

Colorado River Decision Support System

COLORADO WATER CONSERVATION BOARD

PROJECT SUMMARY

The Colorado Water Conservation Board needed a means to make informed decisions regarding major water issues and policies for the Colorado River Main Stem and tributaries. Riverside Technology, inc. integrated database, GIS, data processing, and modeling tools as a decision support system for the Colorado River.

LOCATION
Colorado, U.S.A.

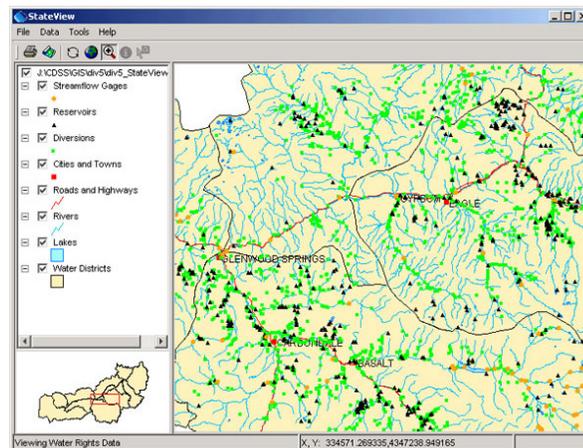
PERIOD
1993 – 1999

PROJECT DETAILS

In 1993 the Colorado Water Conservation Board (CWCB) selected Riverside Technology, inc. (Riverside) to develop a decision support system to manage the waters of the Colorado River, including the Colorado Main Stem, Gunnison, San Juan/Dolores, Yampa, and White River basins. The project resulted in a state-of-the-art system designed to allow decision makers to analyze hydrologic data, run hydrologic simulation models, run basin water allocation models that represent water rights, and study the effects of potential decisions.

The goals of the Colorado River Decision Support System (CRDSS) were to:

- Develop accurate, user-friendly databases to manage administrative and planning data for the Colorado River.
- Implement quality assurance and quality control measures.
- Use data and models to evaluate alternative strategies of allocation to enable the maximum utilization of available resources.
- Develop a well-documented, user-friendly system that is usable, supportable, upgradable, and expandable.



StateView HydroBase Viewing Tool

Riverside designed the system to display hydrologic data in an easily accessible manner, model interactions taking into account the prior appropriation doctrine and dynamic hydrologic conditions, and determine the river system's ability to meet future demand based on operational and administrative use of storage. CRDSS contains the data and models to evaluate various river operating alternatives and "what if" scenarios. Operational plans that CRDSS can evaluate include improving water use efficiency, exchanges between water users, constructing new reservoirs (or enlarging existing facilities), developing augmentation and replacement plans, and developing additional beneficial uses (such as the CWCB minimum streamflow program and alternatives for protecting endangered fish species).

The principal components of the CRDSS project included:

- Designing and implementing the HydroBase database.
- Developing model data sets for each basin contributing to the Colorado River.
- System integration.
- Documentation, training, and system support.
- User involvement.
- Coordination and consensus building relative to the project's technical objectives.

The CRDSS has subsequently been expanded to include the Rio Grande and the South Platte basins. Collectively, the systems are known as Colorado's Decision Support Systems (CDSS).

RELATED PROJECTS

Colorado's Decision Support Systems

Rio Grande Decision Support System

South Platte Decision Support System

RIVERSIDE

global science solutions



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