



Lesson 9: Land-Partitioning Systems

In this section you will learn:

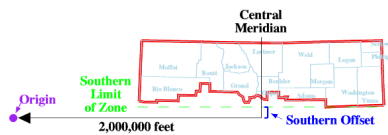
1. Cadastral systems and their significance
2. The U.S. Public Land Survey System

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State Plane Coordinates

North Zone of Colorado State Plane



Source: Dave Minkel of NOAA and Colorado State University.

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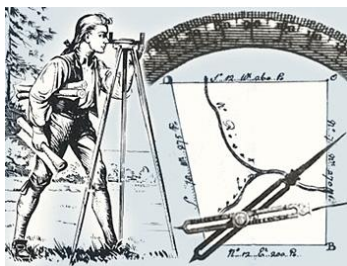
Land-Partitioning Systems

This section will explore common land partitioning systems used to subdivide the earth into meaningful parcels and record ownership. We will cover the basis of property descriptions and its relationship to land surveying in the United States.

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Land-Partitioning Systems

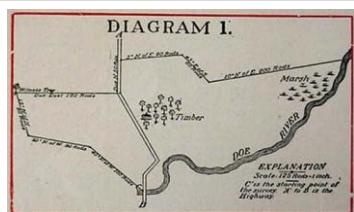


A young George Washington, land surveyor

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Metes & Bounds



"Beginning at a stone on the Bank of Doe River, at a point where the highway from A. to B. crosses said river (see point marked C. on Diagram I.); thence 40 degrees North of West 100 rods to a large stump; then 10 degrees North of West 90 rods; thence 15 degrees West of North 80 rods to an oak tree (see Witness Tree on Diagram I.); then due East 150 rods to the highway; thence following the course of the highway 50 rods due North; then 5 degrees North of East 90 rods; thence 45 degrees of South 60 rods; thence 10 degrees North of East 200 rods to the Doe River; thence following the course of the river Southwesterly to the place of beginning."

from: <http://www.cadastral.com/>

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French Long Lots

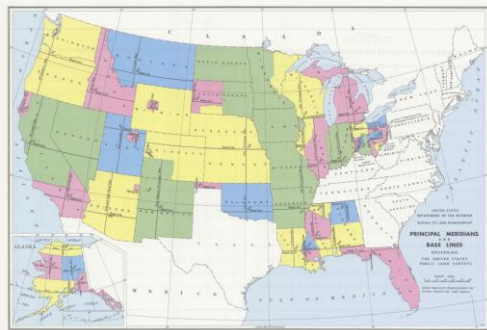


Remnants of French Long Lot cadastral geography near Vincennes, Indiana. Source: U.S.G.S. Digital Orthophoto Quads

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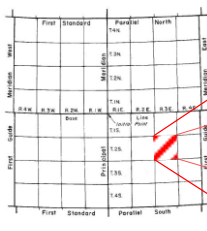
U.S. Public Land Survey System



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Townships (6mi × 6mi) referenced by township and range

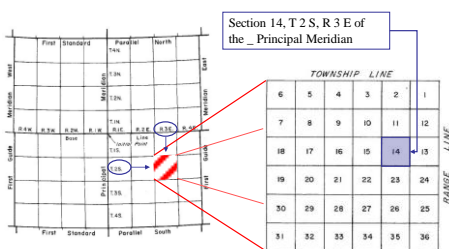
TOWNSHIP LINE					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

A standard PLSS township divided into 36, 1-mile × 1-mile sections; each section = 360 acres.

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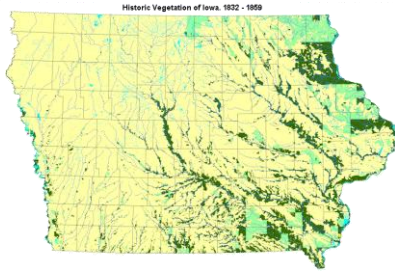


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U.S. Public Land Survey

The geography and history of cadastral systems, especially the US Public Land Survey System, is fascinating.



from: <http://www.gis.iastate.edu/pinfo/efosails.html>

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Lesson 9 : Land-Partitioning Systems

Again we've covered quite a bit of material, so let's recap some key concepts:

- State Plane zones are determined by the size and shape of the state. Small states may be covered in one zone, large states in 2 or more. State plane coordinates are projected to a conic or transverse conic base. NAD27 coordinate units are survey feet; NAD83 units are meters.
- Cadastral systems specify the rules by which land is partitioned for ownership, delineated on the landscape, and recorded for legal purposes. The U.S. Public Land Survey System divides the country into townships and sections and partitions land by aliquot parts (of a section).
- The metes and bounds system describes a parcel of property in terms of distances, directions, and visual cues. The term metes refers to measurements of distance and the term bounds to directions. The layout of a specific property is described from a point-of-beginning as a series of directions and distances, returning to the point-of-beginning.
- The principal cadastral system for the bulk of the United States is the **Public Land Survey System**. Created by Congress in 1785 in order to facilitate the settlement of new lands, the PLSS extends across 30 states and over 3 million square miles
- Legally, all land parcel boundaries are permanently tied to the section corner monuments established by the original PLSS survey. No matter what errors were made back then, or how accurate our survey instruments are today, **the historic description of a parcel is its true and permanent legal description**.

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