Land Information Systems (LIS)

- These applications are based on necessary land surveys and ownership records
- In addition to land issues, these applications also integrate other data sets including key infrastructures
- Digitizing these data sets will make access and storage more efficient

LIS

- Because of historical contexts varies (even within the US), the accuracy of LISs varies
  - Metes & Bounds versus Township & Range
- Government context matters too!
  - In the UK base mapping is performed at 1:1250 opposed to 1:24000 or 1:50000 in the US

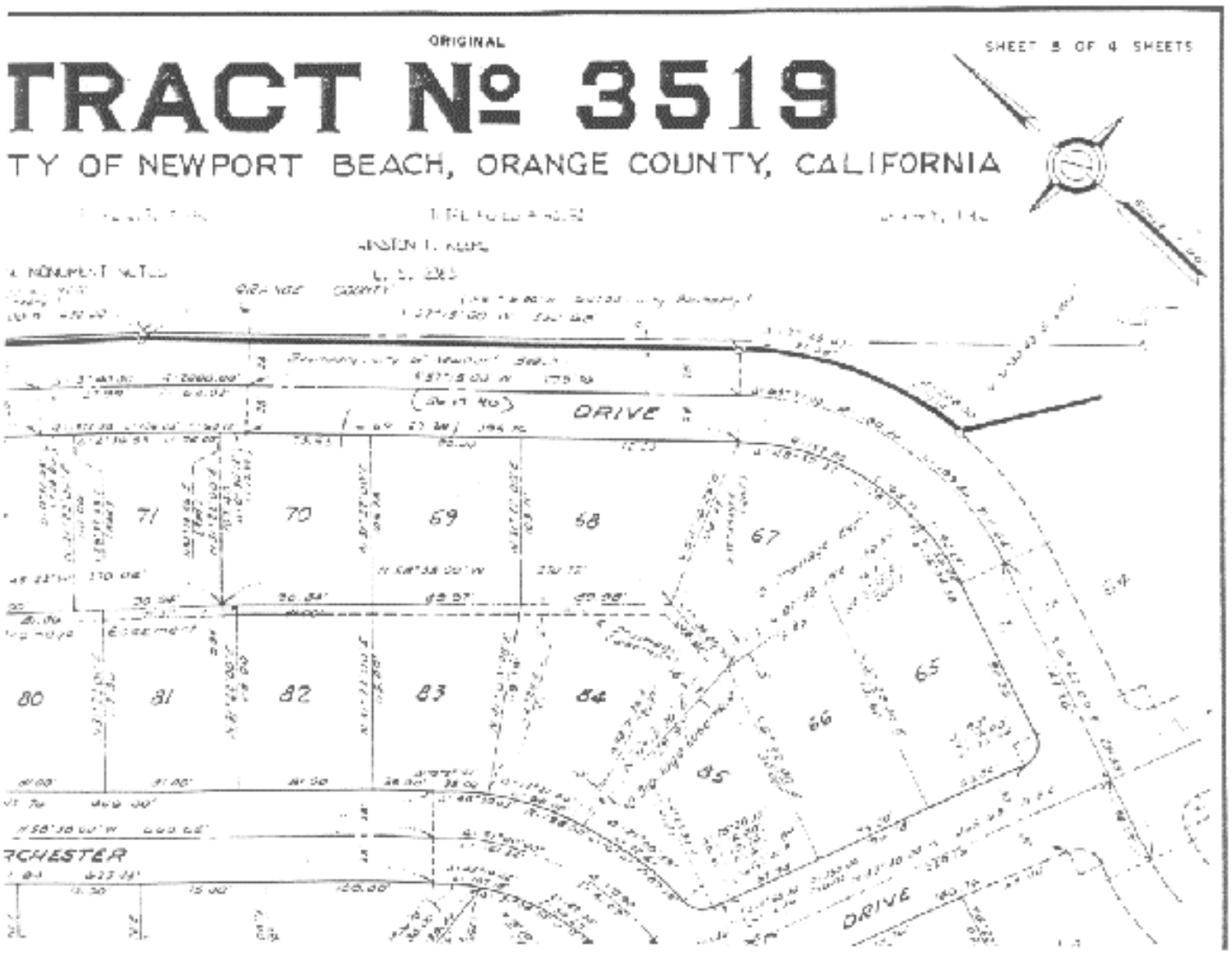
LIS

- Accuracy of Data and Overlapping Jurisdictions
  - over 85k local governments
  - 108 Million taxable parcels in the US
  - most land records are stored in competing data structures or unrelated formats
  - “Pen & Ink” methods pre-date the constitutions
  - Over 75% of all transactions in local government involve record data
    - leading to additional typographical error

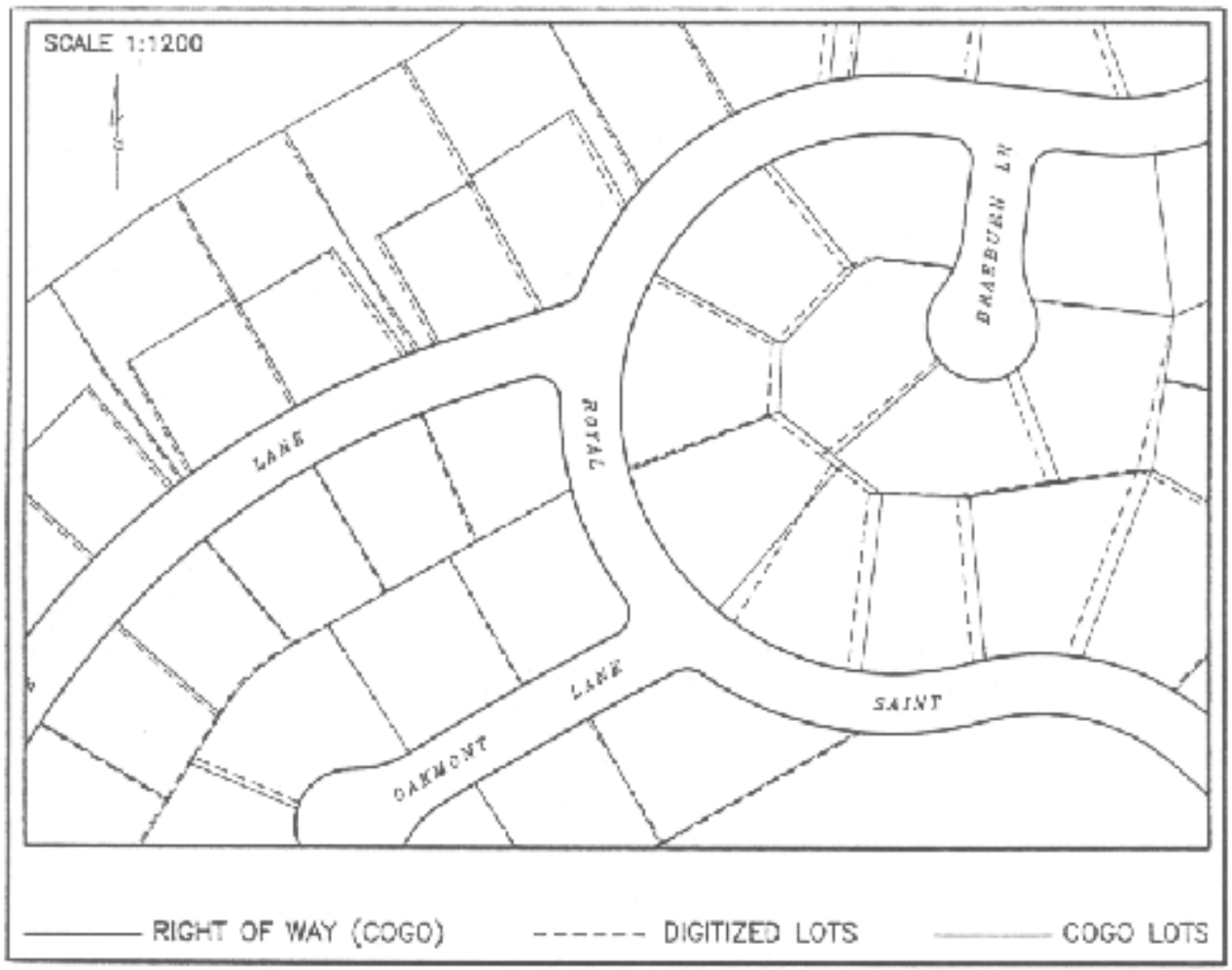
LIS

- Most detailed and accurate data based on the 'cadaster' or official record of land ownership
  - highly detailed large scale maps

GEO 448 GIS APPLICATIONS



GEO 448 GIS APPLICATIONS



LIS

- Accuracy
  - LISs based on cadastral data are based on plane surveys and are tied to known geodetic control points
  - basis of planer enforcement concept in GIS
  - debate continues over whether or not relative accuracy will replace absolute accuracy in the future

LIS

- The parcel is the smallest unit in any LIS
- Each parcel is positioned within the ‘tax roll’ based on ownership, size, improvements, & value

Why Implement A Parcels Project?

- Case 1
  - land deeds are filed with the Clerk of the Courts
  - a microfilm copy of the microfilm is given to the Assessors
  - Assessor abstracts microfilm deed to create accessible 'mainframe' record
  - copy of deed is used to update existing (but separate) parcel database
  - new parcels and subdivisions are entered into an automated mapping system
  - The assessor's abstracted parcel data for tax purposes does not result in a one-to-one correspondence with parcel database..end result NO LINK BETWEEN MAP & ATTRIBUTE

Why Implement A Parcels Project?

- Case 2
  - In a metropolitan area 25+ governments maintain 110+ sets of legal maps used by multiple governments
  - Parcels & Improvements are mapped up to 6 times using digital and manual techniques at various scales by governments
  - Digital data conversion is not uniform in terms of technique or software compatibility
  - A single large-scale parcel database would increase efficiency, decrease duplicated efforts, and create an area-wide GIS standard

Beyond Parcels to LIS

- The LIS integrates core parcel data with other 'overlay' data
- An LIS includes various types of geographic data and is intended to add more data beyond standard parcel data
  - zoning information, land cover, demographics
- Developing a LIS would allow core parcel data sets to be used across city government
  - planning, policing, fire protection

Practical LIS

- Optimal Routing
  - emergency planning
- Owner Notification
  - an LIS can be sued to inform owners of a proposed zoning change relating to an adjacent or nearby parcel

Greene County LIS

- Real Time Query
  - ESRI IMS