Spatial Data and Technology in Land Administration

Presenter: Jill Urban-Karr

Property Rights and Resource Governance

Issues and Best Practices

Washington, DC

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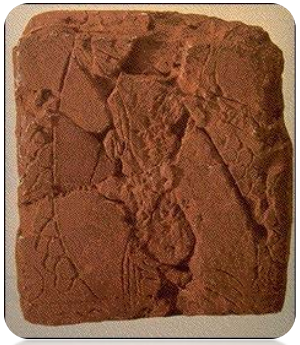
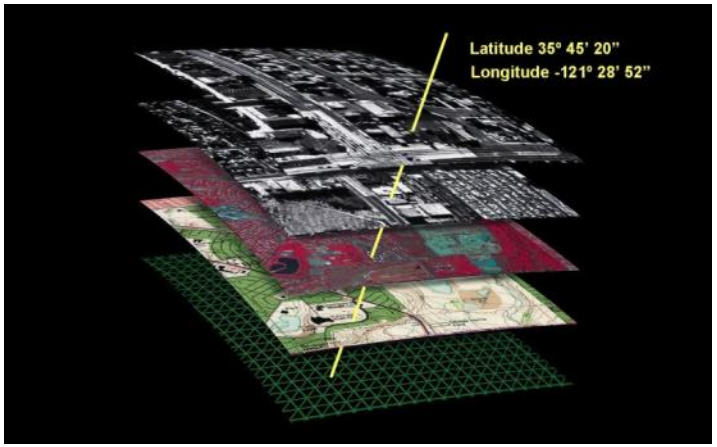
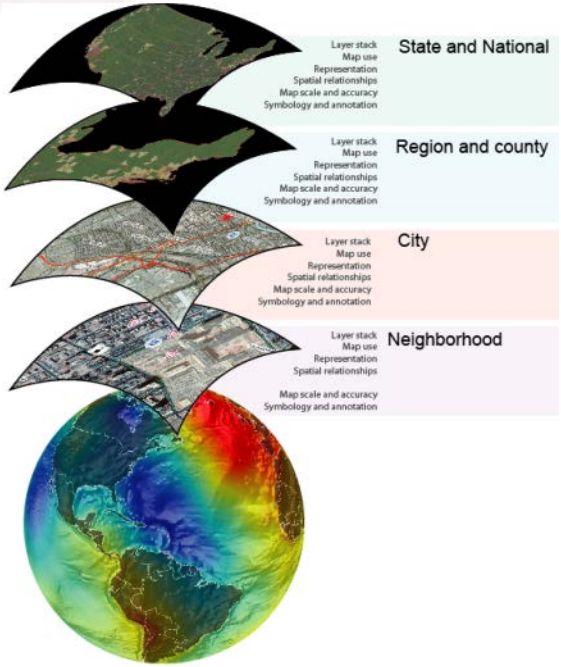
What is Spatial Data?

- *"the data or information that identifies the geographic location of features and boundaries on Earth"*



- Spatial Reference System
- Maps
- Imagery
- Geography
- Scale
- Time
- Twitter

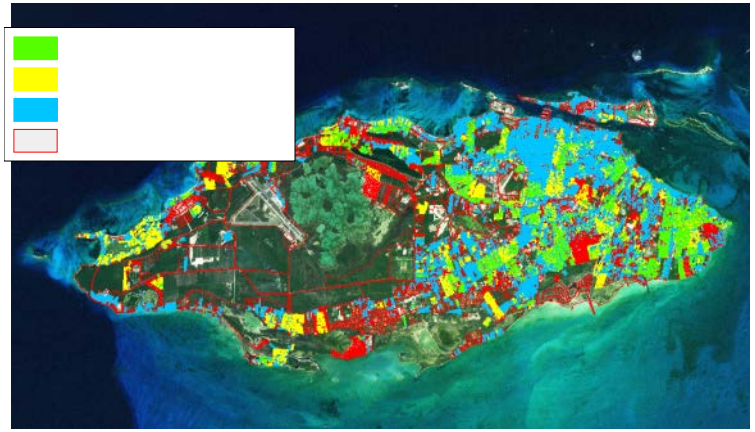


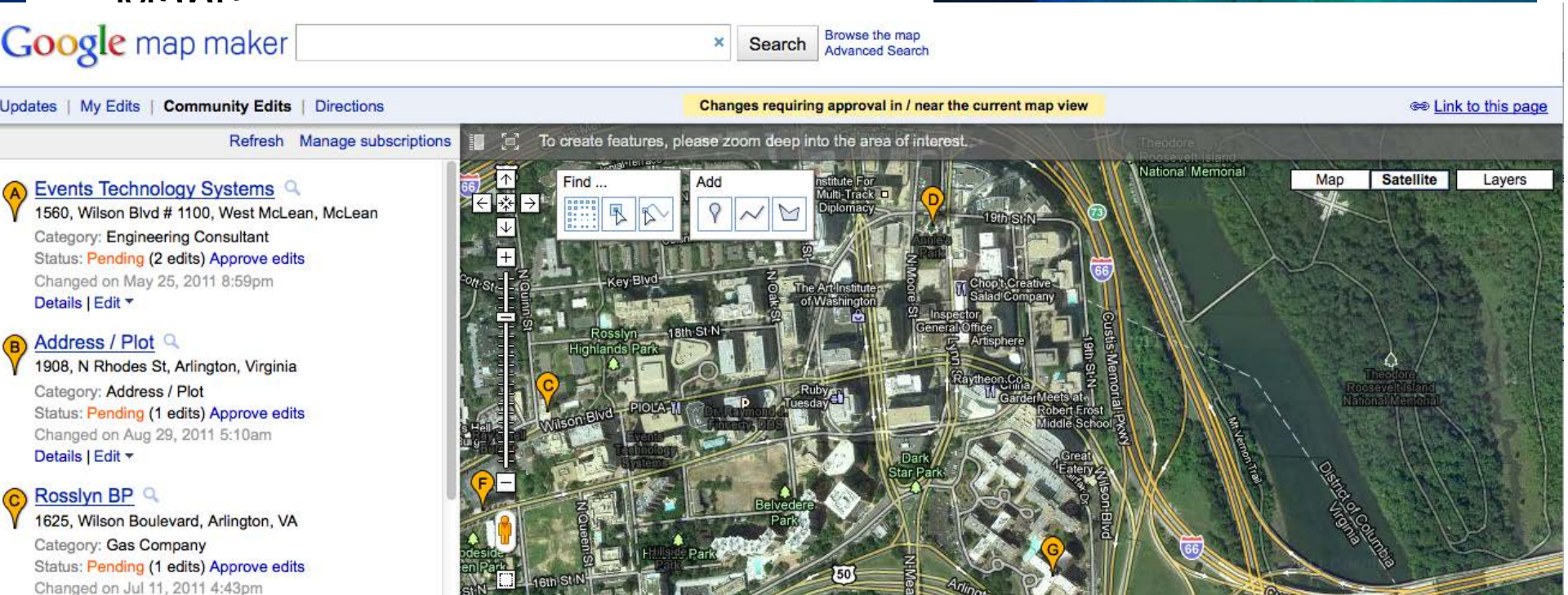


GIS/LIS – Geographic/Land Information Systems

"is a facility for preparing, presenting, and interpreting facts that pertain to the surface of the earth"

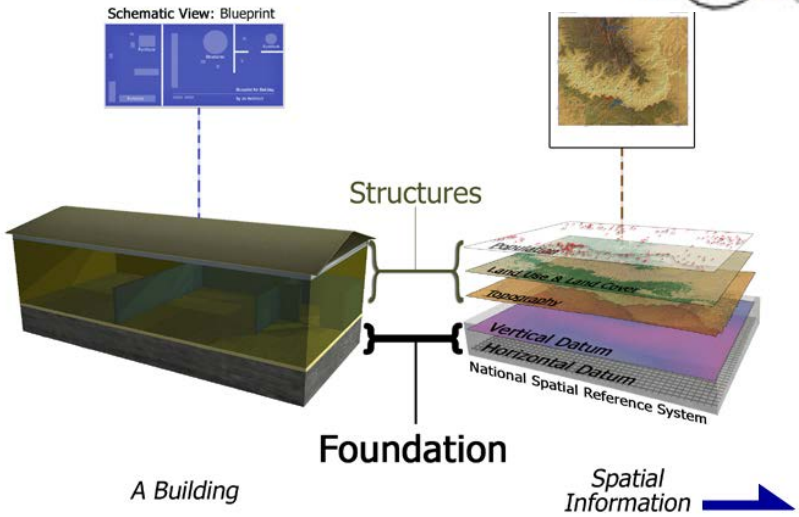
- Web Mapping
- Google Earth/Open Street Maps





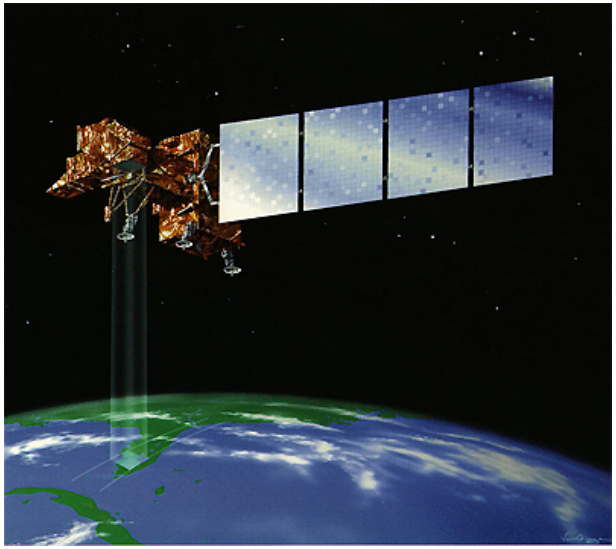
GPS-Global Positioning Systems

- Geodesy “science of measuring and monitoring the size and shape of the Earth”
- Developed by USDOD in 1978
- Constellation of 32 satellites
- GLONASS, Beidou, Galileo
- Time measurement
  - Distances i.e. Meter



Remote Sensing

- Satellites
- Aerial Photography
  - Nadir
  - Oblique
  - Video
  - LIDAR

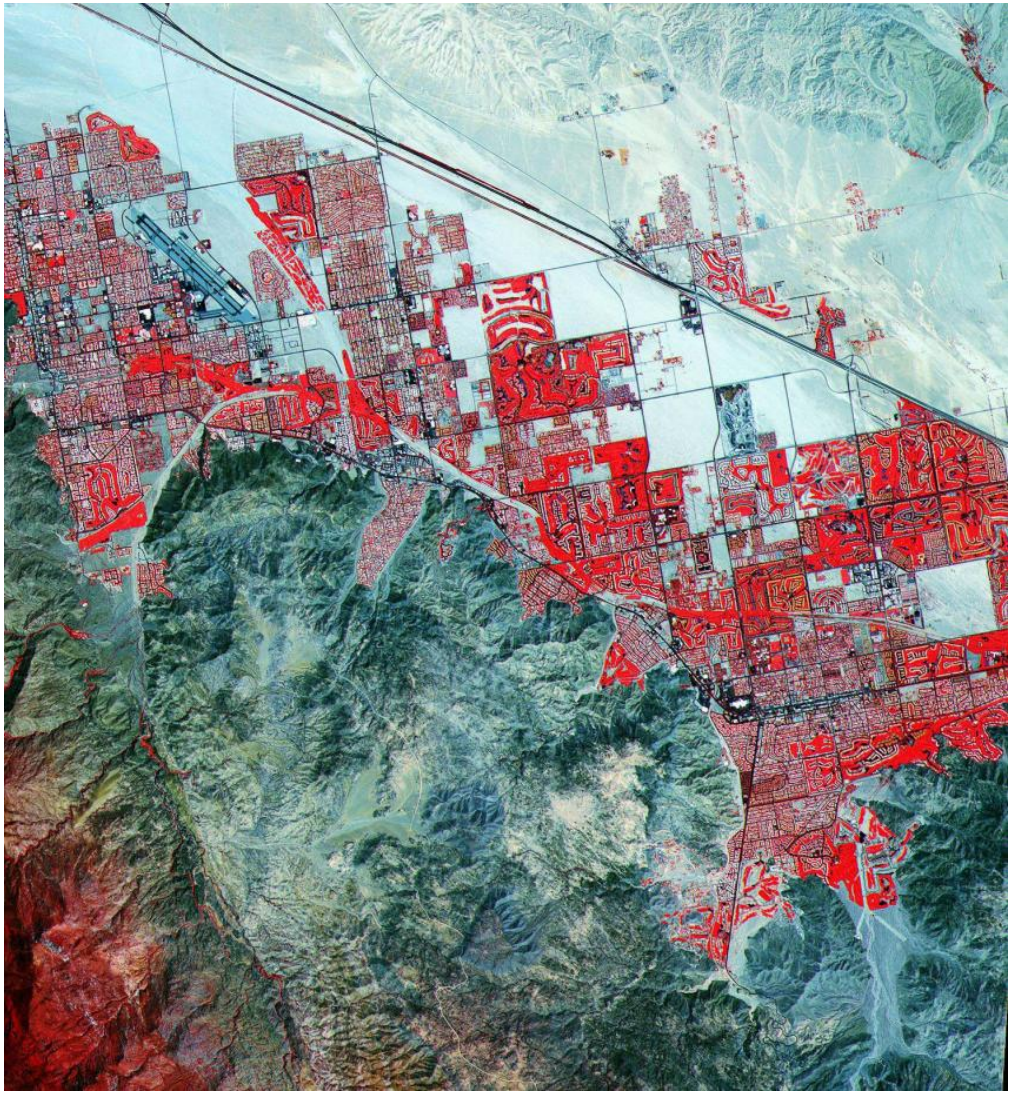


Remote Sensing-Aerial Photography

- High Resolution

Remote Sensing-Aerial Photography

- Medium Resolution

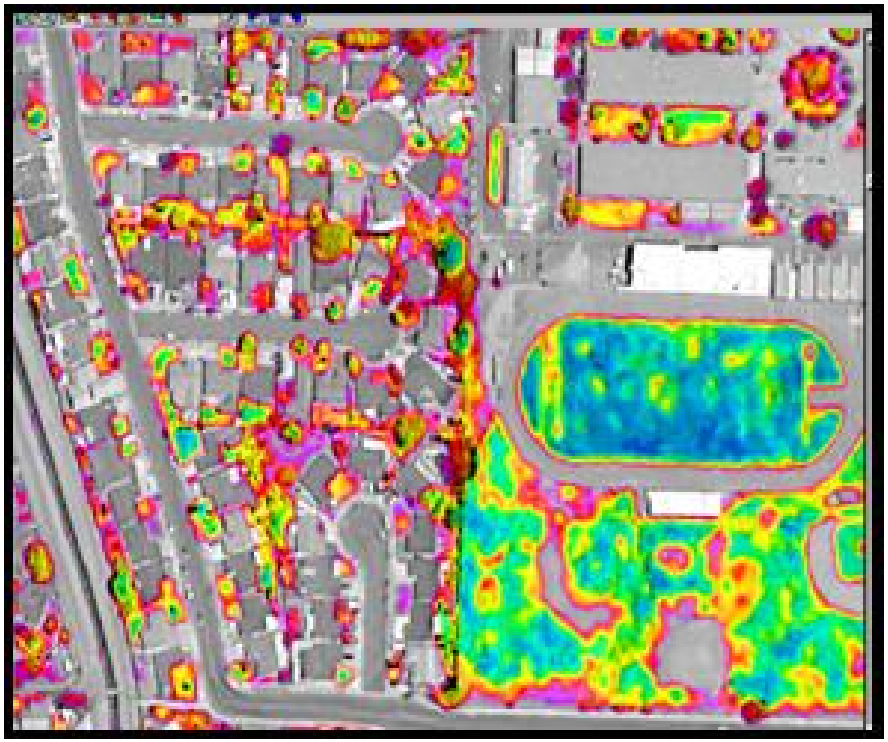


Remote Sensing-Aerial Photography

- Low Resolution

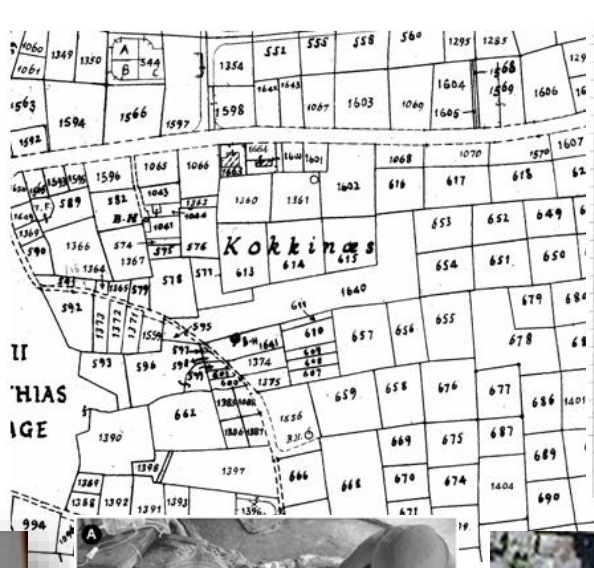
Remote Sensing

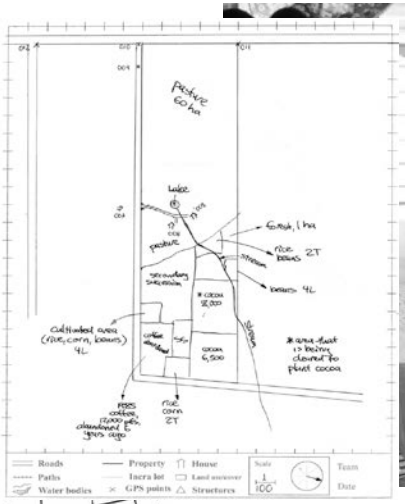
- Analysis



Approaches: Flexible Systems

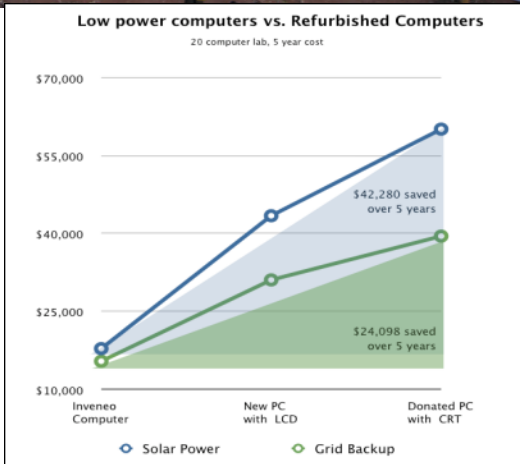
- Index maps
- Properties by Points
- Identify Features
- Local knowledge
- Evidence





Approaches: Appropriate Technology

- Cell Phones
- Solar Power
- Wifi/Cell networks
- GPS
- High Resolution Satellite Imagery
- Digital Still/Video Cameras
- Commercial off the Shelf Software/Open Source
- Web systems and data



5 year Total Cost of Ownership

	Inveneo Computer	New PC with LCD	Donated PC with CRT
Solar Power	$17,920	$43,520	$60,200
Grid Backup	$15,490	$31,153	$39,588

Points to Take Away

- Spatial data is key to property rights but also to many other development needs
- Collect once – use many times
- Use various modes of spatial data tools and gathering approaches

- Blending scales and accuracies is acceptable in data poor environments
- Spatial data has considerable value but must be maintained
- Maintenance requires good governance
- Emerging economies must look to partnerships with private sector to develop and sustain spatial data

"The global-positioning system says we're all in the wrong building."