

## UNION WATER POWER COMPANY

## GEOGRAPHIC INFORMATION SYSTEMS

### Lewiston, ME



- GIS Database

Gomez and Sullivan was retained by Union Water Power Company (UWP) to implement and develop a Geographic Information Systems (GIS) database to assist with the FERC licensing of the Upper and Middle Dams Storage Project. The project is located at the headwaters of the Androscoggin River basin and consists of two seasonal storage reservoirs. These storage reservoirs work in coordination with three other projects to provide flow augmentation for a variety of downstream uses such as hydroelectric generation, wastewater assimilation, flood control, and water supply withdrawals.

The initial step in developing the GIS database for UWP was to create a detailed implementation plan. In this plan, all significant natural resources related to licensing issues were listed for input into the GIS database. Existing data sources, as well as data needs for each resource, were identified.

Actual input of existing baseline data began in late 1995 and continued until early 1996. A great deal of scientific data had been collected prior to licensing. This allowed for a strong foundation for the GIS database to be in place, even before any licensing field studies had been completed. GIS thematic maps were developed for wetland and upland cover types, hydrography, and political boundaries.

A variety of other thematic maps were produced, such as bald eagle and loon nesting sites, land use, and bathymetry of the storage reservoirs. Specifically, Gomez and Sullivan was responsible for inputting data and developing maps associated with water quality and fishery resources. Final mapping products included GIS maps for downstream hydroelectric projects, water quality sampling locations, and wastewater treatment plant locations. The GIS database served UWP not only in the production of quality maps for publication, but also as a robust tool for locating and querying data for analysis by various end users (i.e. project managers and licensing specialists).