Introduction to

Geo-informatics Applications in NRM

Geo-informatics

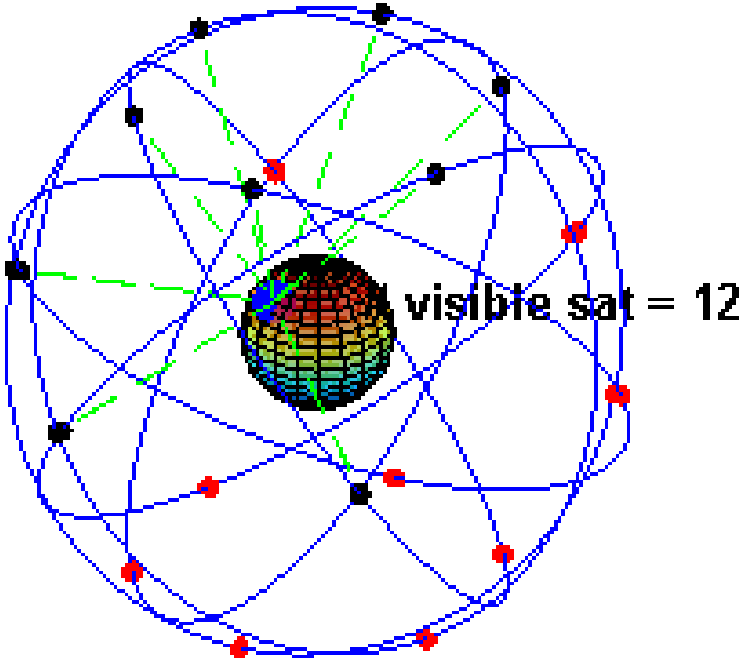
- Three Main Components:

  ✓ Global Positioning System (GPS)

  ✓ Remote Sensing (RS)

  ✓ Geographic Information System (GIS)

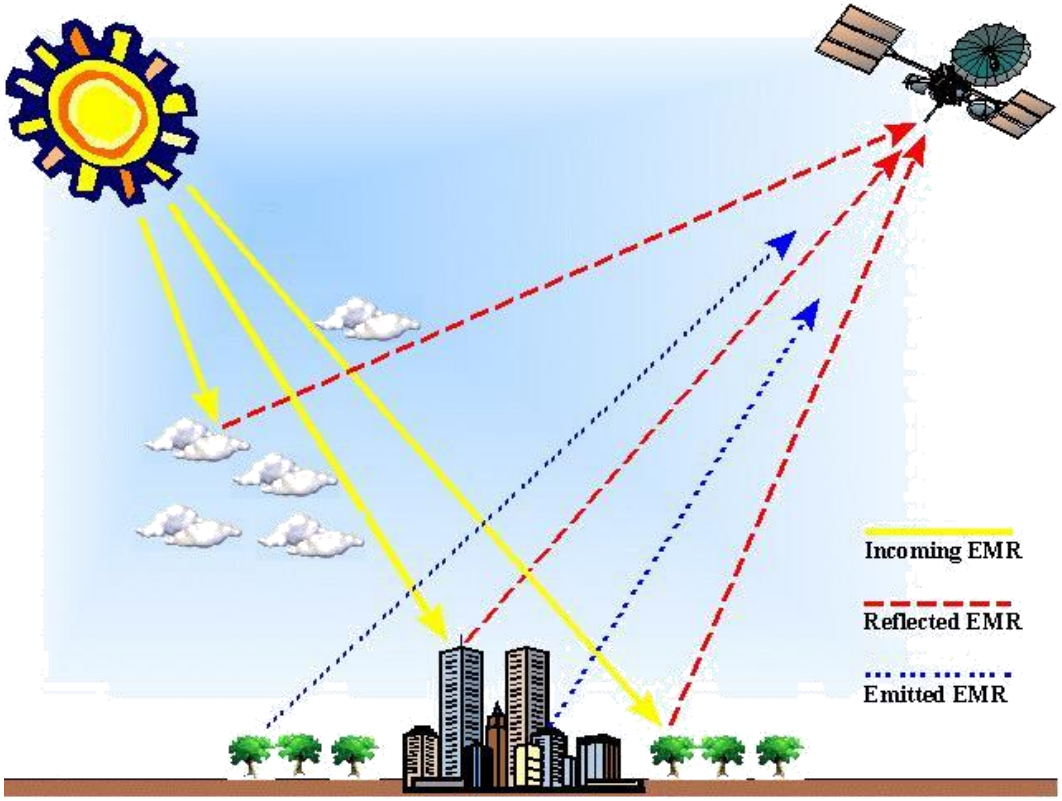
Global Positioning System refers to a system of satellites and receivers that allow people and devices to pinpoint their precise location on the earth.



Signals are received by a special electronic device called GPS Receiver

Satellite Remote Sensing

Remote Sensing is defined as the acquisition of information about an object without being in physical contact with it



Use of Earth orbiting satellites to capture information about the surface and atmosphere below

What is GIS?

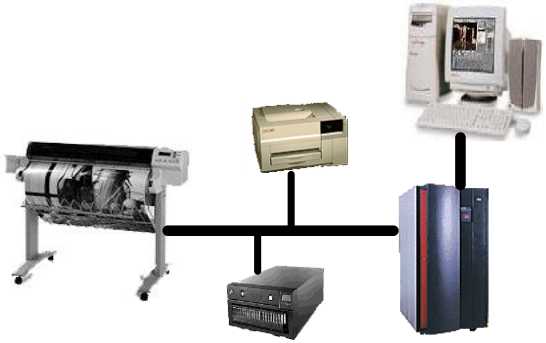
- **GIS is a Special kind of "Information System" that is used to**
  - Input
  - Manipulate
  - Store
  - Retrieve
  - Analyze
  - Output

geographically referenced data or geospatial data

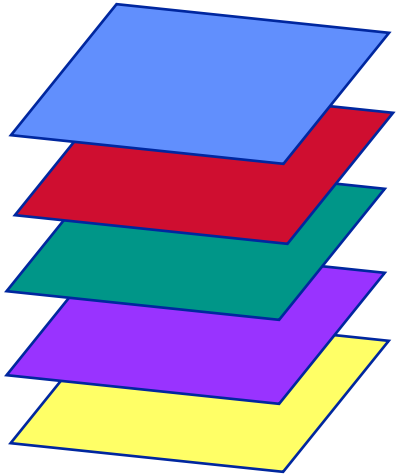
What is GIS

A GIS is a computer system capable of capturing, storing, analyzing, and displaying geographically referenced information; that is, data identified according to location.

It also includes the procedures, operating personnel, and spatial data that go into the system.



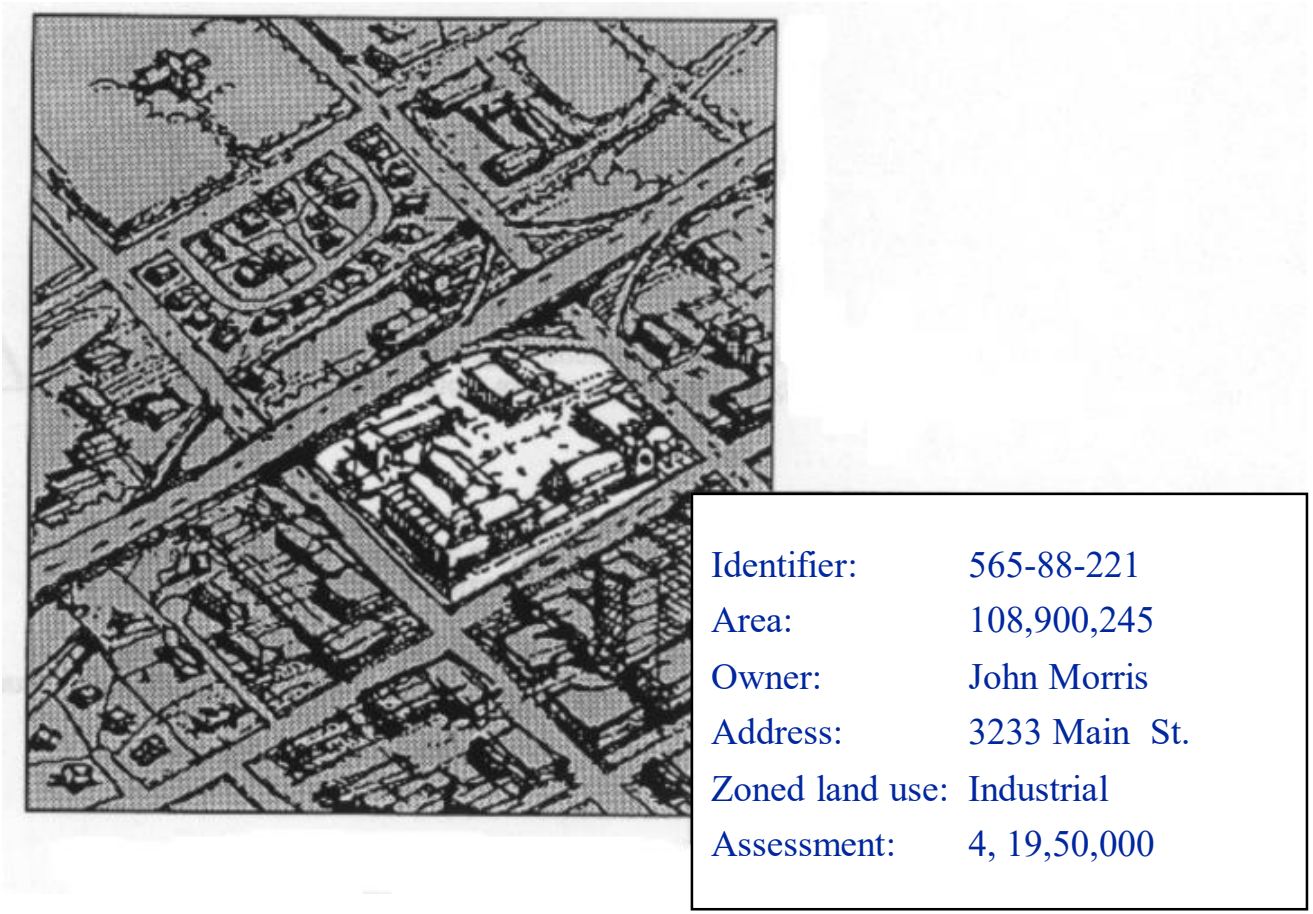
Computer Hardware & Software



Database

Organizational
Structure & People

GIS generates information - locations



Identifier:	565-88-221
Area:	108,900,245
Owner:	John Morris
Address:	3233 Main St.
Zoned land use:	Industrial
Assessment:	4, 19,50,000

Who owns the lot at 3233 Main Street, and what is it zoned for?

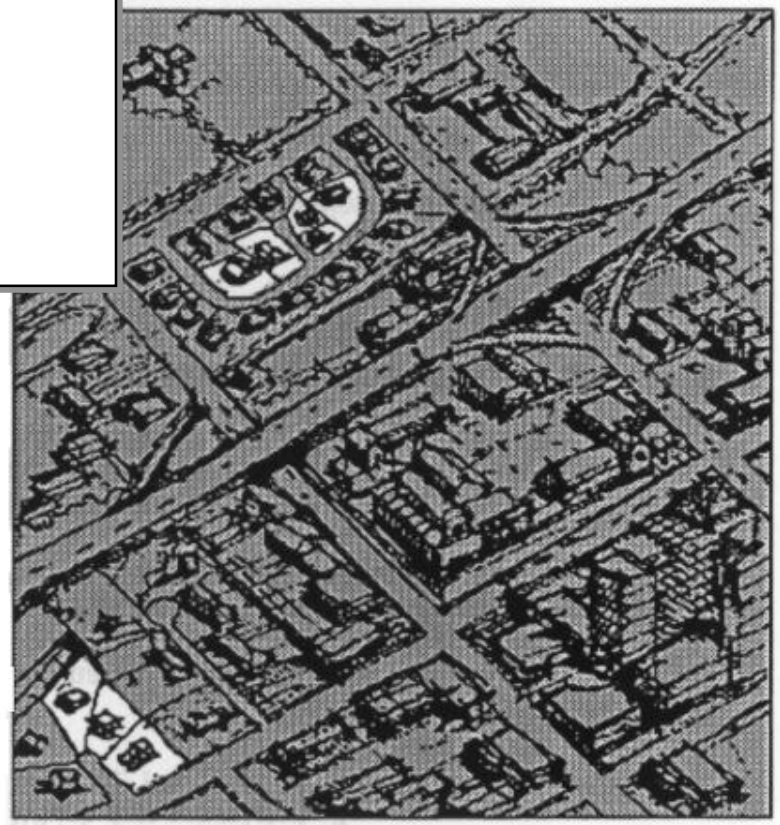
GIS generates information - conditions

Residential land use

Assessed at less than 20,00,000

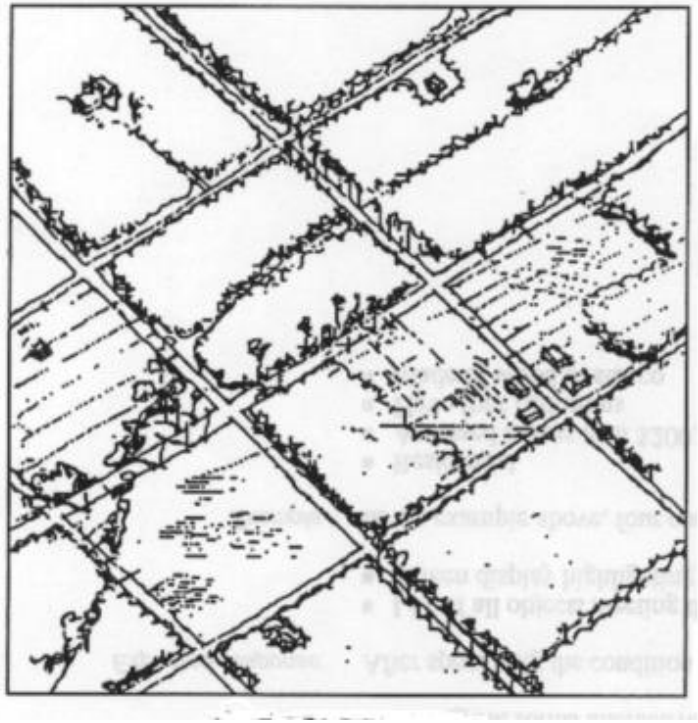
4 bedrooms

Ground and First



Where are houses located that you might consider buying?

GIS generates information - trends



Little Mount in 1950

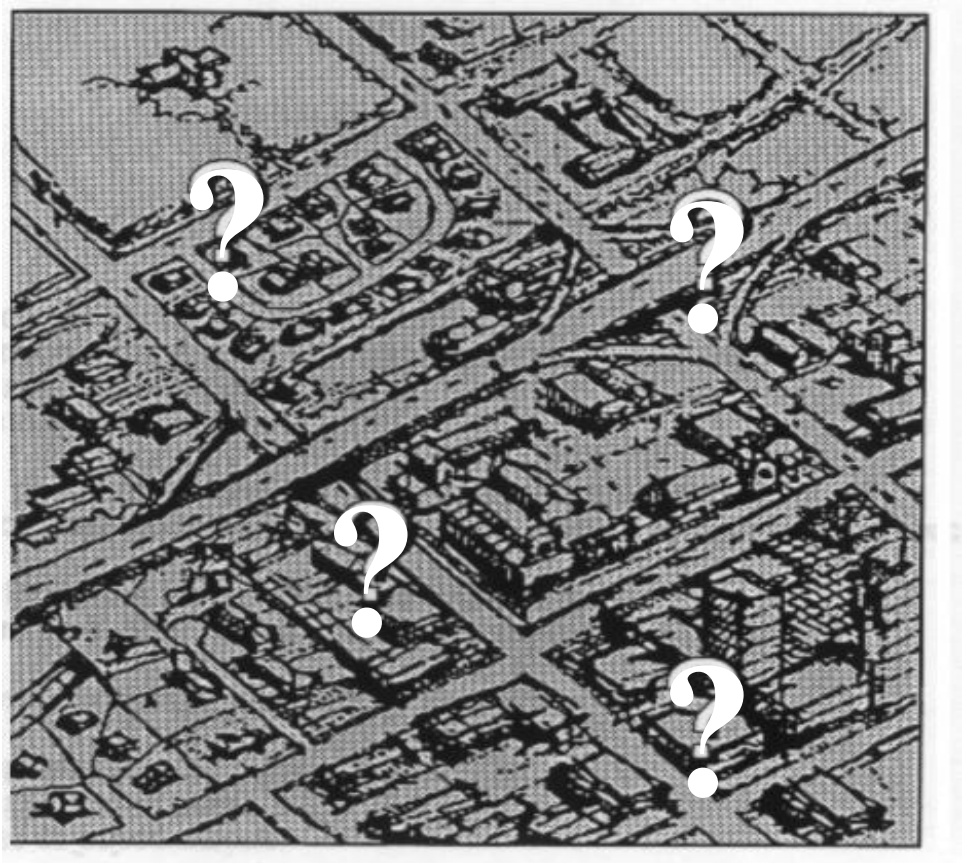
Little Mount in 1990

How much land has gone from agriculture to other uses since 1950?

GIS generates information - models

School

Hospital



Children's Bookstore

Restaurant

If you wanted to open a new facility, where would you locate it?

Major Areas of Practical Application of Geo-informatics in Natural Resource-Based

- forest management
- wildlife habitat, migration routes management
- wild and scenic rivers preservation
- recreation resources planning
- floodplain management
- wetland preservation
- agricultural lands management
- groundwater modeling and contamination tracking
- environmental impact analysis
- viewshed analysis

Major Areas of Practical Application of GIS Technology

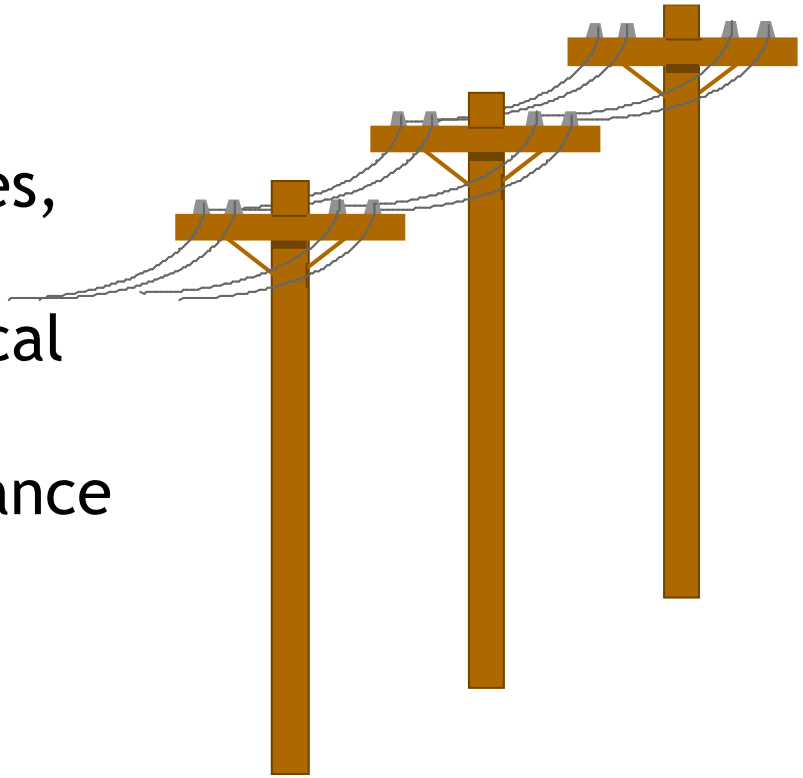
Street Network-Based

- address matching
- vehicle routing and scheduling
- location analysis, site selection
- development of evacuation plans

Major Areas of Practical Application of GIS Technology

Facilities Management

- locating underground pipes, cables
- balancing loads in electrical networks
- planning facility maintenance
- tracking energy use



Major Areas of Practical Application of GIS Technology

Land Parcel-Based

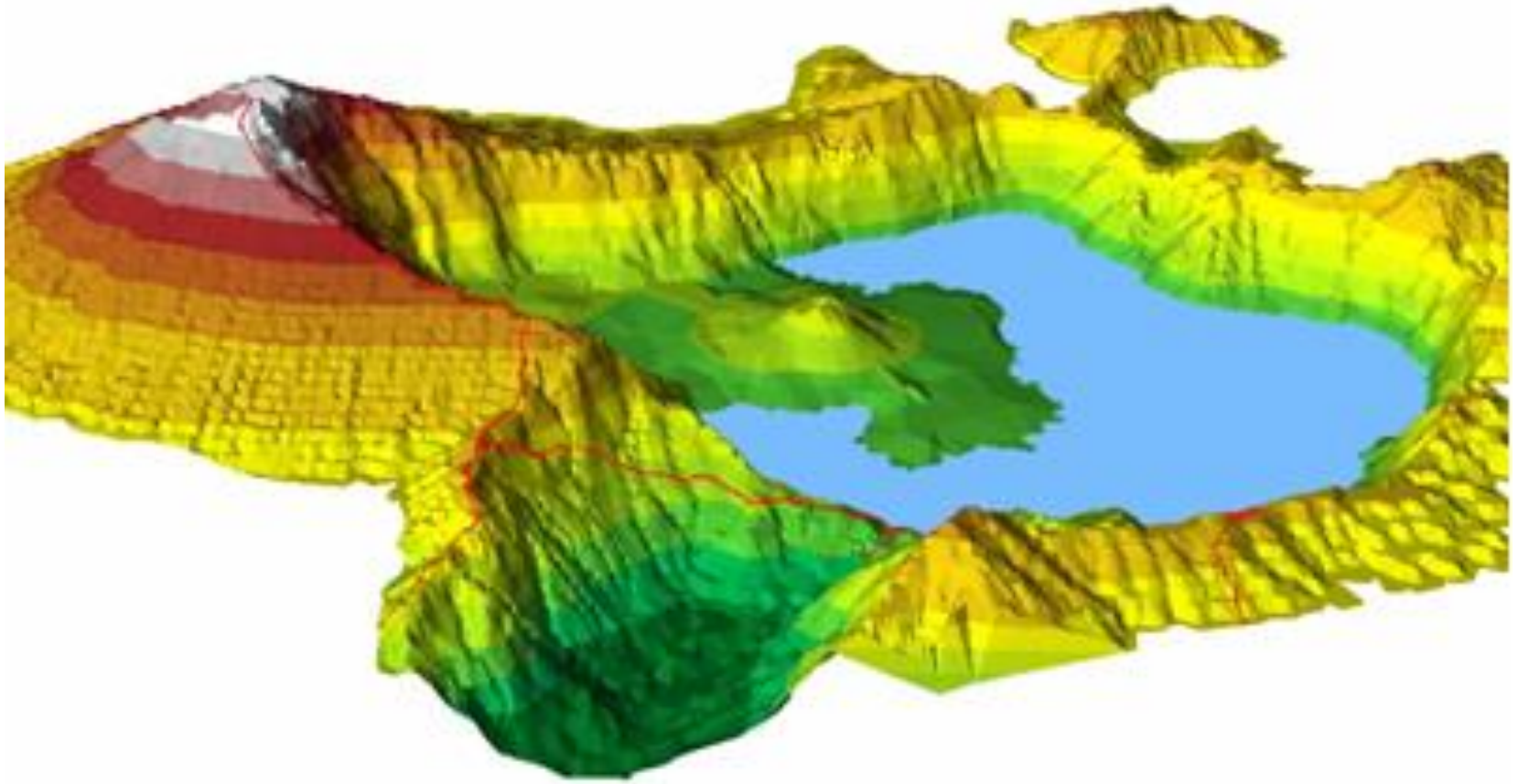
- zoning, subdivision plan review
- land acquisition
- environmental impact statements
- water quality management
- ownership of maintenance

GIS in Telecom

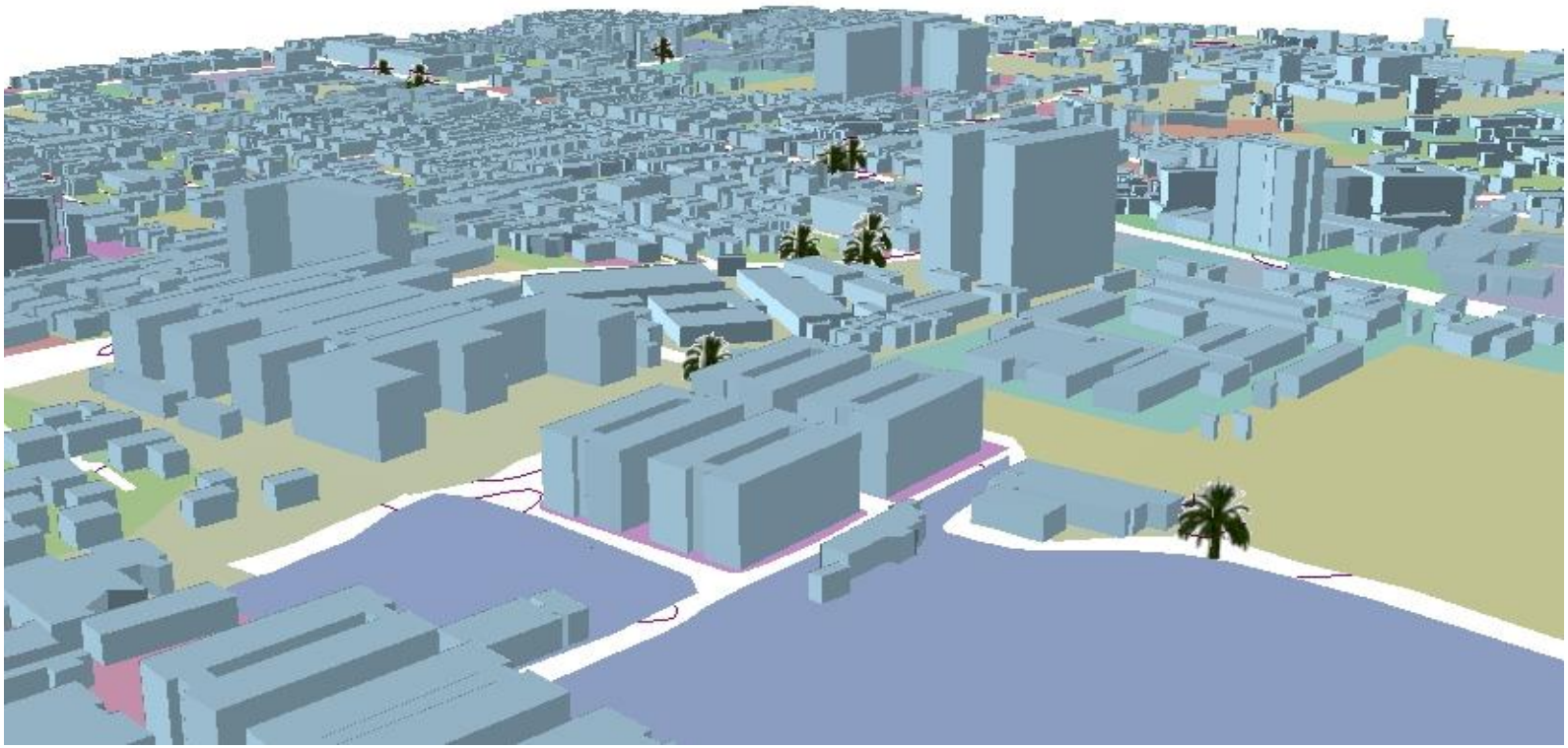
GIS / Telecom application are:

- Plan, design and engineer Network and expansion
- Placement of Trenches, Cables, Structures and facilities in the OSP
- Facility layouts, equipment placement and port-to-port connectivity
- Inventory management including equipment assignment
- Repository of As Built and survey data
- Provide network data to OSS / BSS systems
- Answer service activation / provisioning queries
- Cable fault localisation
- Several Sales, Marketing and Service fulfillment related functions

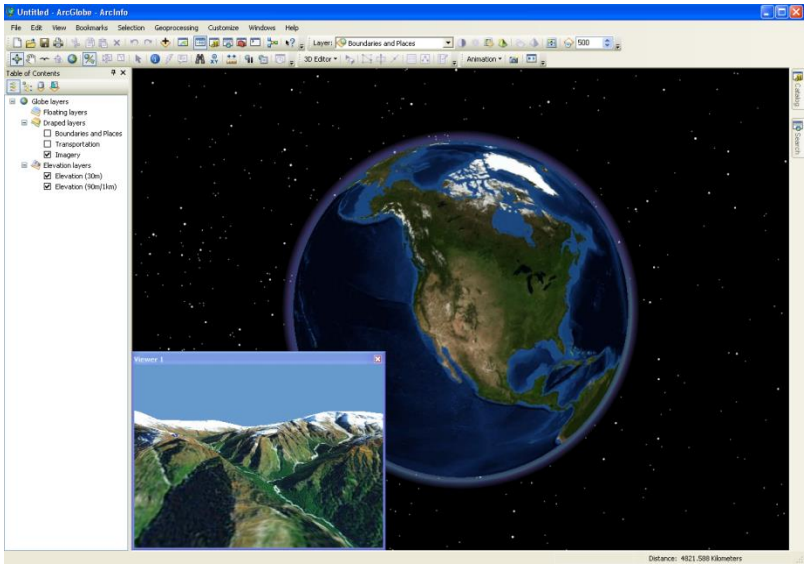
3D



3D



3D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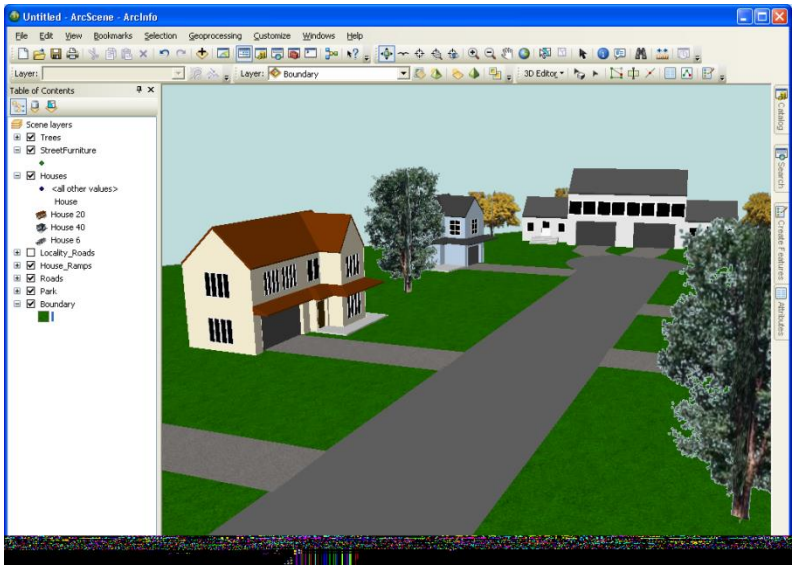
Viewer 1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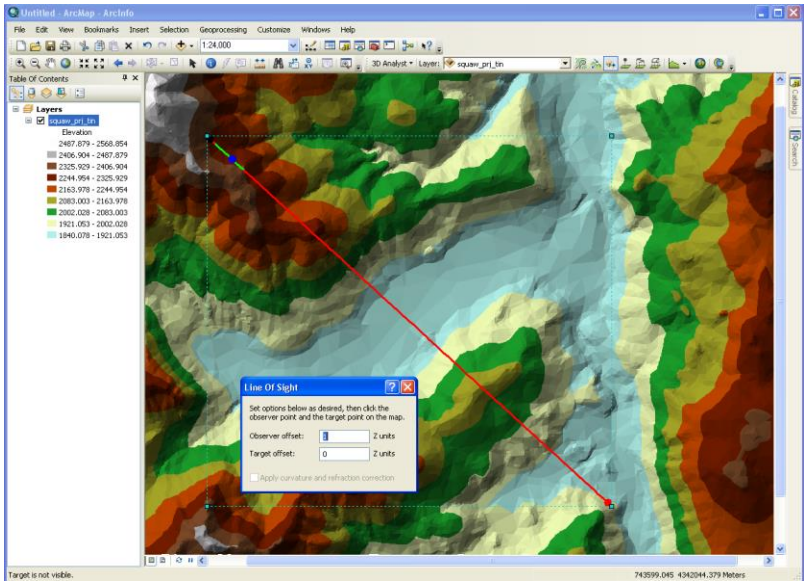
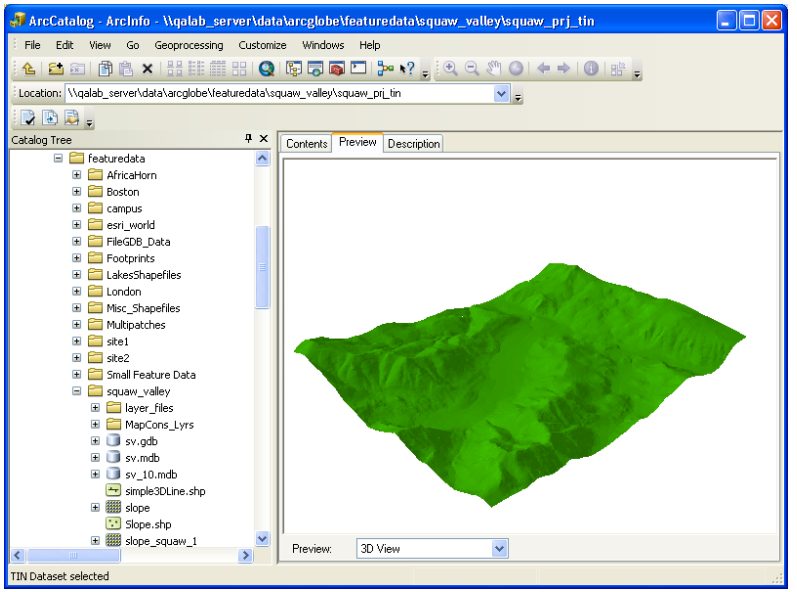
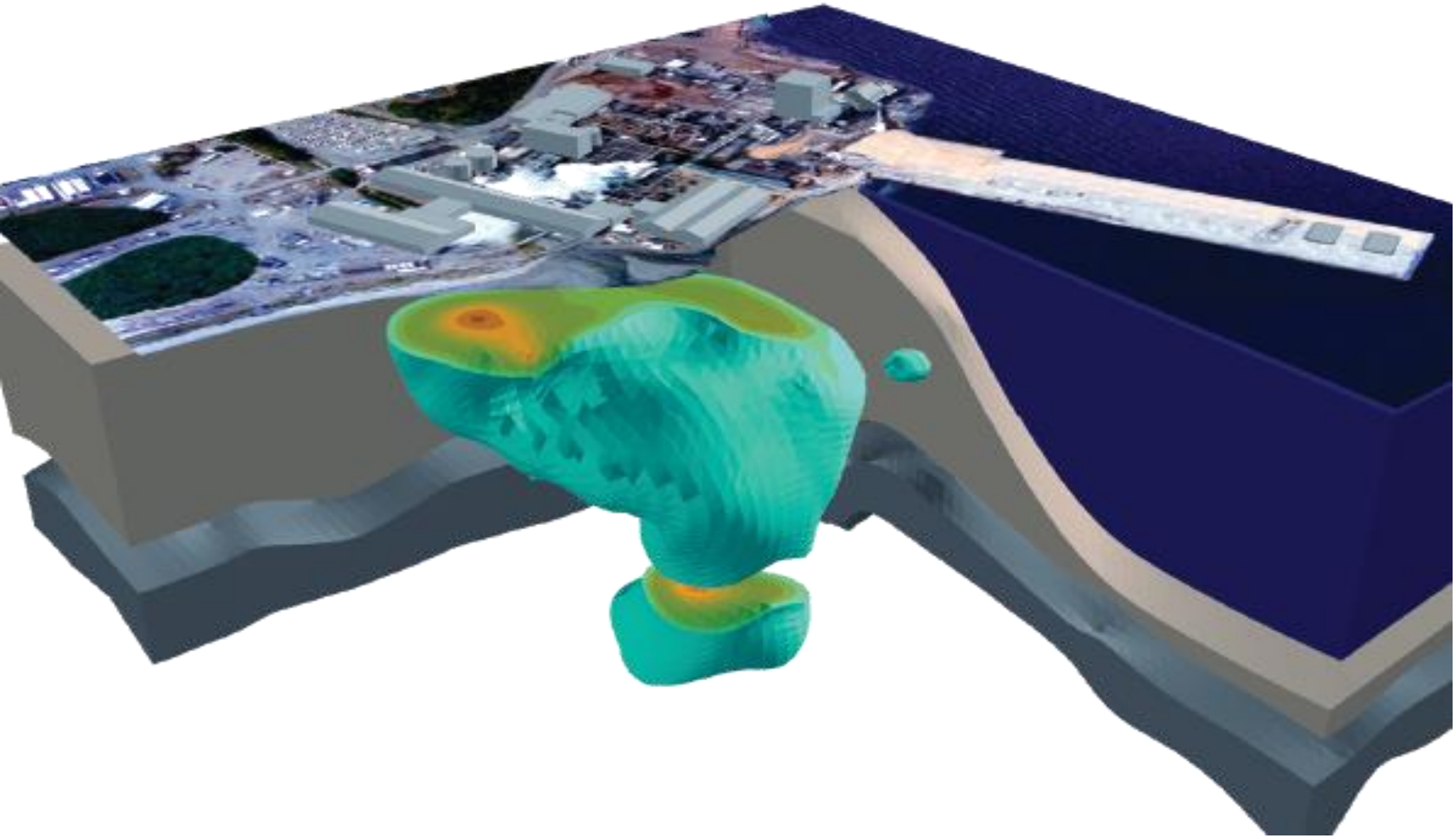
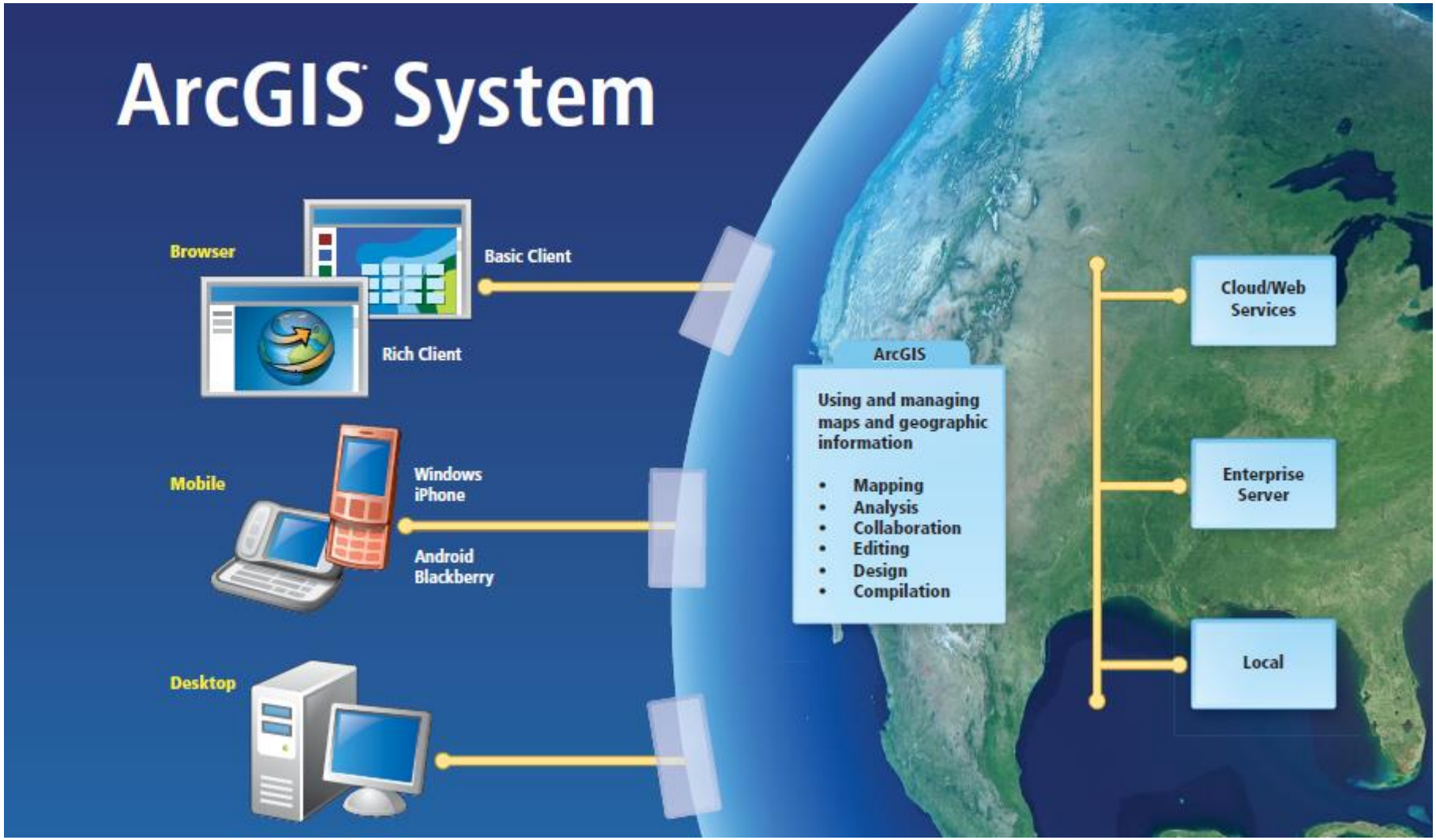

Untitled - ArcMap - ArcInfo
Line Of Sight


ArcCatalog - ArcInfo - \\qalab_server\data\arcglobe\featuredata\squaw_valley\squaw_prj_tin
Catalog Tree
Contents
Preview
Description
Preview:
3D View
TIN Dataset selected

3D




ArcGIS System
Browser
Basic Client
Rich Client
Mobile
Windows
iPhone
Android
Blackberry
Desktop
ArcGIS
Using and managing maps and geographic information
Mapping
Analysis
Collaboration
Editing
Design
Compilation
Cloud/Web Services
Enterprise Server
Local

Thank You!

Questions…?