

PARCEL IDENTIFICATION CRITERIA


- ◆ **Simplicity**
 - Should be easily understood and easily usable
 - Ease transition period
 - More inclined to use system
 - Simplest – one that assigns completely new parcel identifier whenever boundary changes
 - Identifier should be reasonably permanent
 - Avoids confusion

PARCEL IDENTIFICATION CRITERIA

- ◆ **Uniqueness**
 - One-to-one relationship
 - Each identifier should be assigned to one and only one entity
 - Each entity should have one and only one identifier
 - Ease of maintenance
 - Update for changes as subdivision and consolidation of parcels


PARCEL IDENTIFICATION CRITERIA

- ◆ **Accuracy**
 - Important if spatial information be contained in identifier itself
 - Statistical sampling
 - Parcel identifies that facilitate wider use of statistical sampling help reduce costs of research and evaluation studies
 - Point location and relocation
 - Point location requires sufficient geographical accuracy to return to a specific physical location




PARCEL IDENTIFICATION CRITERIA

- ◆ Flexibility
 - 2 aspects of flexibility
 - Be compatible with various systems currently in place
 - Incorporate future advances in computer hardware & software for land-data systems
 - Data coordination – advantages of data coordination relative to temporal and functional dimensions



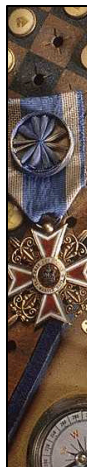
PARCEL IDENTIFICATION CRITERIA

- ◆ Economy
 - Special emphasis on the ability of identifier systems to utilize computer technology
- ◆ Accessibility
 - Concerned with the availability of information that is needed for assignment and interpretation of parcel identifiers




TYPES OF IDENTIFIERS

◆ Entity	◆ Location
– Signifies existence	– Describes physical location
– May or may not indicate location	– Geocode – involved spatial or relational relationships




CLASSES OF IDENTIFIERS

◆ Hierarchical	◆ Coordinate-based
– Identifies parcel within an aggregated political unit	– Utilize coordinates




RECORDING DISTRICT, VOLUME NUMBER, FOLIO NUMBER

- ◆ Used by Register of Deeds
- ◆ Based on Journal Principle
- ◆ **Most Efficient** for numbering documents stored in sequential pattern
- ◆ **Not Recommended** - arbitrary with respect to location



RECORDING DISTRICT, REGISTERED PLAN NO., PARCEL NO.

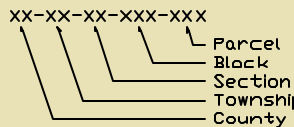
- ◆ Example: platting process
- ◆ **Useful** when identifying parcel within subdivision
- ◆ **Not Recommended** - arbitrary with respect to location



RECTANGULAR LAND SURVEY SYSTEM

- ◆ Codes identify town-ship, section, quarter-section, block and parcel
- ◆ Example: Michigan

XX-XX-XX-XXX-XXX



Parcel
Block
Section
Township
County



RECTANGULAR LAND SURVEY SYSTEM

<ul style="list-style-type: none"> ◆ Advantages <ul style="list-style-type: none"> - Number is exact and legal description - Townships appear on most maps - Familiar - Number provides relative location 	<ul style="list-style-type: none"> ◆ Disadvantages <ul style="list-style-type: none"> - Fails for subdivisions less than quarter-section - Some lots do not fit into scheme - Not universally available
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MUNICIPAL UNIT, MUNICIPAL SUBUNIT (BLOCK) NO., PARCEL NO.

- ◆ Blocks follow relatively permanent boundaries
- ◆ Recommended system
 - FIPS code commonly used in government
 - State & county boundaries stable - undergo very little change
- ◆ One proposal FIPS code
 - 2 digits - state code
 - 3 digits - county, parish or ward
 - 4 digits - city
 - 4 digits - block
 - 4 digits - parcel

MAP NUMBER, PARCEL NUMBER

- ◆ Ex: Fairfax County, VA
- ◆ Grid lines on map

1102117030219A1

- Change Index
- Parcel Number
- Legal Block Designation
- Subdivision Tract
- 1:1200 Maps
- 1:2400 Maps
- 1:4800 Maps

MAP NUMBER, PARCEL NUMBER

- ◆ Ex: St. Louis County, Missouri

XX-X X X XXX

- Map Number
- Grid Number
- Quadrant Number
- Parcel Number

TRACT INDEX NUMBER AND PARCEL NUMBER

- ◆ Used instead of Grantor-Grantee index
- ◆ Advantage
 - Recording data within sequential numbering system
- ◆ Disadvantage
 - Number too complex for most users
 - Definition of tract - if administrative boundaries change could lead to future confusion

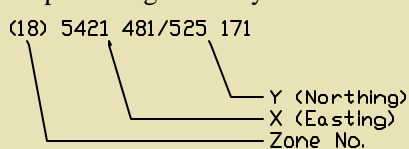
MUNICIPALITY AND STREET ADDRESS

- ◆ Advantages
 - Publicly displayed
 - Widely understood
 - Easily shown on large-scale maps
 - Can access many files with address
 - Form generally used in collecting statistical & planning data
- ◆ Most widely used identifier
- ◆ Disadvantages
 - Building identifier
 - Primary used in urban/suburban area
 - Street names change
 - Format not uniform
 - Address may occur several times

POINT NO. DERIVED FROM UNBLOCKED COORDINATES

- ◆ Perform major sort in one coordinate axis
- ◆ Minor sort in other
- ◆ Example: 1-m granularity from UTM

(18) 5421 481/525 171



POINT NO. DERIVED FROM BLOCKED COORDINATES


- ◆ Advantage
 - shortening number
 - accommodate accuracy into numbers

Example: Coordinates (X/Y) = 1234/5678
 Identifier: 15/26/37/48
 or 15/2367/48

Example:
 Northing: 102300.21'
 Easting: 404599.87'
 Identifier:
 10-40/230-459/09/28/17


REFERENCE POINTS FOR NUMBERING

- ◆ Centroid
- ◆ Center of Largest Inscribed Circle
- ◆ Average of All Coordinated Boundary Points
- ◆ Maggs' Center
- ◆ Para-Centroid
- ◆ Peripheral Reference Point
- ◆ Brockes' Coordinate Number




CENTROID

- ◆ Balance point
- ◆ Problems:
 - Point may not be in entity
 - Different properties may have same centroid
 - Computation difficult for irregular lots
 - Numerical Definition of boundary




CENTER OF LARGEST INSCRIBED CIRCLE AND AVERAGE OF BOUNDARY POINTS

- ◆ Center of Largest Inscribed Circle
 - Complex algorithm
 - Numerical definition of boundary
- ◆ Average of All Coordinated Boundary Points
 - Simple algorithm
 - Point may lie outside parcel




MAGGS' CENTER

- ◆ Extension of Average of Boundary Points
- ◆ Average most easterly and westerly point
- ◆ Average north and south on average easting line
- ◆ Advantage
 - Simple algorithm
 - Identification within boundary
 - Defines unique point
- ◆ Disadvantage
 - Numerical definition of boundary



PARA-CENTROID

- ◆ Choose visual center
- ◆ Does not require knowledge of boundary coordinates
- ◆ Different people interpret center differently




PERIPHERAL REFERENCE POINT & BROCKES' NO.

- ◆ Peripheral Reference Point
 - One consistent point on boundary periphery is chosen
 - Example - map sheet numbering
- ◆ Brockes' Coordinate Number
 - Called minimum and maximum or min-max
 - Derives a number from several points



ADVANTAGES OF COORDINATES AS PIN

- ◆ As location identifier, data uniquely and easily located
- ◆ Aggregation and evaluation possible
- ◆ Parcels can be automatically aggregated by computer by zones
- ◆ Facilitates computer display
- ◆ Allows use of analytical methods



DISADVANTAGES OF COORDINATES AS PIN

- ◆ Coordinates least understood identifier
- ◆ Requires coordinates at point where data assembled
- ◆ Not necessarily most efficient filing process in computer
- ◆ For manual/verbal processes, simpler number is better
- ◆ Numbers can become high



DISADVANTAGES OF COORDINATES AS PIN

- ◆ Definition of reference point is problem
- ◆ May not be unique number
- ◆ Problem identifying very narrow strips
- ◆ Lack of dense control
- ◆ Coordinates may change

HYBRID PARCEL IDENTIFIERS

- ◆ Phillips' proposal

xxxxx-xxxx-xx-xx

- FIPS State Code
- FIPS County code
- Minutes of Latitude
- Minutes of Longitude
- Tens digit Latitude
- Tens digit Longitude
- Units digit Latitude
- Units digit Longitude

HYBRID PARCEL IDENTIFIERS

- ◆ Moyer & Fisher Proposal - 10' level

xx-xxx/xxxxx-xxxxx

- FIPS State Code
- FIPS County Code
- SPC - Easting
- SPC - Northing