GENESYS

Modernizing Canal Management with GIS

A water utilities company intended to Automate Canal Operation & Management System to optimize water usage and identify root cause of water wastage using a GIS interface. The key objective was to develop a modernized system that would be effective in curtailing operating costs.

Given the integration capabilities of GIS with systems like SCADA, MIS; it acts as the best conduit to enhance display and exchange information related to both canal system and non-canal system operation data. As a one stop Geospatial service provider, Genesys utilized its expertise to create various thematic maps of the catchment area and developed a GIS based application that could be integrated with their existing Irrigation Network Management Information System. The solution has embedded analytical tools that allow the user to view, query and perform various analysis on the geographical and MIS data.

Genesys developed the software on JavaScript, JSP, Postgres DBMS and MapServer Geoserver, APACHE Tomcat. Building the GIS component was a multi-staged process involving-

- Creating the base map of the entire catchment area 5800 sq. km consisting of 3000+ gates for 463 km of canal length using analog maps and satellite imageries.
- The scattered information from various departments was consolidated and organized to generate a unified database comprising of different layers – soil, cadastral, topographic features, hydrology, crop, canal network etc.; to easily access and efficiently archive the data.
- Seamless integration of spatial data with existing MIS data to analyse:
  - Sharing of water judiciously among the farmers in command area
  - Effective distribution of water in command area
  - Water accounting from the head to the tail
  - Assessment of the 'losses' & the root cause

Key benefits:

- Building a cohesive database across departments
- Scalable software that can be integrated with other applications
- Robust DSS allowing easy and fast data analysis