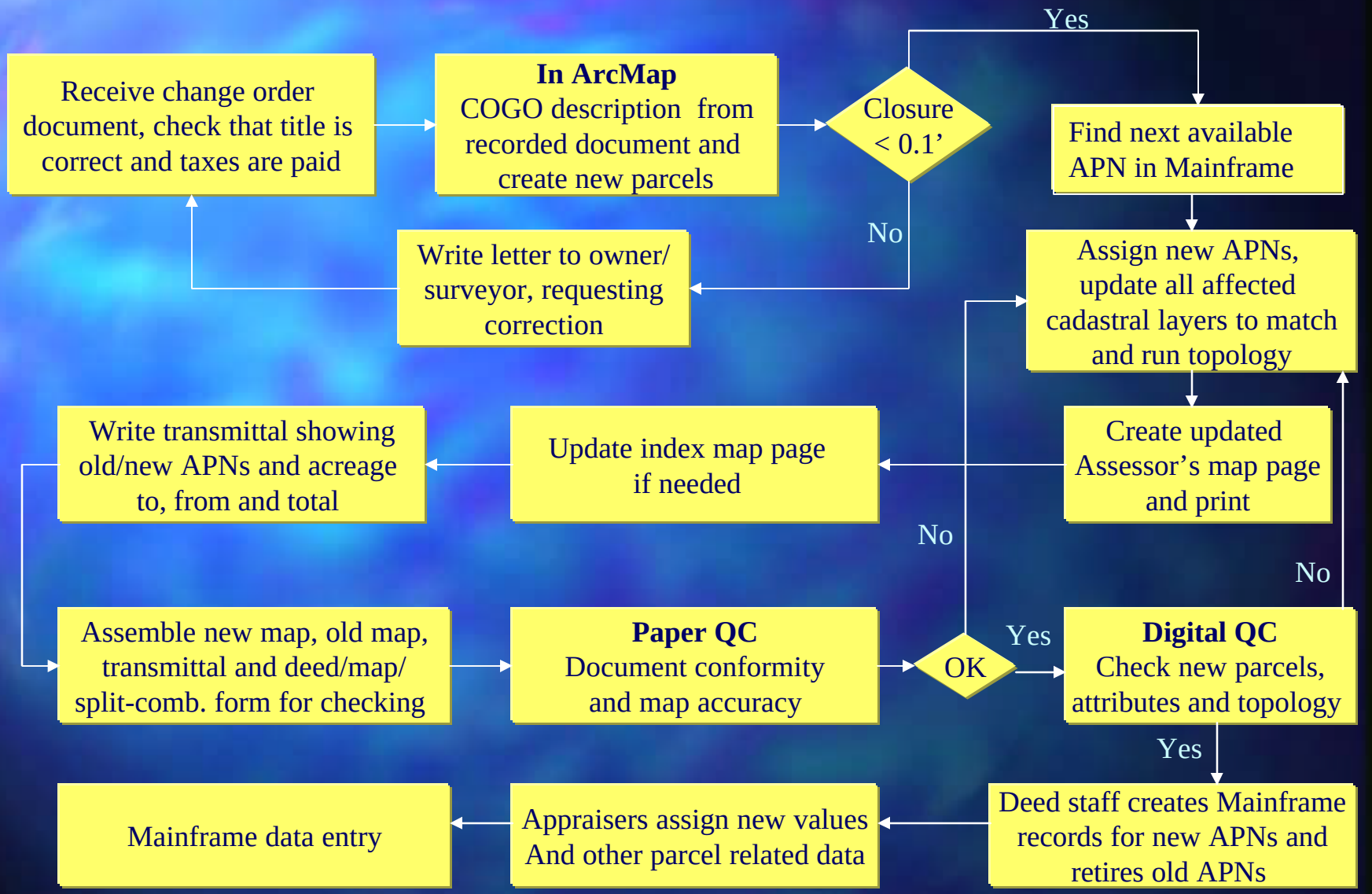
Field Name	Data Type
OBJECTID	Object ID
APN	Text
APNNODASH	Text
DEED_ID	Text
RECORDMAP	Text
SPLITCOMBO	Text
PRCLID	Text
PRCLKEY	Integer
EMISLAYR	Text
FLOOR	Integer
SHAPE	Geometry
SHAPE.area	Double
SHAPE.len	Double



Floor (Subtype)

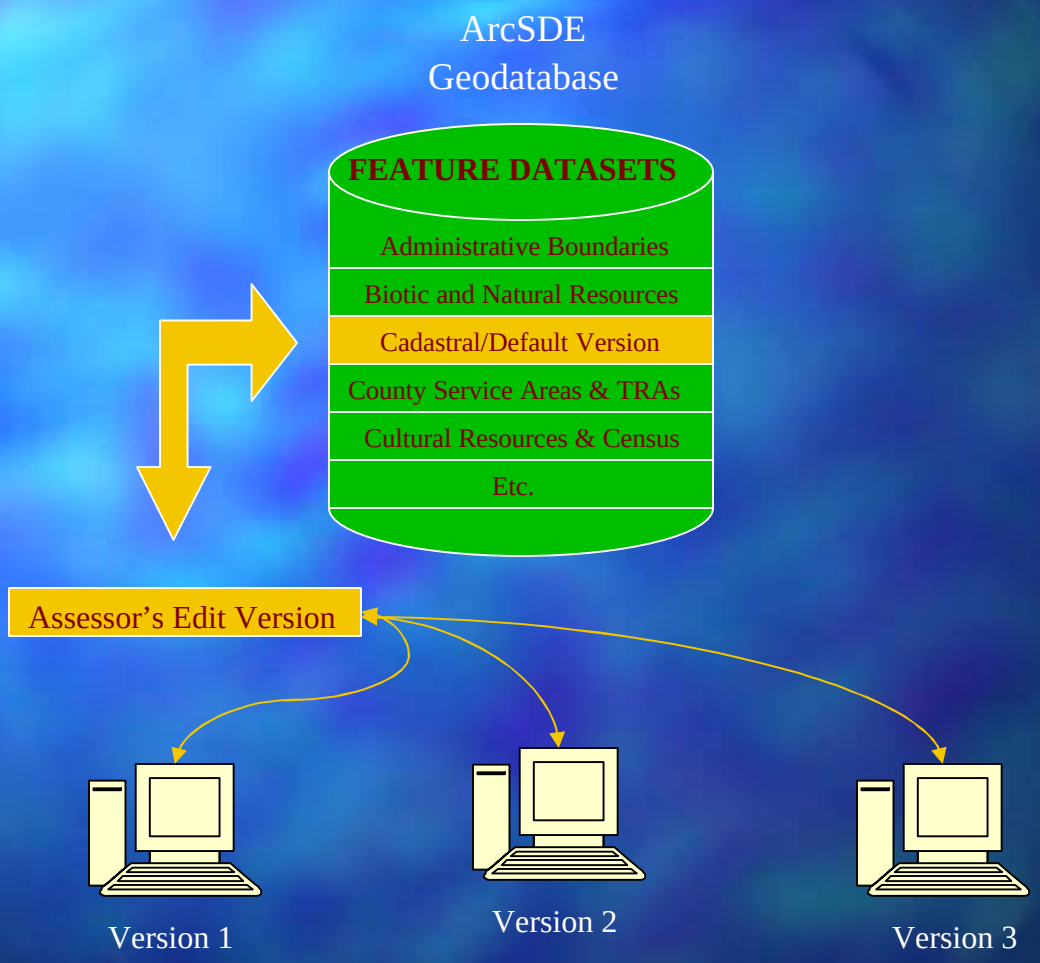
Code	Description
0	Condo Ground Floor
1	Condo First Floor
2	Condo Second Floor
3	Condo Third Floor
4	Condo Fourth Floor
5	Condo Fifth Floor
6	Condo Sixth Floor

DATA MAINTENANCE PROCEDURES



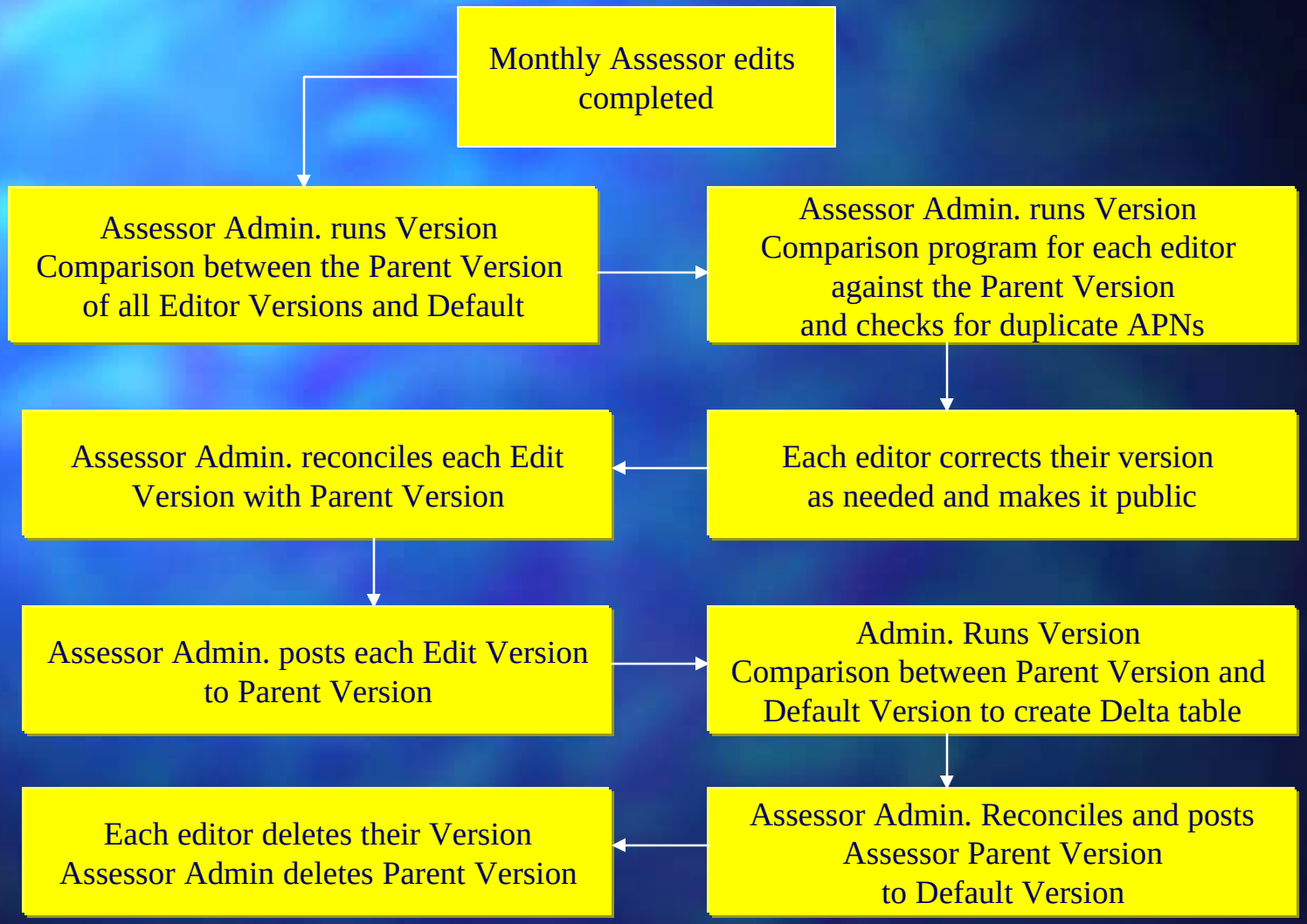
DATA MAINTENANCE PROCEDURES

THE PARCEL EDITING PROCESS



DATA MAINTENANCE PROCEDURES

PARCEL CHANGES UPDATED TO GEODATABASE

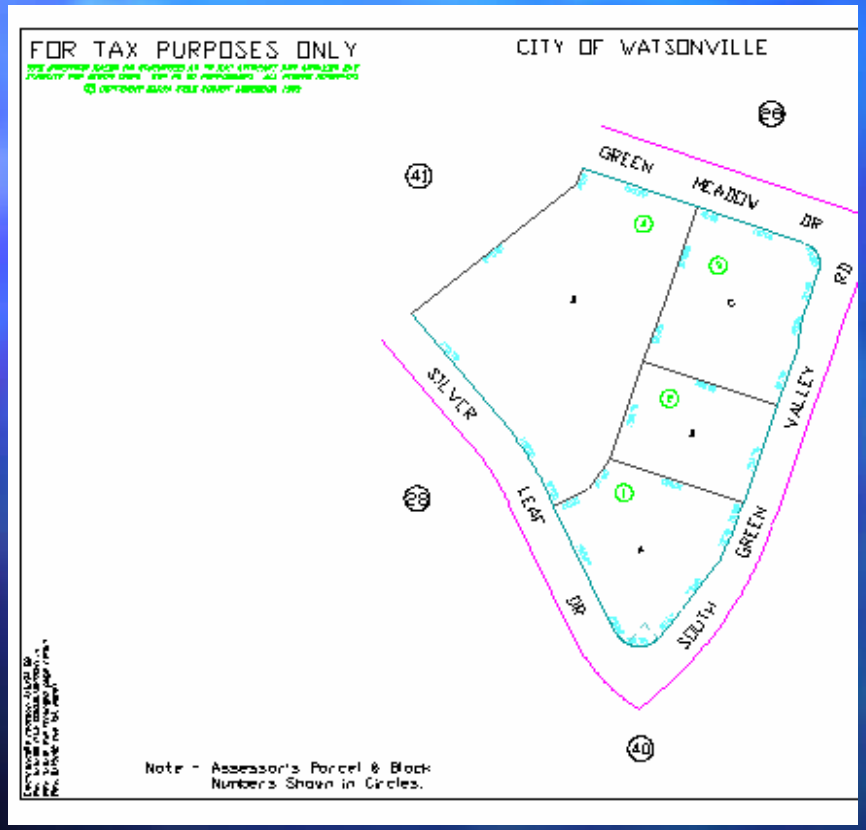


DATA MAINTENANCE PROCEDURES

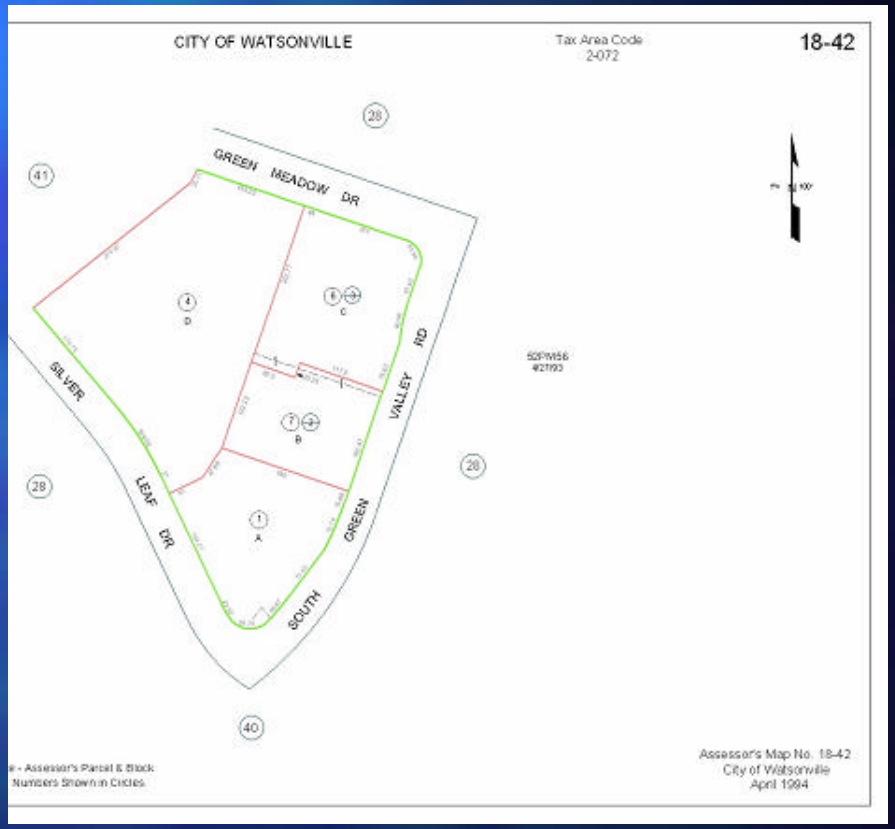
ASSESSOR MAP PAGES

"Experience is the name everyone gives to their mistakes"

Oscar Wilde

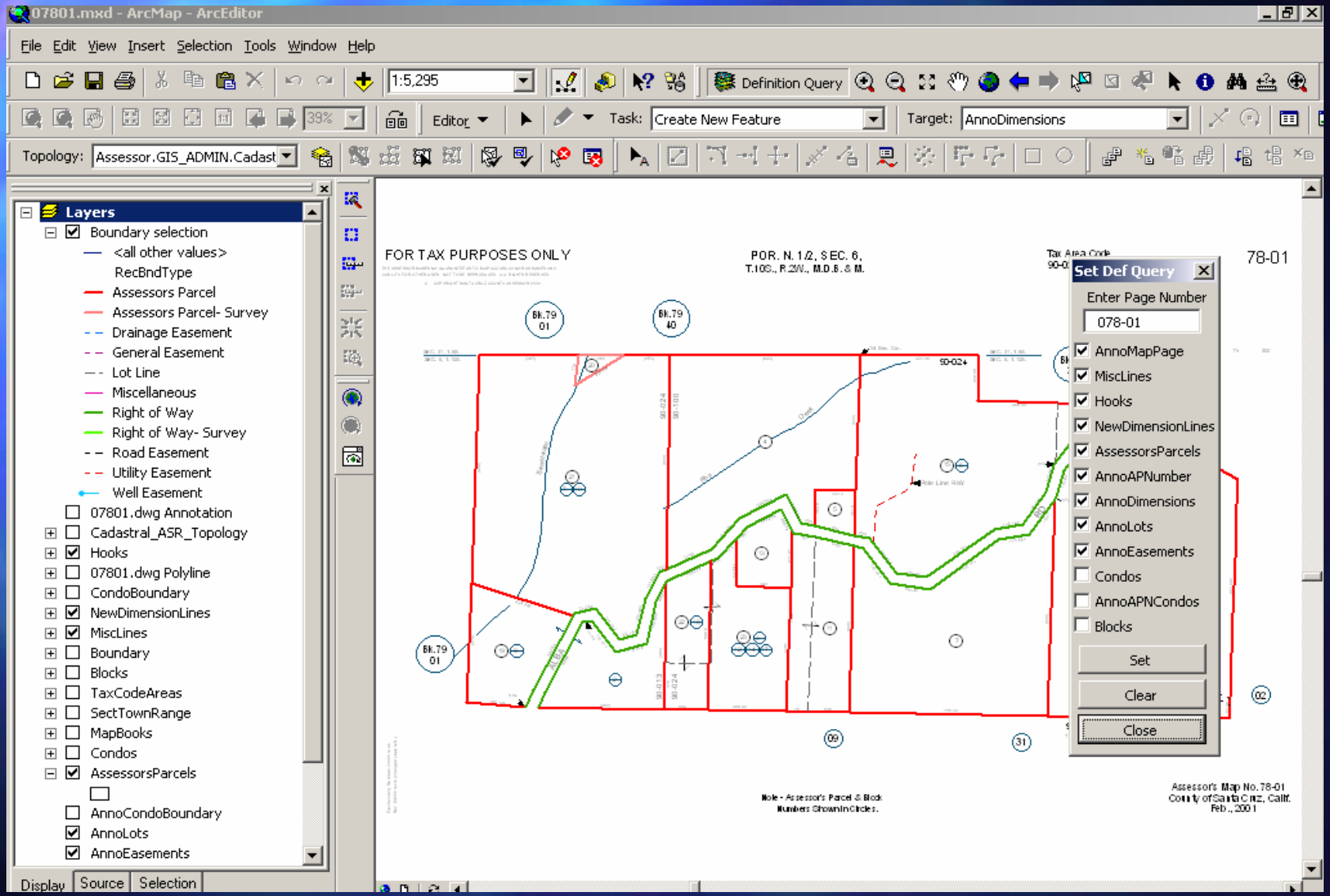


AutoCAD



ArcMap

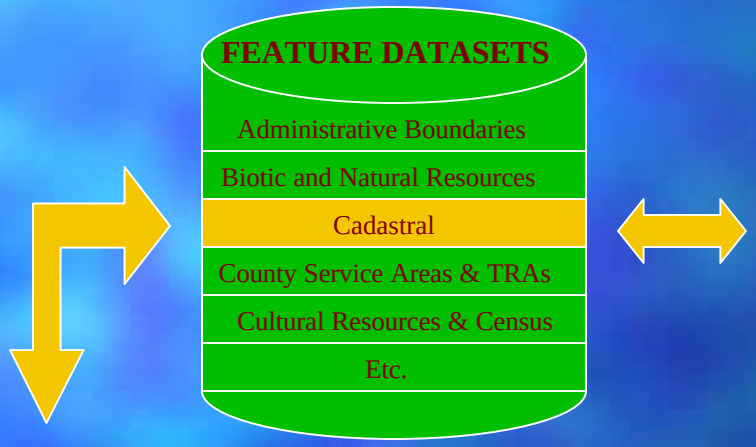
DATA MAINTENANCE PROCEDURES



SERVING UP THE DATA

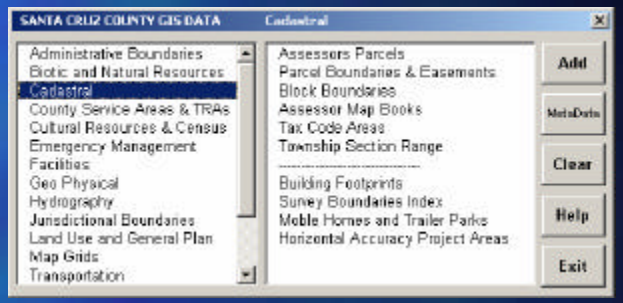
GEODATABASE AND THE DATA MENU APPLICATION

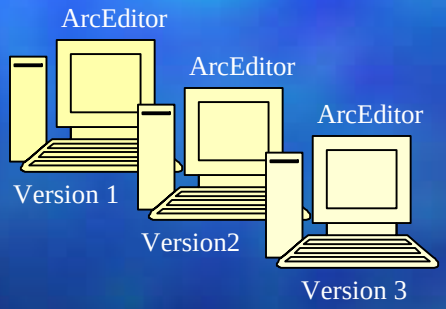
ArcSDE
Geodatabase



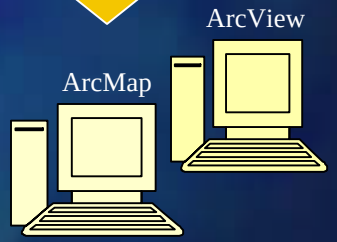
Data Menu Application

Feature Data Sets Feature Classes





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