

Geo Spatial Information Solution

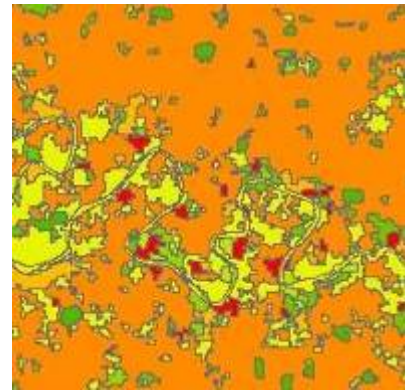
Geo-Spatial mapping division of CBSL has been established to provide high quality Mapping and Geo-spatial solutions to meet the demands and goals in the field. The Company is focused to meet the customer requirements through deployment of competent technical and scientific manpower with state of art infrastructure.

CBSL is specializing in Geographic Information Systems in addition to EDMS, BPO and other business solutions. It provides a wide range of mapping services on Consulting, Custom Mapping, GeoCoding, Data Conversion / Integration, Training in GIS, and GPS Services. We provide top-notch GIS solutions to businesses, government and educational institutions. The Division is headed by people of repute who worked for more than 20 years in Scientific institutes with ample expertise in RS and GIS applications. Our field of expertise lies in:

1. GIS & Remote Sensing in natural resources mapping

a. Mapping of Land use / Land cover

The land use categories like agricultural land, wasteland, water bodies, settlements etc with subclasses in each category interpreted for rabi, kharif and zaid seasons from satellite data and integrated to provide single / double / multi crop areas etc

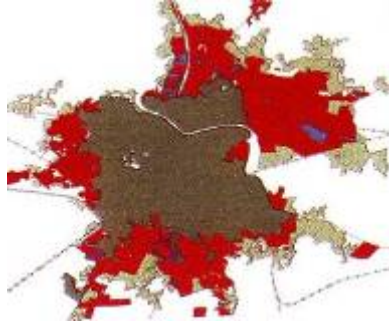


b. Crop acreage estimation

Interpretation of satellite data for major crops like wheat, mustard, potato will provide estimation on crop yield

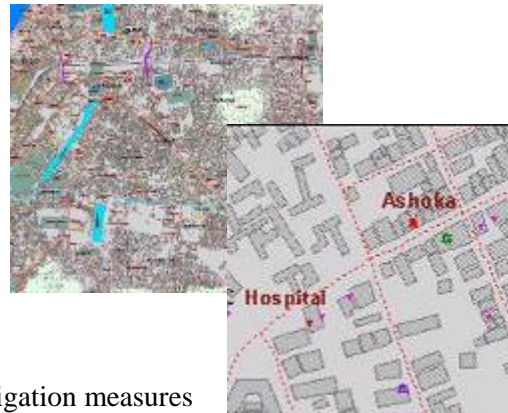
c. Mapping of Urban sprawl using RS data

Multi date satellite data used to interpret settlement area to provide useful inputs for urban planning. Expansion over time, its direction, land use change etc are important in future planning of urban utilities.



d. Mapping of Urban settlements on large scale (1:1000)

Urban settlements, sewer lines, roads, electrical lines, man holes, parks, govt. land etc can be mapped using high resolution satellite data / stereo images followed by ground survey using DGPS, Total Station etc. Useful for taxation, routing, real estate, school info, business info and entertainment etc.,



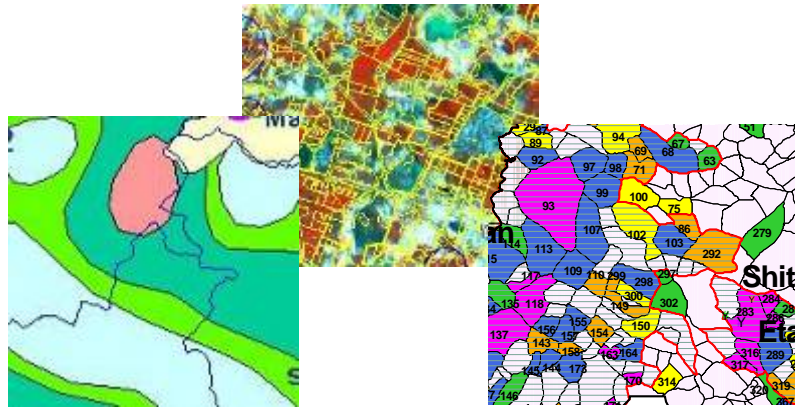
e. Mapping Waste lands, water bodies for temporal changes detection

f. Mapping of flood effected areas for mitigation measures

2. GIS in Environmental monitoring

a. Monitoring groundwater levels and spatial-temporal analysis

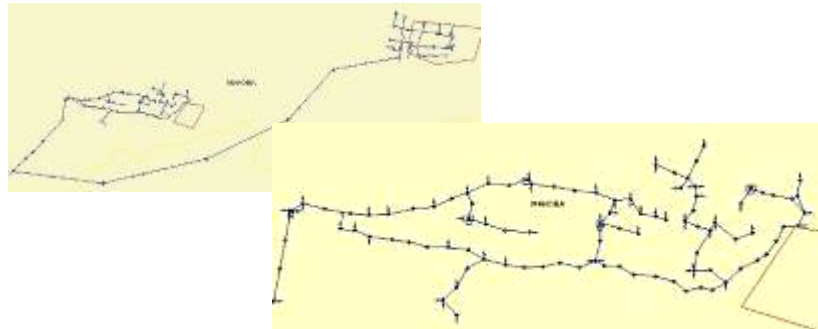
b. Monitoring of groundwater quality, soil quality over 10 years in ~50,000 sq km area using GIS



c. Mapping and monitoring of saline / sodic soils at parcel levels

3. General GIS applications

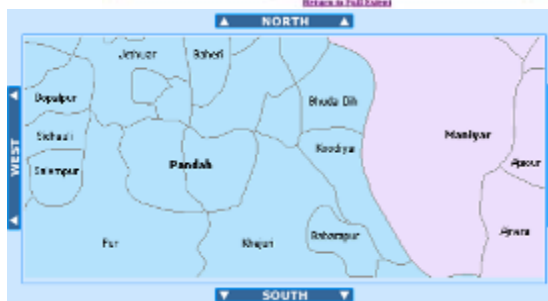
- a. Creation GIS database for base of road, rail, drainage, water body, canal, habitations etc



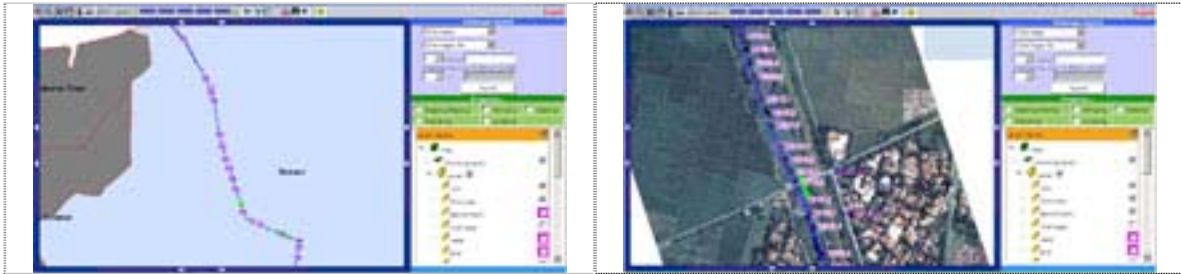
- b. Administrative boundaries – State, district, tahsil, block, village boundaries and linking census data
- c. Land Information System (LIS) by digitization of land parcel maps, geo-referencing, edge matching and resolving boundary disputes over large areas
- d. Creation of GIS database of natural resources and integration of various themes for areas around 2.5 million sqkm.
- e. Field data collection
 - i. Mapping of electrical networks into GIS to bring each pole, DT, conductor, junction box, stay etc using GPS and Laser distance meters
 - ii. Attribute data collection like settlement names, street names, house occupancy, man hole, parks etc
 - iii. Survey and data collection for work estimation in road design

4. Customization of GIS

- a. Customizing ArcGIS through Geo-database creation using Sub-types, domains and relations
- b. Macros using VB / .NET applications
- c. Web applications using Aspmap component from VDS Technologies, USA



5. Pipeline Information Management System for the Oil & Gas Industry



- a. A completely managed service
- b. REAL TIME and ERROR FREE reporting of progress
- c. Generate Alignment sheets based on specified requirements anytime during or after the construction phase, or later during operations (based on the latest data)
- d. Secure document storage, archival and convenient need based retrieval
- e. Document cataloguing – In compliance with ISO and QA/QC/HSE requirements
- f. Auto generated Pipe book and Weld book

The credit is that our field of experts had worked on National level, State level projects and World Bank projects. Some are listed below:

- GIS & Resource advisor on real time tracking systems
- Mapping of roads under PMGSY Project
- Mapping & DPR preparation for rural electrification under RGGVY
- consultant for design & development GIS database for SWAJAL
- Consultant to Cadastral (parcel) map digitization and software development
- Groundwater exploration studies in hard rock and alluvial areas

Academic background

- Some of our expert manpower was Visiting faculty on GIS to various Indian universities and Govt. departments
- Successfully Implemented Large scale GIS applications for the Oil & Gas Industry in countries like Turkey, Oman & Indonesia.



- Trained
 - ARC/GIS & Arc/Info training from ESRI-INDIA
 - ERDAS and Geomatica
 - Geomatics training, Hyderabad.
 - GPS training from IIT, Roorkey

- ***OVERSEAS TRAINING***

**On GIS based modeling in environmental impact assessment,
from Iowa State University, Iowa, USA**

ONGOING AND COMPLETED PROJECTS

(I) LANDBASE DATA COLLECTION AND GIS MAP UPDATION

Funding Authority: **A Corporate Company**

Location: **Kanpur City**

The main features of this project are:

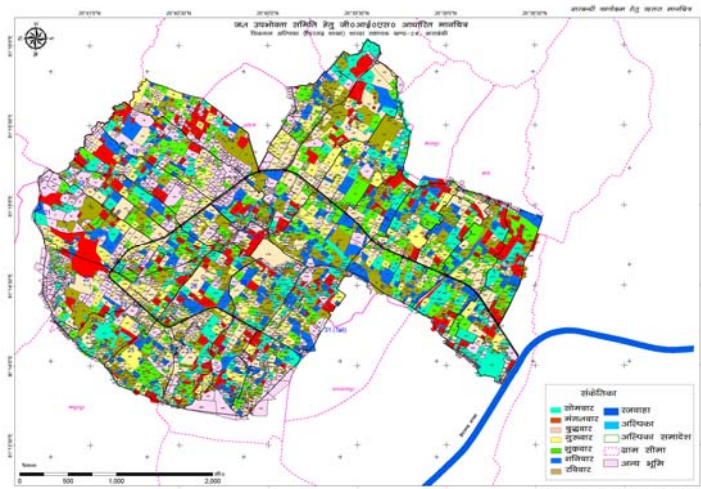
1. **Land base data collection:** It is the ground survey with hard copy maps of buildings extracted using high resolution satellite data. The maps are on scale
2. 1:1000 for collection of details on buildings, roads, area, locality and other details as per guidelines. The maps were updated to current and attributes were collected. The changes were updated in the hard copy for further incorporation in soft copy.
3. **Data entry:** The survey details (data sheets) have been entered in the prescribed format using software.
4. **Quality Check** was done for the correctness on ground. The data was processed through a QC module before submission as well.
5. GIS personnels have been deployed in customer premises for updating GIS database.
6. We had successfully completed landbase data collection & GIS updation of approx 50,000 buildings in a span of two months.



(II) CADASTRAL DATA PROCESSING FOR IRRIGATION WATER DISTRIBUTION

Cadastral Information system was developed and processed to provide minor wise output for each irrigation division of Sharada Sahayak. Thus the 7 divisions containing 419 minors were processed. Individual Geo-databases were created for each Minor, containing of 19 thematic feature classes. In all, 1928 different thematic maps were composed. The location of the Division boundaries within JSBS is shown in the figure. The processed spatial data:

- Total command area of 5,42,000 hectares.
- Cadastral boundaries of nearly 4000 villages.
- Canals, distributaries & minors.
- Minor command boundaries
- Ground survey details (chainage)
- Drainage, roads, etc.
- Waterbodies, canal outlets, piezometers, etc.
- District and village boundaries
- Khatauni data (ROR)



- Land use mapping using Cartosat-I data

The main features of this project were:

1. Data Processing
 - Cadastral maps of approximately 4000 villages and other thematic layers (17 layers) were processed using irrigation minor command boundaries and created geo database for each minor
 - Map Composition
 - Four different maps were composed namely Warabandi, Khasra, Kullaba and Base map. These maps were prepared as per the sample provided.
 - Printing and lamination of 3856 (2 sets) maps on A1 size on paper & transparent sheet
 - Processing of Khatauni: Khatauni data of 4000 villages were processed.
 - Plastic map carrying case: All the four maps were provided in the Plastic cases.
 - Many utility software programs were developed for fast and accurate execution of work

(III) Mapping of Plant Species for National Botanical Research Institute

Administrative boundaries of India (District, State), road network, important locations were mapped from SOI open series maps and other web resources. The plant species data available with the client were dynamically linked as a layer and overlaid.

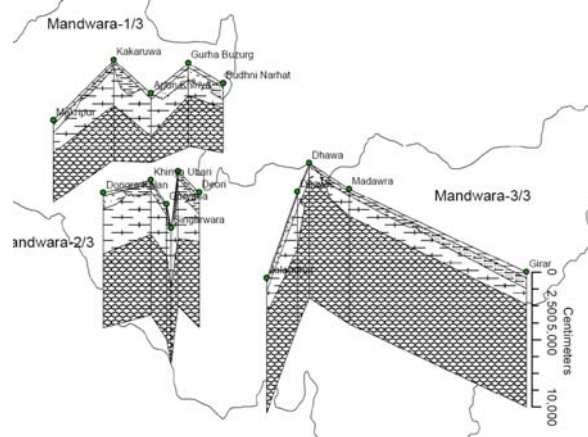


(IV) Cadastral Information System for Revenue departments

Pilot projects on cadastral mapping using high resolution Quick Bird satellite Image, Ground control survey using Differential GPS, Surveying using Electronic Total Station was done for two states (Uttar Pradesh and Punjab). Detailed analysis report and methodology, achievable targets and other advantages were demonstrated in the pilot studies.

(V) Development of Lithological cross sections

Using strata charts of drilled drinking water as well as irrigation wells litho cross sections were created on GIS for 338 blocks of the state. Maps were composed for each cross section and provided soft and hard copies



(VI) Urban Mapping for Deoria town

Mapping of urban settlement of Deoria town



is going to demarcate each dwelling, road, land use, rail and important locations. Train people for collecting land base details on pre defined formats. Prepare a procedure for linking of land base data to dwelling map.

(VII) Mapping Point of Interest

Working for a Corporate client in creating Atlas of Uttar Pradesh (major and minor towns) by collecting information on each location of ATM, Hotel, Traffic junctions, important places, places of historical importance, banks, hospitals, schools, bus stands etc of 52 types of POI. The project work is in progress.