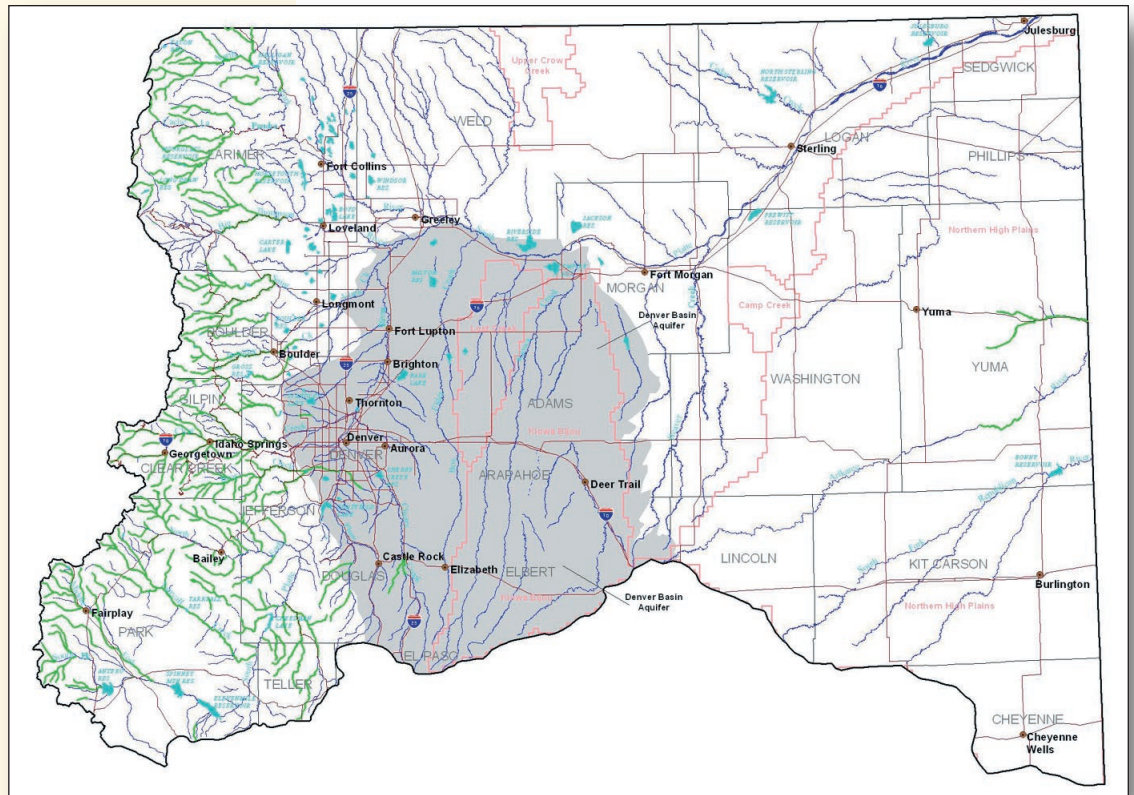


South Platte Decision Support System

The South Platte Decision Support System will help the most populous corner of Colorado allot its precious water wisely.



**BROWN AND
CALDWELL**

The South Platte River basin is home to Colorado's fastest-growing population centers.

BACKGROUND

State agencies, water providers and water users are constantly re-evaluating management of water resources in Colorado's fast-growing South Platte River basin. Increasing water demands, drought, allotments for endangered species and reductions in federal water program funding have created a need for scientific, systematic methodologies to enhance water administration and water resource planning capabilities.

In order to support informed decision making by state agencies and water-resources stakeholders, Colorado's Division of Water Resources is planning to implement a comprehensive decision support system (DSS) for the South Platte River basin. SPDSS will provide water interests with tools for organizing, accessing and evaluating a wide range of information and alternative strategies.

CONTINUED ON BACK

SPDSS will be the third decision support system developed by Colorado. One for water management and development in the Colorado River basin has already been implemented, and another for the Rio Grande basin is nearing completion.

SPDSS is benefiting from the experience, databases, tools and models already developed for the Colorado River and Rio Grande basins. But the South Platte basin is more complex from hydrological, hydrogeological and institutional perspectives. Consequently, SPDSS will require new or enhanced databases, calculation tools and models. Brown and Caldwell, as the lead consultant, is helping Colorado make these refinements.

ACTIONS

Brown and Caldwell conducted a feasibility study, compiling information on the needs and requirements of water users and state entities through a series of interviews and meetings. We analyzed the results of 71 interviews, three public meetings at different locations in the service area, numerous individual meetings with water users and input from a core advisory group. And we assessed alternative levels of development of software tools and databases.

Working in coordination with the state management team, we have recommended a level of development that will help the state and water users deal with immediate and future situations. These include the potential for costly interstate litigation over well-pumping rights and protection of Colorado water rights during development and implementation of a Recovery Program under the Three States Agreement for the Platte River.

STATE AND WATER-USER BENEFITS

Beyond coping with immediate needs, the recommended SPDSS will provide ongoing benefits, including:

Data

This includes basic information for the state and water users to fulfill specific needs, as well as for model and calibration input. The recommended SPDSS will provide data and tools, including:

- More complete and accurate streamflow, diversion and reservoir data that can be easily accessed and viewed.
- New satellite monitoring systems at key diversion points in the basin.

- New wells to provide additional geologic structure, aquifer property and water level data.
- Development of a GIS database available to all users.

Administration Tools

Enhancement of existing state administration tools and development of new ones will, among other things, sharpen the ability of the office of the state engineer to work more effectively. Improved access to state-of-the-river information will not only aid the state, but also users who are accounting for their water rights.

Among the administration tools specified in the recommended SPDSS are:

- Improved access to real-time streamflow and diversion data.
- Improved real-time operations data from users to facilitate river administration by allowing users to input data to a provisional database.
- Access to animation tools for presenting real-time satellite and diversion data.

Planning Tools

The recommended SPDSS will provide reliable planning tools and models, including:

- A basin-wide water resource planning model that operates on a daily time step and includes all the basin's consumptive use.
- An enhanced groundwater model for the Denver basin aquifers.
- A groundwater model for the lower South Platte Alluvium.

User Involvement and Training

User involvement and training programs will ensure development of a decision support system that will be used actively. Among the user-friendly features:

- Online, web-based training modules for the various models and other software tools utilized by SPDSS.
- Technical subcommittee meetings throughout the development of the project.
- User group meetings to provide a mechanism for communication of technical topics.

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