

# **Annual Report for the Year 1998**

## **Colorado Division of Water Resources**



***A Leader in the West  
in Water Resources Management***



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and  
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Cover page photo of Skinny Fish  
Lake, Flattops Wilderness Area,  
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## *The Colorado Division of Water Resources*

### *Vision for Success*

**The Colorado Division of Water Resources** strives to be a leader in the water community of Colorado and the western United States. This is accomplished by focusing on the following areas: *people, water and stewardship*. **People**, because we recognize that the business of water involves our employees and the public. **Water**, because the administration, safety and use of the State of Colorado's water resources is something we are committed to and care deeply about. **Stewardship**, because we understand and accept our obligation to the taxpayers and ourselves, in using and protecting the resources in the most effective manner possible.

Our **Mission** is:

- To provide competent and dependable distribution of water in accordance with statutes, decrees and interstate compacts.
- To ensure public safety through safe dams and properly permitted and constructed water wells.
- To maintain and provide accurate and timely information concerning water.
- To promote stewardship of all human, fiscal and natural resources.
- To serve the public through the generation of creative solutions to problems.
- To help the public understand complex water issues.
- To promote stability in the use of the state's limited water resources.
- To apply modern technology to its greatest advantage.

These **Principle** statements will guide our actions:

- Treating each other and the public with dignity, respect, honesty and fairness.
- Assuming personal responsibility for individual and organizational actions.
- Fostering continuous improvement, innovative thought, learning and shared leadership.
- Promoting an open and honest communication environment that builds trust, respect and loyalty among ourselves and the diverse community in which we live and work.
- Recognizing our employees and the water community for the professional, competent services they provide.

### ***The Goals outlined below set forth how the Division of Water Resources will accomplish its vision over the next five years (1999-2003):***

1. To recruit and retain competent and motivated employees.
2. To distribute and allocate the surface and ground water of the state in accordance with Colorado statutes, judicial decrees and interstate compacts.
3. To protect Colorado's entitlements and ensure compliance with interstate stream compacts.
4. To promote stewardship of our human, fiscal and natural resources.
5. To promote a safe environment for the public and our employees through awareness, technology and education.
6. To enhance the customer service capabilities of the agency.
7. To maintain and provide accurate and timely data and information related to water resources and our agency.

Visit the DWR Web Site at <http://www.water.state.co.us/default.htm>

## ***Message from the State Engineer ...***

For the Division of Water Resources, 1998 was a significant year of accomplishments. The first Long Range Strategic Plan that the Division ever initiated was completed. This 5-year plan, which was developed in 1993, covered the period 1994 to 1998. The goals and objectives of this strategic plan kept us focused on continuously improving our operations. In 1998, a new Long Range Strategic Plan was developed for the period 1999 to 2003. However, prior to beginning the plan's development, our Mission Statement was revised to reflect the thoughts and feelings of our 240 staff members. Through a series of 10 statewide workshops led by Joseph (Jody) Grantham, we obtained important input on various components of our mission and on important guiding principles. The end result is the exciting vision, mission, and guiding principles as shown on page 1 of this report. With this new Mission Statement, we then developed goals and objectives that are in alignment with the mission for the new Long Range Strategic Plan, which again will keep us focused on areas we want to improve or address in a new way.

The successes of the Division of Water Resources over the past five years would not have been achieved without the most important component of any agency, and that is its staff of truly dedicated and professional people. We have staff that are public servants willing to work under often difficult circumstances as we regulate the use of surface water and ground water, and as we provide for safe dams and water wells. We have staff willing to use new technology to work more effectively as we deal with more and more complex water administration and management issues resulting from growth and federal regulations.

- Hal D. Simpson, State Engineer -

## ***Litigation ...***

### ***Arkansas v. Colorado, Arkansas River Compact***

This interstate litigation continued in 1998 with trial in May on the depletions to usable stateline flow for 1995 and 1996. The Special Master issued his report recommending that the depletions would be about 8,000 acre-feet. This results in the cumulative depletion being 428,000 acre-feet for the 1950 to 1996 period. Colorado submitted a report to Kansas and the Special Master on its ability to repay a portion of the damages in water. Kansas submitted its report to Colorado and the Special Master claiming damages of \$73 million for the 1950 to 1994 period. Trial on the remedy phase will begin in late 1999.

### ***Kansas v. Nebraska, Republican River Compact***

Kansas filed an action with the U. S. Supreme Court asking the Court to assume jurisdiction over the complaint by Kansas that Nebraska had violated the Republican River Compact by allowing the use of ground water to cause Nebraska to exceed its compact allocation of consumptive use on several sub-basins within the Republican River Basin. The U.S. Supreme Court agreed to assume jurisdiction and should appoint a Special Master in 1999. Colorado is a party to the Compact and will have to carefully monitor all activities associated with this litigation.

### ***Cherokee Mediation***

During December 1998, the Assistant State Engineer for Water Supply was petitioned by two separate parties involved in multiple litigation to serve as a formal mediator. Upper Black Squirrel Groundwater Management District and Cherokee Metropolitan District were opposing parties in a water court proceeding, one civil action before the El Paso District Court, and another case before the Colorado Court of Appeals. Through two protracted mediation sessions and many one-party to mediator consultations, the parties signed a Stipulation and Release and a successful conclusion was achieved.

## ***Legislation ...***

On August 5, 1998, **House Bill 98-1151** went into effect. The act is in concern to the powers of the Colorado Groundwater Commission, the State Engineer, and local groundwater management districts located on the eastern plains of Colorado. The highlights of this legislation include allowance for the determination of rights to designated groundwater in the Dawson, Denver, Arapahoe, and Laramie-Fox aquifers. It removes the requirements to issue final permits for said wells. The act also established a withdrawal limit of 5 acre-feet for new small capacity groundwater wells, but allows the local groundwater management district to adopt rules to increase or decrease this acre-foot limit.

The Division actively worked to help pass **House Bill 98-1037**, the Mileage Bill, which was approved and signed by the Governor. This bill would increase the rate paid to state employees who must drive their own personal vehicles on state business. Currently, those employees are subsidizing the state since the use of their private vehicles is essential to their job and state vehicles are not available for seasonal, short-term leases. The bill requires that each Department submit a decision item for the costs of implementing the legislation that would be effective on July 1, 1999. The Division of Water Resources appreciates the support of water users in getting this bill through the Legislature. It has been 13 years since the rate was increased and the morale of the Water Commissioners was being impacted greatly.

## ***Dam Safety highlights ...***

The Dam Safety Branch experienced a challenging and exciting 1998. With the decentralization of one-half FTE to the Division 2 office, the dam inspection activities and determination of reservoir safe storage levels progressed well, including voluntary restructuring of commitments to help the overall accomplishment of 817 scheduled inspections. However, two dam failures and serious incidents at eleven other dams were of concern.



Of importance was the failure of Carl Smith Reservoir on the evening of May 2, 1998. Carl Smith Dam is an 850 acre-foot, Class I off-channel reservoir in the Leroux Creek basin north of Hotchkiss, Colorado. The failure was a result of a large slide on the downstream slope which extended across the crest and into the upstream slope. The releasing water swiftly eroded down through the top half of the remaining embankment and quickly released about 500 acre-feet of storage. The peak discharge just below the dam was determined to be around 3,300 cfs. Several residences were evacuated. The only loss of life was livestock. The high water washed out numerous bridges and diversion structures that were quickly rebuilt to restore water to irrigators.

The audit of the Dam Safety Program by the State Auditor was completed in 1998. The findings were presented to the Legislative Audit Committee July 13, 1998. Program improvements as a result of the audit will increase effectiveness and allow the engineers to reallocate time and effort to higher priority activities. Significant progress was made on contracting phase 1 and 2 of the Extreme Precipitation Study which will be initiated in 1999 with an anticipated completion in 2001. In addition, several federal grants were applied for and obtained through the National Dam Safety Program. These grant funds were used for technical training, improved software and equipment. The State Engineer submitted an Annual Report on the Dam Safety Program to the Legislature November 1, 1998.



## ***Big Thompson River and St. Vrain River Enforcement Program...***

During 1998, the Division 1 Office in Greeley, continued the major effort to locate illegal uses of wells and illegal surface water diversions. This effort has been focused at the Big Thompson River (District 4) from the western edge of the city limits of Loveland upstream to the Eastern Boundary of Rocky Mountain National Park, and along the St. Vrain River (District 5) from the Town of Lyons to its headwaters, and along the Left Hand Creek Drainage from its confluence with St. Vrain Creek to its headwaters.



In the Big Thompson drainage, many people are submitting change of ownership requests for their wells and have obtained forms to late-register their historic uses of pre-72 wells. Over one hundred forty persons have joined a substitute supply plan that involves the use of CBT to replace water being diverted directly from the Big Thompson River. In addition, others have joined a substitute supply plan for the Big Thompson River that will replace depletions associated with illegal well usage. This plan will eventually be taken to Water Court. Many people have chosen to cease the watering of their lawns instead of augmenting for out-of-priority uses.

As a result of 1998 efforts, the number of parties participating in the substitute supply plan that is operated by the Left Hand and St. Vrain Water Conservancy District has increased to 140. This project has been getting positive results in eliminating illegal water. The water commissioner will continue monitoring water users who are illegally diverting water. This will primarily involve our following up on last year's contacts and issuing cease and desist orders if needed. It is planned that during 1999 the water commissioner will look downstream of Lyons for similar type of illegal water users. The Division 1 office will pursue any individuals who have not joined one of the plans and continue the illegal use of their wells or surface water diversions by issuing cease and desist orders.

## ***Administration of Water in the Arkansas River Basin...***

Pursuant to the Amended Use Rules for the Arkansas River Basin, annual summaries of plans approved by the State Engineer were prepared following the end of the 1997-98 plan year. In summary:

- the wells within these plans were authorized to pump 204,113.45 acre-feet;
- the total amount of water actually pumped was 142,441.31 acre-feet;
- the total amount of stream depletions which required replacement was 35,696.93 acre-feet, of which 10,462.55 acre-feet were determined to be depletions to usable stateline flow;
- replacement for out-of-priority stream depletions affecting senior Colorado surface rights were 26,689.2 acre-feet;
- the amount of replacement water delivered to replace depletions to usable stateline flow was 10,486.08 acre-feet.

Reports concerning the operations of the Offset Account during the 1997-98 plan year were submitted to the Operations Committee of the Arkansas River Compact Administration on December 9, 1997 and December 8, 1998.

## ***Rio Grande Decision Support System Implementation and HB98-1011...***

Based on a feasibility study completed in April, 1998 ("Rio Grande Decision Support System Feasibility Study"), the Division of Water Resources and Colorado Water Conservation Board have initiated the development of the Rio Grande Decision Support System (RGDSS). This is a three-year program that will assist the State Engineer in the promulgation of rules concerning the appropriation of water from the confined aquifer in the San Luis Valley by new wells required by HB-98-1011. Funds for the first year of the study have been appropriated in the CWCB Construction Fund bill.

Last fall, 1998, five contractors were selected to execute the Rio Grande Decision Support System. Since their selection, each contractor has worked diligently to negotiate a contract that includes a scope of work, budget and schedule. The development of RGDSS began in January 1999. The development consists of five separate components: surface water, ground water, consumptive use/water budget, relational system integration, and spatial system integration/project management assistant.

In addition to the consultant activities, another RGDSS activity includes initiating the installation of 20 new stream gages in the San Luis Valley. The Division 3 office in Alamosa has had a great start in installing new gages and monitoring equipment that is needed to better administer their system and to provide data on a significant part of the San Luis Valley hydrology. Several other efforts are being initiated which will hopefully provide the tools to more accurate, timely, and confidently predict impacts of well pumping and effects of different administration scenarios.

## ***Well Location Program...***

A program continued in the Division 1 Office in Greeley that is being used to locate non-exempt high capacity wells using Global Positioning System (GPS) units. This project began in former Water District No. 2 near the City of Brighton during the 1996 irrigation season. In addition to continued efforts in District 2, the program expanded to include former Water District 64 during 1997, and Water District 65 in 1995. Approximately 777 wells in District 2 and 686 wells in District 64 have been located to a five-meter accuracy level using the GPS units since this program began. The efforts will continue in an organized manner on a section by section basis until all wells have been located within the Division. It is currently projected that the completion of the entire project will take well over ten years, given the large number of non-exempt wells in the Division. The Division has expanded the program by involving the Groundwater Appropriators of the South Platte (GASP) in locating wells. GASP initiated a pilot program during 1998 and will share their data collection efforts for their member wells.

The activities in District 2 identified 62 wells that are not being currently augmented and 42 wells that need to be capped properly. In addition, many wells were found to be incorrectly located. In District 64, 17 wells were found that needed to be capped properly. Several wells also appeared to not be part of an augmentation plan. The water commissioner contacted the well owners and letters were sent to the well owners who were found to be pumping wells illegally. In District 65, GPS equipment was used to locate Republican River Compact wells, and the wells that were located were tagged with identification plates. The compact well location efforts in District 65 will be completed during 1999.

## ***Colorado River Decision Support System (CRDSS), Division 5 Workbook...***

CRDSS envisioned the need for a tool unique to each of the major river basins for the mainstem of the Colorado River. It is the "Division 5 Workbook." The Division 5 Office in Glenwood Springs expended a great deal of time and effort in working with a CRDSS contractor, Enartech Inc. of Glenwood Springs, and various water user groups in designing and constructing the "Division 5 Workbook". This project was developed to assist the Division 5 office in the administration of the Colorado River. Some of the new workbook's primary purposes include determining undepleted natural flow of the Colorado River, distribute the natural flow to water users in priority, determine the Colorado River call, and calculate replacement releases from Green Mountain Reservoir.

The workbook accepts daily data from four large water users (U. S. Bureau of Reclamation, Denver Water Board, Colorado River Water Conservation District, and City of Colorado Springs) via the CRDSS database using e-mail to transfer data files. The four water users will supply this data as part of the necessary input for not only the workbook river accounting, but also the generation of diversion and reservoir records. Daily results of the workbook will be posted at an FTP site for use by any water user.

## ***Well Blast ...***

During the last week of November 1998, the State Engineer's Office implemented an innovative teamwork concept referred to as "*Well Blast Week*". The intent of the project was to capture the knowledge and dedication of DWR employees in a collective effort to eliminate a daunting backlog of pending groundwater well permit applications. As of Thanksgiving Day 1998, there were 1,262 pending well permit applications awaiting evaluation, approval, or other agency action. The cumulative backlog of well permit applications paralleled Colorado's explosive growth. The accrual of permits reflected a combination of increasing use of groundwater through wells for domestic supplies and the justifiable mandate by Colorado citizens that requires efficient working procedures from state employees to meet the demand for greater volumes of work and additional forms of public services.

A strategic plan was initiated that focused upon dedicating one week of time to eliminate the pending well permit application backlog. Thirteen field employees that work throughout the seven water divisions were brought into the central downtown office to work with the Denver well permit evaluation staff. In addition, other Denver professionals that work in the records, litigation, and geo-technical branches also volunteered their efforts. During a single week of dedicated effort, 905 applications were evaluated and acted upon, 230 changes in well ownership were processed, and 2,174 computer updates were made to either insert missing data or make corrections to the statewide groundwater well database. All of these achievements occurred in a dynamic and enthusiastic work atmosphere with no reductions in service to other responsibilities. As a result of this effort, the backlog ended and well permits will be able to be processed in about 21 days.

***Accomplishments -- The following are a few of the accomplishments that were achieved in 1998 in terms of projects or issues needing to be addressed in water administration...***

A major accomplishment in the Division 3 Office, in Alamosa, was the continuing efforts to be involved in all aspects of the issues surrounding the **Rio Grande and Costilla Creek Compacts**. With new technology and ever increasing demands on water, it has been necessary to spend an inordinate amount of time learning the most intimate details of the history and specifics of the compacts. Both of these compacts are over 50 years old and much has been lost over the years as to the basis and issues surrounding their formation. Efforts have been made to understand as many of those issues as possible and to use them in administration and monitoring of issues in the other involved states. The ultimate goal is to insure that Colorado is getting its entitlement under both compacts as well as meeting its obligations.

The Division's **Web Site** was **redesigned** to benefit and provide the public with a valuable source of water-related information and data. The web site has become an educational forum to increase awareness of Colorado's most valuable resource by publishing brochures, access to water related data, and frequently asked questions on-line. In addition, it presents a positive image of the Division by providing information on the agency's history, mission, daily operations, and links to other water related web sites.

The **Engineering, Technology, and Investigations** (ETI) branch was incorporated. The branch is comprised of engineers, information technology specialists, geologists, hydrologists, technicians, and support staff. The Information Technology staff has endured a tremendous turnover in staff, however, the accomplishments over 1998 have been astonishing. These include success in improving DWR and CWCB Network; expanding and improving customer access to information on DWR Internet sites; decentralizing the GIS system including support of the Arkansas litigation, Republican River Compact, CRDSS and RGDSS projects; initiating the records Imaging project; and the development of technological tools to improve surface and groundwater administration.

The completion of **Senate Bill 96-74 Technical Study** of the South Platte River Basin and Denver Basin Aquifers was a significant accomplishment. While the ink was still wet on the final report, the Modeling staff was working with a technical peer group to scope additional investigations intended to refine the Denver Basin Ground Water Model and ground water interaction with surface water in the South Platte Basin.

Several support activities to the **Board of Examiners** were accomplished, including evaluation of 230 requests for variances from the Rules, development of a well observation program, and well completion report review. A complaint procedure was approved by the Board. Revisions to the BOE Rules were initiated. Seventy-nine complaints related to Rule violations were investigated with seventy-four complaints resolved. Substantial education and outreach occurred during 1998, strengthening the protection of the groundwater resources and public safety.

**Water Commissioners in Division 7** carried out difficult administrative actions on both the Florida River and Stollsteimer Creek. On the upper Florida, up to 30 ponds were addressed for evaporative losses, successfully regulated, and brought into compliance. Water was released to the stream in lieu of removing the pond; new substitute supply plans were developed and some dams were removed. On Stollsteimer Creek, the impending call for water led the water commissioner and the Division Engineer into a quick evaluation of junior well use. Orders were issued and most wells were metered or otherwise brought into compliance with law. Also, after many years of work in encouraging the Southern Ute Tribe to repair Capote Lake on the lower section of the creek, the tribe drained the lake in preparation to perform the necessary work. This will be done over the next several years.



## ***1998 Public Opinion Survey...***

The Colorado Division of Water Resources conducted a Public Opinion Survey in 1998 to determine the public's opinion regarding the importance of customer service and the effectiveness of the Division. The survey is part of an on-going effort to monitor, examine and to learn how external customers view the Division's performance. Overall the results indicate that this organization is making significant progress in its effectiveness and public relations aspects of its operations.

1998 was the third year of the survey and a baseline of data is beginning to be formed from which comparison, trends, and sound analysis can occur. The honest feedback that was received provided excellent insight to areas where the Division is performing particularly well along with suggestions for improvements. The return rate of the surveys was up from the previous years' return rates and was considerably higher than the norm for mail-in surveys. The Division would like to extend its sincere appreciation to the organizations and individuals who took the time to fill out and return the survey.

## ***People ...***

***Assistant State Engineer - Kenneth Knox*** was appointed as the Assistant State Engineer for the Water Supply Section in the Denver office in August, 1998. Prior to this appointment, Mr. Knox served as the Division Engineer in the Division 4 Office in Montrose, Colorado, for 8 years. The responsibilities of the Water Supply Branch include substitute water supply plans, subdivision review, interstate compacts, ground water well permitting, Designated Basins, the Colorado Ground Water Commission and Litigation.

### ***Division Engineers –***

***Robert Plaska***, former Assistant Division Engineer for the Rio Grande Basin, was appointed Division Engineer for Water Division 6 in February, 1998. He replaced Mr. Ed Blank, who retired after 23 years of dedicated service to the state of Colorado. The Division Engineer's Office is located in Steamboat Springs and is responsible for the Yampa, White, Green, and North Platte River drainage basins.

***Wayne Schieldt*** was appointed as Division Engineer for the Gunnison River Basin in Water Division 4, in December, 1998. This office is located in Montrose and is responsible for the Gunnison, Uncompahgre, San Miguel, and Little Dolores River drainage basins. Prior to this appointment, Mr. Schieldt was the Assistant Division Engineer in Montrose for 4 years.

***Other Transitions - Steve Lautenschlager***, former Assistant State Engineer for Water Supply, was appointed as Special Assistant to the State Engineer in August, 1998. In addition, Mr. Lautenschlager will assume the role as Hearing Officer upon the retirement of Mr. Reiner Haubold in March 1999.