

Division 1 Annual Report



Irrigation Water Year
2002

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CURRENT WATER YEAR

Water Administration



Cheesman Reservoir

The 2002 water year started off, at least, in better shape than the beginning of the 2001 water year. During 2000, the plains reservoirs were generally drained by the end of the irrigation season. While this resulted in an overall below average storage level, there was no significant concern about being able to fill the reservoirs at the beginning of the 2002 water year. Because of this, there was no storage call downstream of Denver during November and December of 2001. By the beginning of the 2002 irrigation season, all of the major plains reservoirs along the South Platte mainstem had filled.

In the Denver area, the Barr Lake call on the Upper Platte was placed during the winter months for diversions through the Burlington ditch on the north side of the Denver area. This call is typical for winter operation in this reach of the South Platte.

Reservoir levels on the tributaries were in much worse shape than the mainstem of the South Platte going into this water year. The very dry winter kept users from coming close to filling these reservoirs. Reservoirs which did not fill under their senior priority included Halligan, Chambers, Big Windsor, and Timnath in the Poudre basin; Boyd Lake in the Big Thompson basin; and Union Reservoir in the Saint Vrain basin.

In addition, the storage levels of reservoirs associated with the Colorado Big Thompson project, a major source of supplemental supply for the South Platte basin, were extremely low. This was the first time in the last eight years that the storage in this transbasin system was far below average. There was concern that a long term dry period potentially could impact supplies from this project. This proved to be true as the Northern Colorado Water Conservancy District subsequently limited their quota to 70% based on supplies. This was a significant change in operation as until this year supplies were limited by need not by supply.

Without significant rain, Division 1 administrators were concerned that users would not be able to replace reservoir supplies on the mainstem that had to be used early in the year before runoff. Without refilling or filling for the first time in some cases, they were aware supplies would be very short by the end of the year.

In addition, continued dry conditions created concerns as to whether organizations that augment wells would have adequate supplies to replace all out-of-priority well depletions. This was even more important in a year when many irrigation users are very dependent upon their wells for an adequate supply.

The first direct flow call on the South Platte occurred on April 4, 2002. The direct flow call on the South Platte was not removed until after the first significant snowstorm which occurred the end of October.

While we often have a direct flow call on the mainstem of the South Platte and along tributaries early in the year prior to runoff, it usually does not occur until the end of April as opposed to the first of April like 2002. By the end of April, the senior call for water controlling the portion of the South Platte above the Saint Vrain confluence was 1871, a senior call that usually only occurs in July of dry years. Similar senior call conditions existed on the tributaries and the remainder of the South Platte.

Unlike most years, the Spring runoff from the less than 30% of snowpack conditions never developed sufficiently to remove the call from either the mainstem or the tributaries.

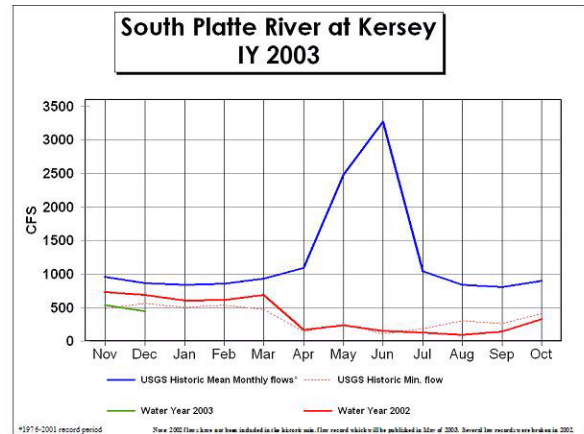
2002 Snowpack Percent of Average

Date	State Wide	Upper Colorado	So. Platte tributaries
Feb. 1 st	58 %	70 %	56 %
Mar. 1 st	56 %	70 %	55%
Apr. 1 st	52 %	69 %	58%
May 1 st	19 %	26 %	28%

In fact, some lower snow courses showed no remaining snow by the end of April, an extremely unusual occurrence.

Because of the early call, users began to draw on reservoirs very early in the irrigation season. Unfortunately, users also were not able to refill their reservoirs like they do most years during runoff because of the lack of runoff. Thus, it appeared early in the irrigation season that users growing row crops would not have an adequate supply. Some irrigation companies advised their users to plant accordingly, forewarning them concerning limits in supply.

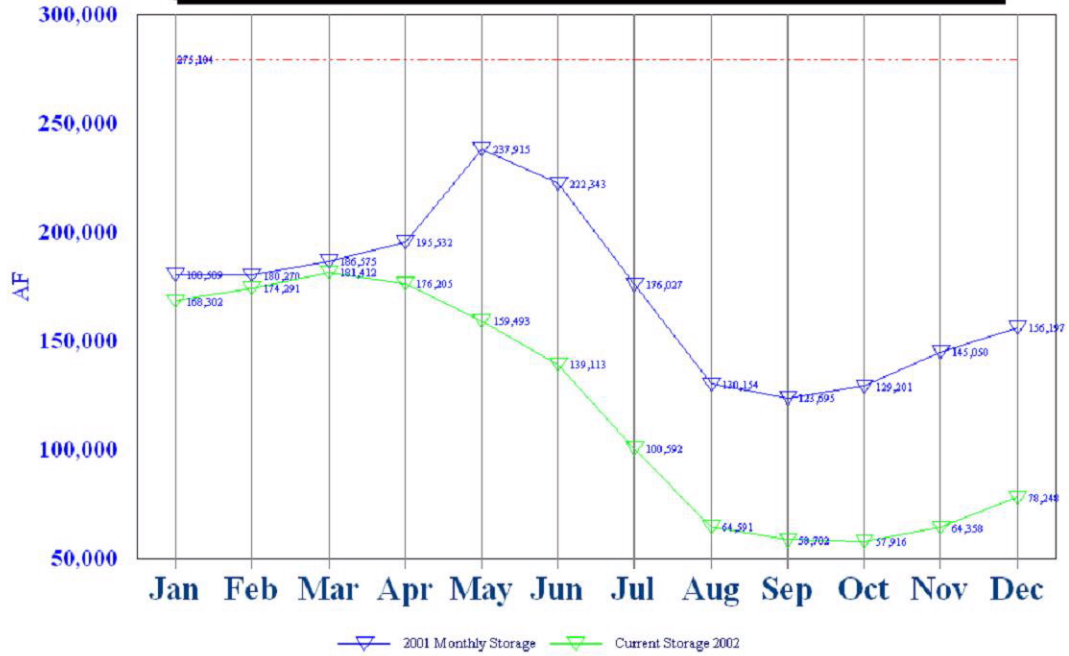
Stream flow continued to be near historic lows on the South Platte at Kersey, a key measure of flow, through out most of May due to the continued dry conditions and the lack of snowmelt runoff. The flow of less than 100 cfs the first part of May was dramatically less than the average year flow in May of approximately 1200 cfs. The 57 cfs flow May 2 was the lowest flow at Kersey in over 25 years. The senior call of Bijou ditch bypass to Weldon Valley ditch with a priority of 4-26-1882 was the most senior call on the South Platte downstream of Kersey in over 20 years. Because of the shortfall in stream flow, users were heavily dependent on wells and reservoir supplies to meet demands.



Municipal water providers, in general, have a much larger water supply safety factor than irrigators. The severity of the drought, however, significantly impacted even them. In some drainage areas, city representatives reported that conditions were worse than in the 1950's, a time period many cities use in their simulations for planning purposes. To cope, water suppliers reduced the amount of their supplies they lease to farmers because of the dry conditions further reducing supplies available to farmers. In addition, many cities and other water suppliers began to search for additional resources and implemented their drought plans. Many water providers also sought approval of emergency substitute supply plans from the State Engineer to use new resources for their citizens.

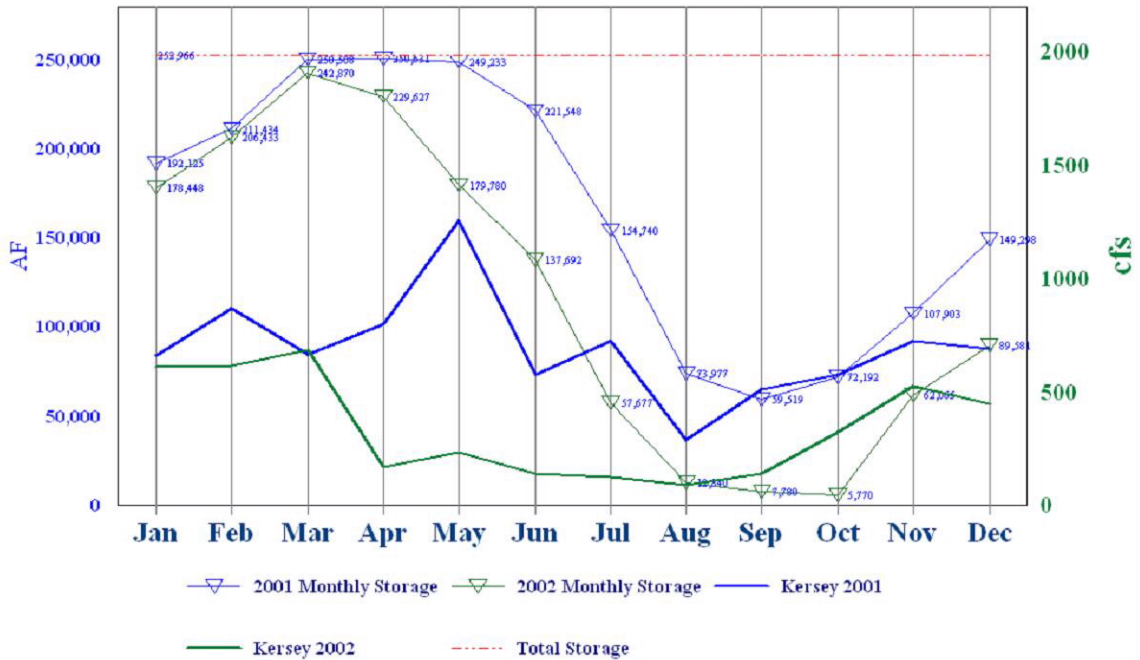
The dry conditions continued all summer. By the end of August, large mainstem reservoirs including Jackson, Riverside, Empire, and Julesburg were empty except for dead storage. North Sterling was emptied by the middle of September and Prewitt by the end of September. Operators of some of these reservoirs looked at and in some cases attempted dredging as a way of being able to release additional water in isolated pockets of the reservoirs. In one situation, reservoir owners even used dynamite to release isolated pockets of storage.

Reservoir Storage above Kersey Selected Reservoirs*



*Barr,Cobb,FossilCrk,Halligan,Marshall,Milton,Union,Standley,LowerLatham,Boyd,Loveland,Windsor,HorseCrk,Prospect. by jhl

Reservoir Storage below Kersey Selected Reservoirs*



*Empire,Riverside,Jackson,Prewitt,N.Sterling,Julesburg. by jhl

Denver drained Antero Reservoir during August to consolidate supplies in Cheesman reservoir to reduce evaporation losses, provide a mix of in-basin and transbasin supplies depending on river conditions and for water quality purposes. By bringing water down from Antero and putting it in Cheesman, the Denver Water Department hoped to dilute the amount of ash and debris that might be in the raw water supply as a result of the Hayman fire. Denver also lowered Eleven Mile for the same reasons.

Due to the dry year, well augmentation organizations had to obtain additional augmentation supplies for wells. Central, GASP, and the LSWCD worked together to utilize their combined resources to maximize the available water supplies available as replacement sources. Their sources included reservoir releases, recharge accretions, changed irrigation rights, reusable effluent leased from cities, lined gravel pit releases, surface water bypasses of senior rights and augmentation wells in district 64.

Dry conditions continued the short fall in water supplies in the South Platte basin into September and October. Total flow of the South Platte at Kersey, a key measurement gage, remained at a historic low for the fourth consecutive month in October. In a normal year, there is not a senior irrigation direct flow call at least part of September as irrigation demand drops off and users on the mainstem begin recharging or divert to refill reservoirs. This year, demand was higher than in previous years along many ditches as farmers tried to finish off their crops or get water on their hay. The increased demand along with the extremely low flows did not allow for the direct flow call to be removed until the very end of October. This is the first time in over 25 years that there has been an irrigation call on the mainstem of the South Platte in October.

Because of irrigation demand, the storage and recharge that normally occurs in September and October did not occur. Even in recent previous dry years like 1994 and 2000, conditions allowed for significant storage in South Platte plains reservoirs in October. The

storm the last week of October did allow for some storage to begin as water was taken at North Sterling Reservoir. Beginning November 1, 2002, reservoir storage began in earnest through out the South Platte basin. The first South Platte plains reservoirs to receive water will be Jackson, Julesburg and Riverside Reservoirs. As these reservoirs approach their winter storage level, we will allow storage in the remaining plains reservoirs. To assure maximum beneficial use, our office is also allowing out-of-priority unupstream storage in situations where there would not be injury, meaning the junior users can release and get the water to the senior users should they not fill their reservoir.

The call on the mainstem and many of the South Platte tributaries for the whole month of November and December was for storage. This is the second year in the last three years that we have had a storage call on the mainstem of the South Platte on the lower end of the Platte in District 1 and 64. The previous storage call existed in the fall of 2000. Prior to that, there had been over 20 years without a storage call in District 1 and 64.

With empty reservoirs at the end of the season and no significant storage in September and October of 2002, it will make it very hard to fill all the plains irrigation reservoirs by spring of 2003 even if conditions are normal. In addition, the loss of recharge in October will seriously impact the amount of augmentation water available next spring for wells.

Unlike 2000 when municipal suppliers were able to keep nearly full reservoirs, storage levels for municipal providers along the South Platte and its tributaries and west slope storage reservoirs (Grandby and Dillon) are also extremely low.

Flows into many of the municipal front range storage reservoirs do not presently exceed demand and thus little storage is being made in these reservoirs. The low storage levels create continued concern for all municipal suppliers similar to irrigator concerns. Municipal suppliers will have to continue similar or more

restrictive water saving limitations on users next year unless conditions improve dramatically.



Dillon Reservoir

Of note, in response to the drought Denver Water is designing 3 pump stations at or near Chatfield Reservoir. Denver Water owns all the water in Chatfield Reservoir. The pumps stations will allow Denver to use Chatfield water directly in its treated water system. Until now, Denver has only been able to use Chatfield water indirectly, either by exchange or through contract deliveries to other water users. The first temporary pump station will be installed to capture water that would spill from Chatfield this winter. Next spring, Denver Water plans to construct a permanent pump station located at the manifold works of Chatfield and a pump station on the river upstream of the reservoir. The primary purpose of the stations would be to pick up water that was released upstream from Strontia Springs Reservoir for minimum flows below Strontia Springs Reservoir. However, the manifold pump station could also be used to lower the reservoir. Like Denver Water, other water suppliers and users are looking for new ways to take advantage of all of their existing water rights as well as securing new water rights.

Perhaps as descriptive of the year as any other single summary are the following “drought facts” presented at one the larger water district’s fall meeting.

2002 Drought Facts along the South Platte Drainage*

NOAA: December – May precipitation driest in 107 years of record keeping in Colorado.

Snow drifts on Trail Ridge Road in 2002 were 12 to 15 feet, vs. normal depths of 30 to 40 feet.

2002 saw the earliest date for ice cover leaving Granby Reservoir (4/19) and the earliest opening of Trail Ridge Road (5/7).

Poudre River Basin: 2002 runoff was 95,000 acre-feet; 1954 was 106,000 acre-feet.; a normal runoff is 288,000 acre-feet.

Runoff in the St. Vrain Basin : Lowest previous was 1954 at 30,000 af. - 2002 runoff was 22,000 af.

On May 30th, all of Colorado’s 64 counties were declared drought disaster areas.

Ft. Collins experienced the 2nd driest July ever with 0.7 inches of precipitation.

Boulder experienced the driest July since 1898 with 0.7 inches of precipitation.

In 114 years of keeping records, Ft. Collins had the hottest July ever with an average high of 91.7.

This July was the 3rd hottest July ever in Greeley’s history at 96.1 degrees.

Denver’s reservoir system was 50% full in mid-October, which is 30% below normal.

*Information provided by the Northern Colorado Water Conservancy District at their fall user meeting.

Accomplishments

Wells in the South Platte basin are an integral source of irrigation water. Water rights for these wells, however, are very junior. Thus well pumping would have to be curtailed unless adequate replacement water is provided for the well depletions that impact senior surface water users. Division 1 has encouraged and assisted where appropriate in the development of new sources of replacement water for these wells. New sources include a large number of new recharge projects, expansion of existing recharge projects and new wells located far from the river (whose depletions often occur when there is not a demand by senior water users) that pump to senior ditches or the river. Division 1 has also encouraged the cooperation of organizations that provide replacement water for wells.

Division 1 has worked to expand both its ability to obtain timely data and distribute data to its users. In regard to the collection of data, Division 1 identified several additional key diversion and return structures along the South Platte River and installed and maintained satellite equipment on these structures to allow more timely information to be provided to our water commissioners and users. Funding from the Colorado Water Conservation Board assisted this activity. In addition, a new gage was installed and maintained at the state line that allows better monitoring capability for compliance with the South Platte River compact. The additional data allows our commissioners to better regulate the river and allows users to better understand river conditions that affect them. Along with this, the Colorado Decision Support System and the internet were used extensively to keep users informed of all call information in Division 1 the last two years on both the mainstem and tributaries. Previously, this information was only available on the mainstem of the river.

Division 1 has expanded its program to locate large capacity wells to more accurately

determine the location of several thousand wells in the South Platte and Republican River basins. This provided crucial data for the litigation concerning the Republican River and also provided information that will help more accurately determine the impact of well pumping on the South Platte basin.

Dam Safety

The dam safety branch in Greeley is staffed with four engineers to perform periodic dam inspections. Under the current "1-2-6" program, approximately 270 dams are scheduled for inspection each year. All Class I dams are inspected annually, Class II dams inspected every other year, and Class III dams every six years. At the recommendation of a recent legislative audit, dams inspected by federal agencies have been removed from the periodic program. This has removed approximately 20 dams from the program. In calendar year 2002, Division I staff performed 293 routine periodic inspections. Another 80 site visits were conducted as part of follow-up activities either to assist the dam owner or to check on changing conditions or repairs. Construction oversight activities resulted in 25 construction inspections.

Staff activities included assistance with inspections in Division 5 and Division 6 where dam safety engineers were unable to perform their duties due to medical injuries or vacancies. Two engineers spent a week each in Division 5 and one engineer completed the Division 6 inspections over a two-week period. To provide time to assist with the western slope inspections, some dams in Division 1 were not inspected based upon a previous determination that the dams were in satisfactory condition.

Planning for implementation of the Failure Modes and Consequences Analysis program continued with Dennis Miller being a lead participant. This process involves an in-depth review and discussion of potential dam failure modes, and the consequences of a failure. The goal of this program is to identify conditions that

could develop into a failure at a dam, and also to identify modes that could not lead to a failure. This effort would better direct attention toward dams which may be more likely to develop conditions leading to a failure, and direct resources away from dams that are less likely to do so. The program has not progressed as quickly as hoped due to budget cuts and program vacancies.

Another activity of the branch is the development of a database for profiling dams based upon risk associated with the design and operation of the dam. This concept was originally developed as an inventory tool for the US Bureau of Reclamation. Greg Hammer was selected as one of the team members to recommend modifications to the USBR tool, and develop a system for use by the Colorado dam safety branch. This project is progressing as time permits.

With the completion of the hydrologic review of the spillways for Class 1 and Class 2 dams, staff is now in the process of working toward correcting spillway deficiencies. Due dates have arrived for completion of improvements for the more seriously inadequate dams. Most of the dams currently not in compliance are being addressed with storage restrictions as owners have failed to meet the desired timelines.

A rehabilitation project begun in 2000 at the Idaho Springs Dam was completed in 2002 with repairs to the concrete spillway. The spillway was originally constructed in 1977, but failed structurally over the following winter. The dam has been under a storage restriction since that occasion.

Cracks found in the upstream face of the right gravity section of Tarryall Dam resulted in the lake being drained in response to a concern for the structural stability of the dam. The reservoir remains empty pending repairs.

The drought conditions have caused many reservoirs to be lowered below normal levels, or sooner than usual. This has allowed for inspection of the upstream slopes and outlets. This has created an increased workload not

only in inspection coverage, but has also prompted owners to perform more repairs to their dams. One notable project that was fortuitously timed was a dredging project at Windsor Lake. This work will restore storage lost by silting.



Tarryall Dam

In August a large sink-hole developed in the downstream slope of Lake Arrowhead Dam near Greeley. The sink-hole was located on the upper slope near the dam crest, and is the result of a deteriorated outlet conduit. The outlet had not been used for many years. The lake remains empty awaiting repairs.

Greeley staff continue to assist in design reviews for repairs and modification to facilitate prompt construction so that the reservoirs can be restored to full capacity as water comes available.

Hydrography

The Hydrographic Branch had a busy summer. Extreme low flows on the South Platte and its tributaries required numerous extra measurements, installation of stage-shift tables, gage maintenance trips, and water commissioner assistance.

Measurement of augmentation water delivered to Nebraska by the Julesburg Irrigation District

received special attention. Documentation of these deliveries could help prevent litigation between Nebraska and Colorado over the effects of wells on the South Platte River compact.

Hydrographic work included two new satellite installations, many measurements, and the training of a new deputy water commissioner/hydrographer (Russell Stroud) to work in the Julesburg area. Russell performed the entire range of hydrographic work-- making measurements, calibrating instruments and operating satellite monitoring equipment--in addition to an extensive routine of water commissioner observations. We would not have been able to effectively meet our growing need for this special information without Russell's assistance.

Water Commissioner Dave Rebis in Wray also made measurements on the Pioneer Ditch. These measurements are used to help compute Colorado's usage under the Republican River Compact. Installation of satellite monitoring on the Pioneer Ditch gages has improved the reliability of our information out there. Satellite monitoring has also increased communication between the Colorado and Nebraska users of the ditch who now regularly use Colorado's website to fuel their discussions.

Tracking augmentation water through and within districts proved very challenging. Frequent current meter measurements were required to insure that this water was bypassing headgates and reaching its destination. The need for more gaging points to track this water became immediately apparent. In a number of situations, augmentation water was run in a ditch (around certain headgates), and then returned to the stream through a rectangular weir section where it could be measured and recorded. Success with this approach required active cooperation from the ditch company, and this cooperation was not always received.

We also made use of CWCB grants, cooperative agreements, and coordination with the USGS to establish several new gages that

will be used to track augmentation water. Weir controls were achieved at the new gages on the St. Vrain Creek at Longmont and the Cache La Poudre River at the Greeley Wastewater plant. Gages like these with artificial controls can be operated with our existing staff since there is not a burden of continuous current meter measurements. We develop the permanent stage-discharge rating, and then turn routine calibration of the instruments over to our water commissioners and cooperators. CWCB grants were enlisted to fund establishment of new gages on the South Platte at Fort Lupton and Fort Morgan. These gages will be operated by the USGS with cooperative measurements (at critical times) by our hydrographers.



Construction of New Bear Creek Control Structure

CWCB money was also used to contract out the construction of a concrete control at our gage on Bear Creek at Morrison. Prior to this construction, historic low flows of less than 1 cfs at this gage were below our inlet pipes. The new control incorporated a low-flow section with a sharp-crested rectangular weir to give us better accuracy than we could get with our meters.

Hydrographic operations were affected by the burn area concerns. Denver started draining their reservoirs in the mountains to keep Cheeseman Lake levels high enough to dilute polluted runoff from the burn areas. This required extra measurements and visits to keep our gages calibrated through a range of abnormally HIGH flows in South Park as water was released quickly to get Cheeseman back up as soon as possible.



New Bear Creek Control in Operation

Finally, our staff remained shorthanded during this critical summer, with one FTE hydrographic technician position unfilled. Our regular technicians George Sievers, Merlin Friedrichsen and Rodger Burcher all racked up many miles and measurements, and engineers Lee Cunning and Bob Cooper had to juggle many tasks. We gratefully acknowledge the assistance of commissioners Shera Summerford and Brent Schantz, as well as EIT David Ellington who all pitched in with streamflow measurements.

Community Involvement

Division One personnel continue to attend and make presentations at ditch company meetings, conservancy district meetings as well as meetings of realtor and homeowner groups, schools and universities. Specifically, staff this year was involved in giving presentations at a Board of Realtors seminar concerning water and taught a class for a course at UNC. This year Greeley and Denver staff again worked a booth at the Greeley Farm Show. Staff answered questions of the public

that stopped at the booth. This year, given the uncertainty surrounding the operation of large capacity wells, a great many questions were related to those wells. The overall public response to the booth was positive.

Individual water commissioners and other Division staff attended and participated in many water user organization annual meetings. Division personnel were also actively involved in the South Platte Lower River Group and the Platte River Project group along with other groups associated with Endangered Species Recovery Plan efforts for the South Platte. Staff members were also involved in several public meetings on the lower end of the South Platte and numerous public meetings for groups providing augmentation for wells.

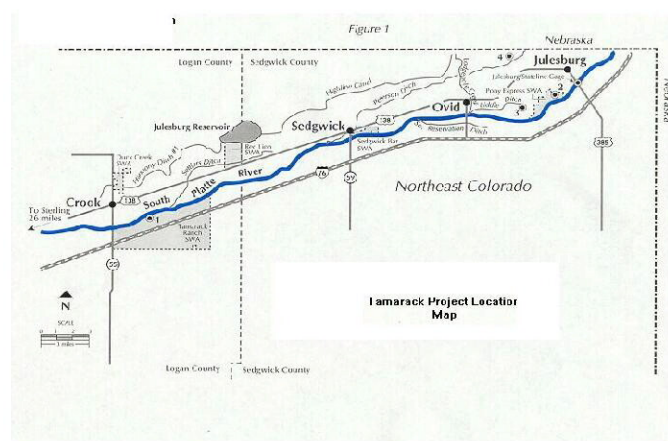
ONGOING PROJECTS

Tamarack Development

Colorado's commitment to provide water that will offset existing water depletions and mitigate for new depletions is called the *Tamarack Plan*. Colorado's *Tamarack Plan* plans to utilize managed groundwater recharge projects in the lower South Platte River in Colorado to develop water contributions to a Platte Basin ESA Program. These groundwater recharge projects involve the diversion of excess river flows by wells next to the river or by ditches to groundwater recharge basins. The seepage from these recharge basins returns through the groundwater aquifer to the river at a later time to augment river flows for the benefit of the target species.

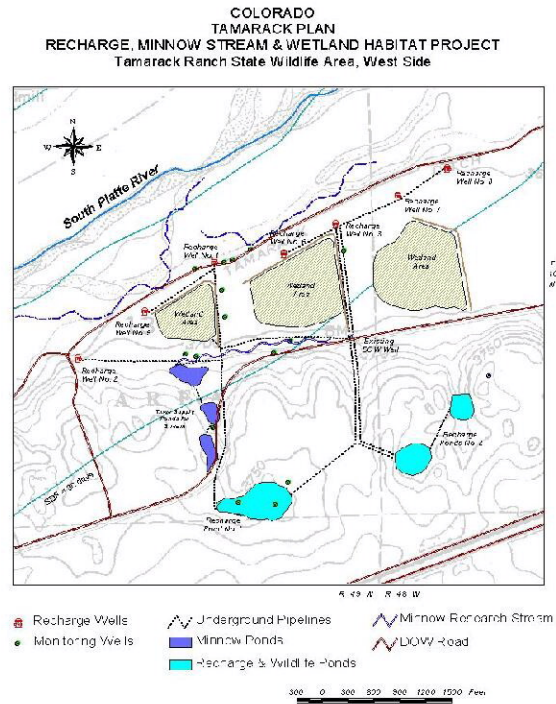
The lower South Platte River in Colorado is a gaining river system. The alluvial groundwater aquifer drains into the river channel because water levels in the aquifer are higher in elevation than river water levels. The increase in river flows as a result of the return flows/accretions from the aquifer can be 5 to 10

c.f.s. per mile as one moves downstream. The aquifer is supplied mainly from the seepage and deep percolation from existing canals, reservoirs, irrigation, and groundwater recharge programs. The managed groundwater recharge projects of Colorado's *Tamarack Plan* will increase the accretions that are already occurring to the river.



Colorado's *Tamarack Plan* has three phases. Phase 1 as described in Tab 3A of the Cooperative Agreement states; "the *Tamarack Plan* is estimated to increase flows at the Julesburg Gage during the period of April through September by an average of approximately 10,000 acre-feet over the flows that would otherwise occur during that period. Water developed under Phase 1 will reduce the occurrence of shortages to target flows at the species' habitat and thus allow existing uses in Colorado to continue diversions. Phase 3 of the *Tamarack Plan* is an expansion of the managed groundwater recharge operations and facilities which will supplement *Tamarack Phase 1* operations which is intended to yield additional water to allow continued use existing water activities at the Julesburg Gage during times of flow shortages in the critical habitat. Phase 3 was identified as a result of the study that produced the Program's Water Conservation/Supply Action Plan. The reconnaissance level analysis showed that the potential expansion of Colorado's *Tamarack Plan* would provide another 17,000 acre-feet of water towards meeting the Water Conservation/Supply Action Plan goal of 60,000 to 80,000 acre-feet of water.

Phase 2 of *Tamarack Plan* utilizes existing *Tamarack Plan* facilities to re-regulate water to replace the offset depletions caused by new water related activities as described in Colorado's Plan for Future Depletions (Tab 3B of the Cooperative Agreement). This re-regulation will shift net accretions to the stream resulting from future growth to periods of net depletions from future growth.



Colorado's *Tamarack Plan* consists of multiple groundwater recharge projects located on both public and private lands. The public lands include Colorado Division of Wildlife's State Wildlife Areas (SWA). The Tamarack Ranch SWA, located 30 miles above the Colorado-Nebraska state line, has been the location of a groundwater recharge demonstration project since 1997. The Pony Express SWA just above the state line and the Red Lion SWA between the Tamarack Ranch SWA and the Pony Express SWA will also be future locations of recharge efforts. The projects on these public lands use wells next to the river as the supply for the recharge basins.

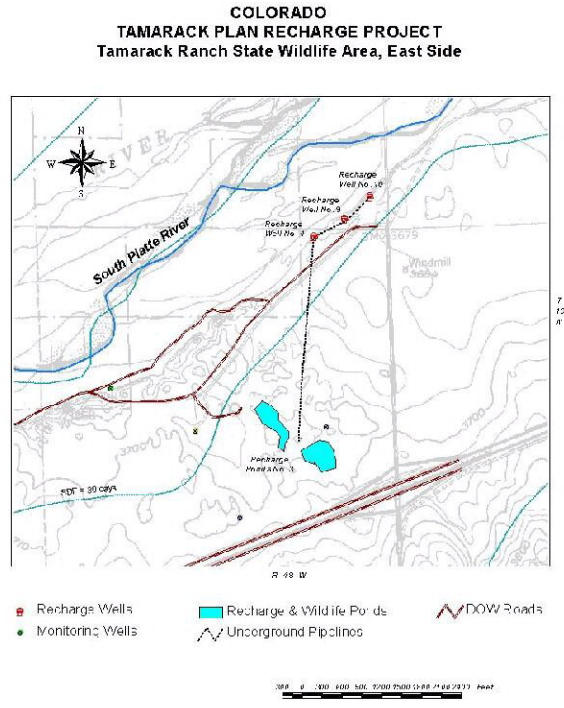
The projects on private lands involve agreements with private landowners along the

river and with private ditch companies. Numerous private landowners in the 30 miles of river from Tamarack Ranch SWA to the state line have expressed interest in developing wells next to the river to pump to recharge basins similar to the projects on the public lands. Private ditch companies on the South Platte River in Colorado run their ditches before and after the irrigation season in order for the ditch seepage to recharge the aquifer. These ditches also supply water to recharge basins. The ditch recharge programs are used primarily to augment their shareholders' irrigation well depletions, but also to generate excess accretion credits that are not needed for well augmentation. This is especially true during February and March when additional water is needed in most years by a Platte Basin ESA Program because of water flow shortages in the critical habitat in central Nebraska. As part of Colorado's *Tamarack Plan*, Colorado may also develop long-term agreements with private ditch companies to lease existing excess credits developed by the companies. Ditches for potential involvement in the *Tamarack Plan* include the Liddle, South Reservation, Peterson, North Sterling, South Platte, Lower Platte and Beaver, Upper Platte and Beaver, Bijou, Ft. Morgan, Pioneer, and Riverside. The locations of these ditches are from Greeley to Julesburg.

During 2001, the remaining work necessary to make an additional 7 wells operational has been completed bringing the total number of operational wells at the Wildlife area to 10. This work included installation of underground pipe for the wells and completion of well electrical installation. The first pumping of all 10 wells began in June of 2001. The additional wells along with the existing wells have been delivering water to old and new recharge sites with 60-80 SDF days. Prior to implementation of the ESA, recharge accretions are being leased by GASP for well augmentation purposes.

Extensive monitoring has also been installed to document the returns of water recharge at the site. In addition, the Colorado Division of Wildlife in cooperation with the Colorado Division of Water Resources and the Northern

Colorado Water Conservancy District has begun development of a Mod Flow model to confirm the timing of accretions to the South Platte River from recharge. This modeling will help assure adequate accounting for these recharge credits and assist in future planning of the Tamarack plan.



In addition to the wells being constructed at Tamarack for recharge purposes, a live stream section has been constructed at the Tamarack Wildlife area for raising and studying native South Platte minnow species of concern. This live stream became operational this fall with the introduction of Brassy Minnows and Suckermouth minnows into the stream. The stream is being fed by one of the wells at Tamarack pumped into three small supply ponds. The supply ponds were constructed to assure a supply of water even if electricity is cut off temporarily at the site.

Colorado State University (South Platte Map)

Division One continued as a participant in the tools being developed by the Integrated Decision Support group (IDS) at Colorado State University. The Groundwater Appropriators of the South Platte (GASP), the Central Colorado Water Conservancy District (Central), the Lower South Platte Water Conservancy District (LSPWCD), the Northern Colorado Water Conservancy District (NCWCD), the South Platte Lower River group, the City of Greeley and Fort Collins and the Division of Water Resources (DWR) among others have contributed to and expect to be able to utilize these tools, and have access to data needed to better define depletions and replacements. The work has been financially supported by the participating organizations, the Colorado Water Resources Research Institute (CWRRI), the CSU Cooperative Extension and the US Bureau of Reclamation.

Each participating organization, in addition to providing financial support for the project, has provided regular feedback through meetings held approximately every two months. The result of this close partnership is the development of a set of computer tools that are collectively called the South Platte Mapping and Analysis Program (SPMAP).

SPMAP includes a Geographic Information System Component – an ArcView based tool that allows the user to identify parcels of land, select wells that serve the parcels, identify the closest weather stations, and assign crop types to parcels. GIS themes include well locations, streamflow depletion factors, satellite images, USGS quad images and basic data such as county boundaries, roads and hydrography to assist in the mapping and the analysis. The satellite imagery as a part of this component has already been an invaluable tool in the well identification program being carried out by Division One.

A consumptive use (CU) model has also been developed as a part of the system. Input for the CU model can either be imported from the GIS component or independently. The CU model will allow the estimate of consumptive use for individual farms or whole ditch systems. This

ability was enhanced in 2002 to allow the use of hypothetical scenarios. In addition, CSU worked very closely with the Central Colorado Water Conservancy District utilizing their customer database to help them automate a process to import their data into the CU model.

A user-friendly modular SDF tool has also been developed to estimate stream depletions using well pumping CU or stream accretions due to recharge. This tool can be used in conjunction with the consumptive use model or as an independent program taking information from other sources. In 2001 and 2002, the code for this tool was changed to allow input of daily information in addition to monthly information. In addition, a user friendly interface was developed which allow runs of the Glover model to determine impacts of well pumping using this simplified mechanism.

A set of tools has also been developed to locate wells based on different types of location information (legal description, footing calls or GPS) and compare the results of these various methods of determining location. This is an extension to ArcView version 3.X

Well Location Program

Continued work on this program was postponed at the end of June 2002 due to budget restrictions and DWR awareness that user fear of well administration might create unnecessary conflicts with DWR staff.

Amended Abandonment List

The Division filed its amended abandonment list with the Court prior to December 31, 2001 as required by Statute. Water users then had until June 30, 2002 to file a protest with the court to the inclusion of any water right on the amended list. Protests resulted in 16 Water Court cases associated with the abandonment list. The Division of Water Resources has already stipulated in some of these cases as users

have provided additional information to document that the water rights were not abandoned. In other cases, the Division has stipulated to the removal of water rights based on the protestant filing for a change of use for the subject right. The historic use of the right or its abandonment will then be determined by the Water Court based on the rights historic use. By statute, the Water Court makes final decisions concerning the abandonment of water rights. (Please see the Abandonment Timetable included with this report for more detail on the abandonment time lines)

South Platte Decision Support System

The Colorado Water Conservation Board (CWCB) and the Colorado Division of Water Resources (DWR) have identified a need for, and funded, the South Platte Decision Support System (SPDSS) Feasibility Study. Funding for the SPDSS Feasibility Study was provided by the CWCB from its Construction Fund under SB99-173. The purpose of this study was to determine the feasibility of developing and implementing a DSS with appropriate data and analytical tools for making informed decisions regarding management of the water resources of the South Platte and North Platte basins in Colorado. The feasibility study was completed in October of 2001. The study provided information concerning the users, components, costs and schedule for developing a decision support system for the South Platte River Basin.

The SPDSS project will accomplish the following:

- Provide data required to fulfill the direct data needs of water users, water suppliers, water managers and State officials, as well as provide the appropriate data needed for the required analytical tools. Required data for use in analytical tools will be collected through an initial data collection effort, expected to last 2 to 3 years, before any analytical tool development begins.
- Provide comprehensive, accurate and user-friendly databases of required data compatible with the HydroBase database.
- Provide data and analytic tools to evaluate proposed alternative water resources projects and management plans. These data and analytic tools should: (1) facilitate development of projects, plans and strategies that optimize the use of available resources for a range of hydrologic conditions and (2) provide for development of efficient and effective water projects and management strategies.
- Provide real time data and analytic tools to State officials for efficient and equitable administration of water rights.
- Provide real time data to water managers, suppliers and users for accounting purposes.
- Provide a functional, integrated system that can be efficiently maintained and upgraded by the State in the future.
- Have the capability to accurately represent current and future Federal and State administrative and operational policies and laws.
- Promote information sharing among government agencies and water users.
- Respond to the recommendations detailed in the April 1998 Senate Bill 96-74 study, *Denver Basin and South Platte River Basin Technical Study* (SB 96-74).
- Have the capacity to be an extension of, and compatible with, the existing CRDSS, and the nearly complete RGDSS.
- Respond to those situations and concerns in the study area which differ in some respects from the Rio Grande and Colorado River basins; e.g., multiple groundwater systems, increased urbanization of

agricultural lands and the consequent transfer of irrigation water rights to municipalities, increased runoff from impervious areas in rapidly urbanizing portions and lawn irrigation return flows.

In 2002, consultants were selected, contracts were drawn up, and Scopes of Work were completed using the guidance in the final report of the feasibility study. Below is a list of the SPDSS components and the contractors selected to complete them. A consultant for the surface water component will be selected in 2005 or 2006.

Component	Consultant
Ground Water	Camp Dresser & McKee,
Surface Water	Selected in 2005/2006
Consumptive Use & Water Budget	Leonard Rice
GIS & System Integration	Riverside Technologies

ONGOING ISSUES OR OPERATIONS

Platte River Endangered Species Partnership

The whooping crane, piping plover, and interior least tern, which are listed as threatened or endangered under the federal ESA, are migratory birds that use the Central Platte River Valley in Nebraska. The pallid sturgeon, which occurs in the Lower Platte River between its confluence with the Elkhorn and its confluence with the Missouri River, is also listed as endangered. Together, these four species are the "target species" for the conservation partnership that is trying to assist the species and their habitat and also allow for continued and new uses of water in the basin states. Because of their listing, the target species have tremendous impact on both existing and future water use in Colorado because any water project in the South Platte

River needing a federal permit must consult with the U.S. Fish and Wildlife Service (FWS) and ensure that the project will not jeopardize the continued existence of the species or adversely impact their habitat. Because most significant water activities have been determined to cause jeopardy by the FWS, mitigation efforts are an inescapable requirement for Colorado water users.

After considering several alternatives to address the ESA issues raised by the species on the Platte River, Colorado and its South Platte water users signed a Cooperative Agreement in 1997 to develop a basin-wide program that would provide defined benefits to the species and would also provide certainty to water users with existing water rights and allow new development of water to occur. The signatories to the Cooperative Agreement believe that the best approach to addressing the Endangered Species Act issues in the Central Platte region is a basin-wide, cooperative effort to improve and maintain habitat for the target species rather than having each water project to undergo individual review and lengthy proceedings to develop individual measures to help listed species. The signatories believe that a basin-wide, cooperative approach will be more effective, efficient, equitable, and provide greater certainty for water users regarding compliance with the ESA.

The original term for the Cooperative Agreement was 3 years, or until June 30, 2000. In view of a very complex set of issues, a number of the original milestones set out for program recommendations were not completed, and several new tasks that required future milestones were developed. At that time, the Governance Committee accepted a 2 1/2-year extension of the Cooperative Agreement, which extended the Agreement to June 30, 2003. Currently, the Governance Committee is looking at another extension of the Cooperative Agreement to December of 2004 because of new issues that arose in the last year and in order to account for upcoming results of an independent investigation into the species'

habitat needs that is to be conducted by the National Academy of Sciences.

Currently, the Department of the Interior is in the process of preparing an updated environmental impact study to evaluate the revised proposed Program and alternatives, and to recommend a Preferred Alternative as required under the National Environmental Policy Act (NEPA). A Draft EIS is expected to be completed in October of 2003 and available for public comment at that time.

While some critical issues remain to be resolved, the basic components of the proposed basin-wide Program have been identified and largely agreed upon in concept by the participants in the Cooperative Agreement. The components of the proposal include water and land, which would be managed to improve and maintain habitat for the species. A new federal evaluation of the revised basin-wide Program proposal is currently being conducted to determine if the implementation of the proposed Program will provide sufficient benefits to the target species, as required under the National Environmental Policy Act (NEPA). If completed and agreed to, the parties intend that a final Program will be selected and they will enter into a formal agreement for its implementation.

Proposed Plan

The first phase, or increment, of the proposed Program (10-13 years) includes the following major components:

1. **Water.** Provide for a reduction in shortages to the current target flows by an average of 130,000 to 150,000 acre- feet per year. The water component of the proposed Program would include three agreed upon projects:

- Restoration of the original storage capacity of Pathfinder Reservoir in Wyoming.
- Establishment of an environmental water account in Lake McConaughy in Nebraska.
- Development of a groundwater recharge and river re-regulation project near Tamarack State Wildlife Area in Colorado.

These three actions are expected to reduce shortages by approximately 80,000 acre-feet of water. A reconnaissance level study has been completed and has identified additional projects throughout the basin which could provide an additional 50,000 to 70,000 acre-foot reduction in flow shortages through water conservation and water supply options.

In addition, each of the three states, the federal government, and the U. S. Forest Service are developing plans to mitigate for new water projects (new depletions plans). These plans will offset the impacts to target flows caused by new water activities in the basin. Colorado's plan has been evaluated and accepted by the Governance Committee, while the other plans are in the conceptual stages, and will need to undergo detailed review by the Water Committee and the Governance Committee.

2. **Land.** The proposed Program would protect or restore (through acquisition, lease, or easement,) 10,000 acres of habitat in the Central Platte River area between Lexington and Chapman, Nebraska during the first increment. The Nebraska Public Power District's Cottonwood Ranch between Overton and Elm Creek (2,650 acres) will contribute to that goal.

In later increments of the proposed Program, the holdings of the Platte River Whooping Crane Maintenance Trust, the Nebraska Game and Parks Commission, the Nature Conservancy, and the Audubon Society, totaling approximately 9,000 acres of habitat, will be included toward the long-term goal of 29,000 acres.

All water conservation, habitat management, leases, easements, or acquisition of lands to meet these goals will be undertaken only with willing sellers and participants.

3. Monitoring and Research. Progress made under this initial phase of the proposed Program will be closely monitored through a vigorous Integrated Monitoring and Research Plan (IMRP). Using data from the IMRP, the cooperating entities will evaluate the results of

the first increment actions, define any changes or subsequent approaches and actions needed to enhance the species' habitat, and incorporate those adjustments in a second increment of the Program.

4. Channel Stability Investigations. When the federal EIS team evaluated the first version of the proposed Program, they found that the proposal made the habitat worse in Central Nebraska because the Program's clear water (lacking sediment) and would narrow and deepen the river channel, a response that is opposite to what was desired. After two years of new analysis, a stepwise procedure was developed to introduce sediment and pulse flows on Program lands to establish a better balance between water flow and sediment loads which is expected to create more of the desired intermittent sand bars and result in a wider and shallower river channel.

5. Pallid Sturgeon Investigations. While the pallid sturgeon is listed as endangered, there is relatively very little known about the habitat of the pallid sturgeon and what measures would work best to enhance and maintain it. In order for the Program to be considered as a significant benefit for the pallid sturgeon, the Program will undertake robust investigation and research in order to fill in the unknown aspects surrounding the fish. Information learned from the first increment of the Program will be incorporated into the second increment actions to enhance and maintain sturgeon habitat.

Current Activities

Dick Stenzel continued to serve on the Water Management Committee in 2002. The Water Management Committee has the responsibility to establish a tracking and accounting system that will determine the depletion/ accretion impacts for the three water projects proposed by each cooperating state, new water related activities, and the water conservation/ supply projects. In addition to the activities in the Water Management Committee, we have also attended additional meetings of the three states in an attempt to get consensus on many issues that affect all the parties.

Republican River Compact Litigation

A stipulated settlement to the Republican River interstate compact lawsuit before the United States Supreme Court, Kansas v. Nebraska and Colorado, was filed with the Special Master on December 16, 2002. It is anticipated that the Special Master will present his report on the settlement to the Supreme Court within the first quarter of 2003.

The Republican River Basin covers a 24,900 square-mile watershed located in parts of northeastern Colorado, southwestern Nebraska, and northern Kansas. In 1942 the Republican River Compact was ratified by the states of Colorado, Kansas and Nebraska to provide for an equitable distribution of the water tributary to the Republican River. The historic allocation of available waters among the three states was based upon the application of surface stream diversions and alluvial groundwater pumping to beneficial use.

The lawsuit was initiated during the summer of 1998 when Kansas filed a petition with the United States Supreme Court asserting that the unregulated development of thousands of deep wells into the Ogallala aquifer in Nebraska resulted in Nebraska using more water than they were entitled to under the Compact, greatly diminishing the natural stream-flow of the Republican River as it crossed into Kansas. The U.S. Supreme Court appointed former Maine Supreme Court Justice Vincent L. McKusick to serve as Special Master to preside over this matter.

As a party to the Republican River Compact, Colorado closely monitored the lawsuit but undertook no formal action since the claim brought by Kansas targeted Nebraska use and potential compact violations only. That changed dramatically in 2000 as Nebraska filed a counter-claim against Colorado alleging that if Nebraska had violated the Compact by their Ogallala aquifer pumping, then Colorado did also. The Special Master accepted Nebraska's claim against Colorado. This made Colorado an active party in the lawsuit.

Settlement discussions to resolve the Republican River Compact lawsuit were initiated in October 2001 at the urging of both the Special Master and the United States, an *amicus curiae* in the case. The main points of the settlement include: (A) a waiver of claims and damages through December 15, 2002 by each state; (B) a new well moratorium in the upper end of the basin (Colorado and Kansas agreed that their existing stringent well restrictions would not be reduced); (C) ground water use accounting via a model developed jointly by the three states and the Federal government to be completed by July 1, 2003; (D) other detailed water accounting agreements; (E) a lower basin administration agreement; (F) a process for future dispute resolution; and (G) an agreement to cooperate on several technical studies.

COURT DECISIONS

Golden Boat Chute (98CW448)

The City of Golden Whitewater Course challenged several operating principles historically endorsed by the Division Engineer. First was the concept of “diversion and control”. Golden argued that the mere placement of material such as boulders, grouting, etc. within the streambed to form river currents and eddies constituted a diversion and control of the stream. The state argued that the historic concept of a channelized diversion was required to obtain a water right, even if such “diversion” was in stream as in the case of previous “boat chutes” built to provide passage through shallow reaches of a stream. Second was the state’s position that statute allowed only the Colorado Water Conservation Board to obtain “in-stream” water rights. Thirdly, the state argued that any water right awarded should be limited to that “reasonably required” to provide the recreational benefit as opposed to awarding the city the right to more or less “command the hydrograph” of the river.

After a several day trial, Judge Hayes ruled against the state on all issues of concern. The ruling on an appeal presented to the Supreme Court of Colorado (01SA252) in October 2002 is expected sometime in 2003.

South Platte Rules (02CW108)

The Supreme Court, in its ruling regarding a Division 2 Water Court Case, determined in *Empire Lodge vs Moyer (00SA211)* that the state engineer did not have the authority to approve replacement plans. The potential import of this decision on the South Platte River Basin was to render inoperable some 4000 irrigation wells which have for 30 years relied upon annually renewed substitute supply plans issued in accordance with rules and regulations adopted by the state engineer and reviewed by the water court in 1974.

In response to the Supreme Court ruling, two actions were taken. The legislature passed HB1414 (Section 37-92-308, C.R.S) which specifically authorized the state engineer to issue substitute water supply plans to users who had filed an with augmentation plan with the court, to users whose plan lasted less than 5 years in duration and to users for human health and safety emergencies. These plans were limited to a 90 day duration. The bill also allowed the State Engineer to extend existing previously approved plans for one additional year.

The State Engineer also moved to amend the South Platte Rules and Regulations to specifically incorporate the use of replacement plans. These rules were modeled after rules already adopted by the Division 2 Water Court as well as the Special Master overseeing compliance with the Arkansas Compact. Opponents to the concept challenged the state engineers authority, as set forth in the amended rules, to allow out-of-priority diversions pursuant to state engineer approved “replacement plans”.

Judge Hayes ruled on December 23, 2002 “that the SEO does not have the authority to generally approve out-of-priority diversions. Specifically, he ruled “The division engineer’s enforcement discretion does not include the authority to determine the adequacy of replacement water in amount, timing, or location so as to prevent injury to senior rights. Rather, the division engineer has the authority to allow a junior diversion if curtailment of that diversion would not provide to a senior the water that remains in the system as a result of the curtailment. To the extent that the 2002 Proposed Amended Rules allow the division engineer to make determinations concerning depletions and replacement water, they are contrary to existing law.”

The court’s decision has caused significant concern for users especially those well owners associated with the Groundwater Appropriators of the South Platte (GASP) who have operated their 3000 wells under substitute supply plan approval for over 30 years. GASP does not own many of its resources and instead leases water on an annual basis, making the formulation of a fixed plan for augmentation that can be reviewed once for all by the water court very difficult.

As a result, the year ended with an immediate appeal of the court’s decision to the Supreme Court (02SA377) and the looming prospect, absent relief from either the Supreme Court or the legislature, of the unprecedented and economically disastrous shut-down of nearly 3000 wells.

Oulette Administration (02CW191)

As a direct result of what many are already calling the most severe drought in the recorded history of the South Platte River Basin, the division engineer was required to curtail water rights which have never before been out of priority. One such example was the City of Golden’s changed water rights from the Oulette Ditch. The City of Golden, in a 1966 decree changed a portion of the Oulette Ditch, Clear Creek Priority No. 5, to municipal use and

obtained an alternate point of diversion to a location upstream of the Farmers Highline Canal, which also had some changed Oulette Priority No. 5 water as well as an original Priority No. 9 diversion right. In so doing, the City of Golden agreed to not divert water at the alternate point of diversion any time the changed volume of water was available at the original Oulette headgate and such diversion would “result in a call at the headgate of the Farmers Highline Canal on the No. 5 and 9 rights divertible at said headgate.”

In July 2002, the flow in Clear Creek dropped to the point where the No. 9 right was not being satisfied. Upon review of Golden’s change decree, the Division Engineer issued a Cease and Desist Order to curtail the city’s diversion of the Oulette water. Because the City of Golden had chosen to not implement any watering restrictions (the only municipality in the Denver metro area to not curtail outside uses) and the fact that the Oulette water was the city’s only in-basin water supply, the city was thrown overnight into turmoil regarding its water supply. It responded by challenging the Division Engineer’s order in court.

The city presented two main arguments to the Court. One argument was the proposition the city called its “cusp” theory of administration. The basic tenet of this argument is that the city’s diversion only “resulted in a call” when the No. 9 priority was short less than or equal to the amount being diverted by the city. Once the No. 9 right was short more than the volume being diverted by the city, the city’s diversion was no longer the reason for the call and should therefore no longer be limited by the terms of the 1966 change case. The Judge disagreed.

The second theory presented is that the return flows available at the Oulette headgate in 2002 were significantly increased over what they were in 1966 because of the development of the area, lawn return flows, etc. Further, the 1966 decree could not reasonably be expected to foresee that, for all intents and purposes, there would always be the changed volume available at the Oulette headgate; the

significance being that if the changed volume were not available at the original headgate, then there was no longer a limitation on taking water at the alternate point of diversion. The city argued that since the development over time now removed any potential relief from the limitation, the Judge should accept their argument and lift the order. The Judge, again, disagreed.

The city, upon losing the case, restricted outside water uses, leased water from other municipalities to supplement their import water supplies, and appealed to the Supreme Court (02SA364).

PERSONNEL/WORKLOAD ISSUES

Well Location Program

After almost full six years of successful operation, the South Platte River basin portion of the well location program was put on hold in June of 2002 for two reasons. First was the protection and safety of the well locators. Due to the drought, one of the major well augmentation organizations sent a letter to its members indicating that they did not believe they had enough water to replace 100% of their members depletions for the 2002 irrigation season (it turned out that they had just enough). This, in turn, caused the well operators to assume the well locators were gathering information on their wells which would then be used to issue cease pumping orders. After several confrontations and an increasing level of physical threats (even though our well locator was a young man physically large enough to be a lineman for the Denver Broncos), the decision was made to put this program on hold before someone got hurt.

The second reason for putting the South Platte River basin portion of the well location program on hold related to the reduced revenues State Government as a whole was experiencing.

This program was previously operated by hiring college students as temporary employees with funds from the Ground Water Management Fund and reallocation of part time staffing authorities. Because of the reduced revenues, a state wide hiring freeze was implemented by the Governor in March and continued by the Department of Natural Resources in June. This resulted in not being able to hire the necessary college students to continue the program.

The well location program was continued in the Republican River Basin using Groundwater Management Funds and the Water Commissioner in Districts 49 and 65. This was possible since this area lies within a Designated Ground Water Basin and was involved in interstate litigation between Colorado, Kansas and Nebraska. In these two districts, approximately 117 alluvial wells and 2,400 Ogallala wells have been located by GPS.

The well location program began in former Water District No. 2 near the City of Brighton during the 1997 irrigation season. Since that time approximately 3,200 wells have been located in former Water Districts 1, 2, 5, and 64 in addition to the wells located in Districts 49 and 65. There are approximately 9,500 non-exempt wells in the South Platte basin, so this project is approximately 1/3 complete.

It is expected that the well location program in the South Platte basin will be reinstated after the operation of non-exempt wells is sorted-out. The funding to do this should be provided as part of the SPDSS program to contract for additional manpower to locate wells. These individuals will be in addition to the use of existing Division 1 staff and interns.

Personnel Changes

Retirements in key positions resulted in the loss of over 110 years of experience in the Division One area. Dick Stenzel, Division One Engineer for the past 7 years, retired after 25 years of service. Don Brazelton, long time Water Commissioner on the Big

Thompson River, retired after 30 years of service and Mae Cuning, District 1 Water Commissioner on the main stem of the South Platte, retired after 22 years of service. Gloria Nelson, administrative assistant and chief pastry chef, retired after what was unanimously determined to be too short a time at just 5 years. In addition to these direct losses from the Division Staff, two key engineering support positions from the Denver office were also vacated with the retirements of Purushottam Dass and Bill McIntyre, 16 years and 18 years, respectively.

Jim Hall was appointed the Acting Division One Engineer with no indication, due to budget constraints, as to how long the Division Engineer's position will remain unfilled. Fred Renner, previously Hydrographer and Deputy Water Commissioner on the Big Thompson, was selected to fill the Water Commissioner vacancy left as a result of Don's retirement. On the main stem, the role of District 1 Water Commissioner was filled by Brent Schantz, previously Hydrographer/Deputy Water Commissioner for District 2.

Thankfully, three new personnel were also added. Lee Cuning was hired from private practice to fill the Hydrographer position vacated by Ted Anderson. Second, a new position added by the legislature to assist with the challenges of District 7, Clear Creek, was filled by Scott Cuthbertson, who was previously an engineer on the Denver Basin team in the Denver office. Russell Stroud, formerly a temporary employee working on the well location program, was selected to fill the newly created position of District 64 Deputy Water Commissioner and Hydrographer. Shera Sumerford, Deputy Water Commissioner for District 2, now splits time as Deputy Water Commissioner for both Districts 2 and 4.

With the continued drought, it will be very challenging for the Division to meet all its administrative obligations. The workload will dramatically increase if significant well curtailment becomes necessary next year because of the drought or because of legal limits to the use of wells. Already, workload has

increased significantly due to increase disputes created by the drought especially in drainages like Clear Creek. Even without the drought, increased activity associated measurement and record keeping of new augmentation supplies including increased recharge and the pumping of wells far from the river for replacement have increased workload.

Innovative Administration Processes

As discussed in previous reports, Division 1 has taken many steps in the last few years to take advantage of technology and other opportunities for innovative administration. These have included the South Platte Map, the well location program, the Platte River Endangered Species Partnership, the restructuring of personnel assignments, the development of pilot Water District notebooks and facilitation of augmentation supply deliveries without existing structure modification.

In 2002, the most innovative administrative process concerned ways to minimize the impact of the drought on water users. Two of the main processes used to do this were headgate bypasses and augmentation wells to provide replacement water for out-of-priority well depletions. Although each of these methods was used to provide replacement water, they differ radically in the approach to providing this water.

A headgate bypass is when an irrigation ditch returns water to the stream at its headgate that it is entitled to take under its senior right to replace stream depletions caused by the pumping of shareholder's wells. There are three aspects to consider in ditch bypasses: (A) historic diversions during the subject time period; (B) replacement of historic ditch water return flows; and (C) increased well pumping because of reduced surface supplies.

Historic diversions must be considered to verify that the ditch is bypassing water that actually would have been taken for irrigation purposes. This is typically only a consideration during the "shoulders" of the irrigation season in the spring

and fall when there may or may not be a demand for irrigation water. During the main summer irrigation season, senior irrigation ditches generally have a solid history of taking all the water to which they are entitled during dry years.

Replacement of historic ditch return flows is a consideration to prevent injury to downstream rights that have historically had the benefit of those return flows. In the 2002 irrigation season, a 50% rule of thumb was used for historic return flows. That is, 50% of the amount of water bypassed was credited as replacing well pumping depletions and 50% was assumed to replace the historic return flows. During the 2003 irrigation season, a more sophisticated approach to return flows is planned to try and more closely duplicate the historic return flow pattern of immediate surface flow returns and delayed groundwater flow returns.

Increased well pumping because of reduced surface water supplies is addressed by incorporating the increased well pumping into the existing well pumping depletion calculations. This insures that all of the depletions are known and replaced at the time they reach the river.

Augmentation wells are those wells which are located quite a distance from the river that can pump water directly back to the river via a ditch, stream, pipeline or other conduit. The use of these wells takes advantage of the time delay inherent in ground water movement in alluvial aquifers. Use of these wells provides water to replace today's out-of-priority stream depletions caused by pumping irrigation wells while the stream depletions from pumping the augmentation well will not impact the river until months or years in the future. These future stream depletions must be tracked and will have to be replaced if they occur during a period of call.

Augmentation wells have been especially popular in the lower end of the South Platte River basin because this area normally only experiences a call for 90 to 100 days per year,

thus there is a high probability that only a portion of the augmentation well stream depletions will need to be replaced once the drought is over. The use of these wells is expected to move further up-river during 2003 in response to the continuing drought as one of the few viable methods to provide replacement water when surface supplies are very scarce.

Employee Recognition

Water Commissioner of the Year

George Varra was selected as the Water Commissioner of the Year for Division 1. George, who had previously been the Deputy on the river, is in his third year as Water Commissioner. The Poudre River is one of the most difficult basins to administer with several transbasin diversions, multiple exchanges and simultaneous calls, and municipal, industrial and irrigation users. This position is also entrusted with significant responsibility concerning the management of Colorado Big Thompson project water. George completes these tasks with the minimum of controversy and maximum cooperation of his users.



George has excellent communication skills, work ethic, and understanding of his District and the water rights system. This year, he managed to successfully shepherd water out of the Poudre River past senior ditches that had not previously been required to pass large quantities of water. He was also required to make out-of-priority storage releases from a number of reservoirs; another first in the Poudre River basin.

Abandonment List Timetable

- 3-15-00** Water Commissioners submit lists of water rights to be considered for list along with documentation (except for photographs and ownership information). The list should be in priority order.
- 4-1-00** Division completes review of proposed abandoned water rights making final decision as to those to put on the abandonment list.
- 6-1-00** Finish check on ownership by Water Commissioners.
- 6-1-00** Photographs due from Water Commissioners for structures to be put on abandonment list.
- 7-1-00** Official Publication of Abandonment List by Denver office.
- 7-1-00** Begin mailing of list to water right owners.
- 7-1-00** Publication of abandonment list and official notices in county newspapers for four weeks.
- 7-31-00** Mailing must be complete (Section 37-92-401 (2)(b) CRS).
- 7-1-01** Last day to protest abandonment list to DWR (Section 37-92-401 (3) CRS)
- 12-31-01** Division Engineer finalizes list and files with the water court (Section 37-92-401 (4)(c) CRS).
- 1-31-02** Water Court publishes the final list in the resume (Section 37-92-401 (4)(d) CRS).
- 6-30-02** Deadline for filing protests to the abandonment list with the court (Section 37-92-401 (5) CRS).

Water Administration Data Summaries

Runoff Forecast

SOUTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of January

RESERVOIR	USABLE CAPACITY	USABLE STORAGE		
		THIS YEAR	LAST YEAR	AVERAGE
ANTERO	20.0	0.0	20.0	16.4
BARR LAKE	32.0	15.0	24.8	24.0
BLACK HOLLOW	8.0	2.1	2.8	3.9
BOYD LAKE	49.0	6.0	20.4	32.1
CACHE LA POUFRE	10.0	2.2	2.4	7.2
CARTER	108.9	94.1	77.2	84.6
CHAMBERS LAKE	9.0	2.6	3.1	3.0
CHEESMAN	79.0	48.2	57.8	59.7
COBB LAKE	34.0	2.5	6.9	13.9
ELEVEN MILE	97.8	44.5	99.6	95.9
EMPIRE	38.0	15.2	30.3	22.8
FOSSIL CREEK	12.0	5.0	7.1	6.8
GROSS	41.8	17.8	22.5	26.0
HALLIGAN	6.4	2.5	4.3	4.3
HORSECREEK	16.0	1.1	11.9	11.6
HORSETOOTH	149.7	15.5	13.4	99.0
JACKSON	35.0	24.1	20.0	26.1
JULESBURG	28.0	15.8	14.7	18.8
LAKE LOVELAND	14.0	8.0	10.3	8.7
LONE TREE	9.0	5.9	8.5	6.4
MARIANO	6.0	0.5	1.5	4.2
MARSHALL	10.0	3.3	4.8	5.1
MARSTON	13.0	4.8	16.2	12.8
MILTON	24.0	3.0	16.5	15.5
POINT OF ROCKS	70.0	18.9	45.9	57.0
PREWITT	33.0	2.3	17.9	19.3
RIVERSIDE	63.1	18.0	42.6	41.7
SPINNEY MOUNTAIN	48.7	14.5	22.1	33.3
STANDLEY	42.0	19.8	32.6	33.1
TERRY LAKE	8.0	1.4	5.1	5.3
UNION	13.0	5.6	9.2	10.6
WINDSOR	19.0	0.4	5.5	10.8

Information taken from Colorado Basin Outlook Report, February 1, 2003

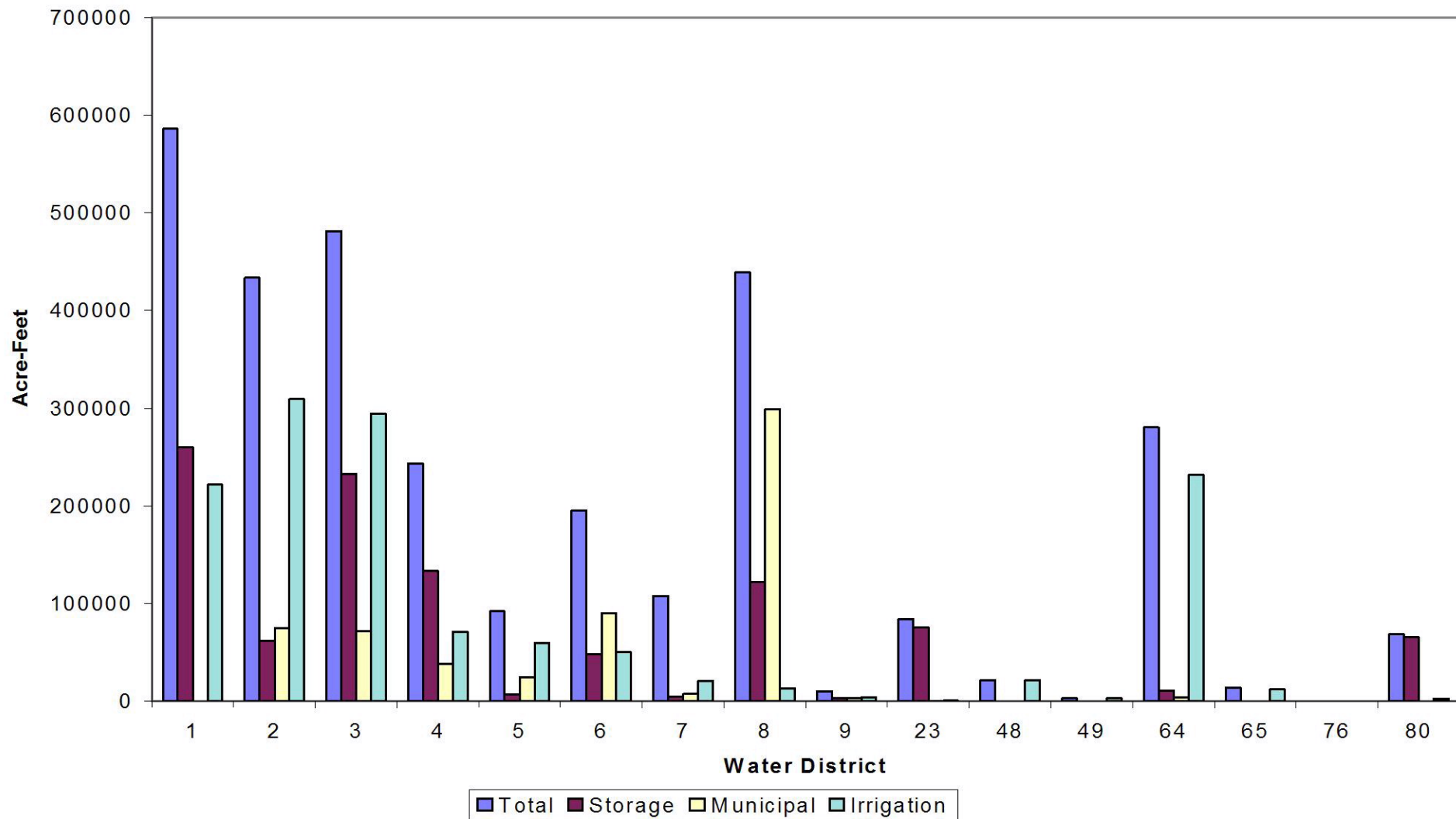
SOUTH PLATTE RIVER BASIN WATER SNOWPACK

WATERSHED	NUMBER OF DATA SITES	THIS YEAR AS % OF	
		LAST YEAR	AVERAGE
BIG THOMPSON BASIN	6	130	70
BOULDER CREEK BASIN	5	121	61
CACHE LA POUFRE BASIN	8	130	77
CLEAR CREEK BASIN	4	107	59
SAINT VRAIN BASIN	4	142	57
UPPER SOUTH PLATTE BASIN	15	129	63

*Information taken from Colorado Basin Outlook Report, February 1, 2003.

Water Diversion Graph

**DIVISION 1
2002 Diversions**



Transmountain Diversions

**2002 TRANSMOUNTAIN DIVERSION SUMMARY - INFLOWS
(November 2001 - October 2002)**

RECIPIENT								SOURCE		
WD	ID	NAME	STREAM	10 YEAR AVG		CURRENT YEAR		WD	ID	STREAM
				AF	DAYS	AF	DAYS			
3	4604	WILSON SUPPLY DITCH	CACHE LA POUFRE RIVER	1,315	42	256	43	48	4604	SAND & DEADMAN CR.
3	4608	DEADMAN DITCH	CACHE LA POUFRE RIVER	112	17	138	38	48	4608	DEADMAN CREEK
3	4606	BOB CREEK DITCH	CACHE LA POUFRE RIVER	14	18	3	29	48	4606	NUNN CREEK
3	4607	COLUMBINE DITCH	CACHE LA POUFRE RIVER	0	0	0	0	48	4607	DEADMAN CREEK
3	4600	LARAMIE-POUDRE TUNNEL	CACHE LA POUFRE RIVER	11,778	93	11,143	170	48	4600	LARAMIE RIVER
3	4605	SKYLINE DITCH	CACHE LA POUFRE RIVER	235	11	0	0	48	4605	LARAMIE RIVER
3	4602	CAMERON PASS DITCH	CACHE LA POUFRE RIVER	33	13	85	25	47	4602	MICHIGAN RIVER
3	4603	MICHIGAN DITCH	CACHE LA POUFRE RIVER	4,002	302	1,369	217	47	4603	MICHIGAN RIVER
3	4601	GRAND RIVER DITCH	CACHE LA POUFRE RIVER	17,165	132	9,451	162	51	4601	COLORADO RIVER
4	4634	ADAMS TUNNEL	BIG THOMPSON RIVER	198,586	350	250,038	324	51	4634	COLORADO RIVER
6	4655	MOFFAT TUNNEL	SOUTH PLATTE RIVER	37,521	348	32,320	365	51	4655	FRASER RIVER
7	4625	BERTHOUD PASS DITCH	CLEAR CREEK	915	71	247	36	51	4625	FRASER RIVER
7	4626	VIDLER TUNNEL	CLEAR CREEK	438	71	352	164	36	4626	MONTEZUMA CREEK
7	4682	STRAIGHT CREEK TUNNEL	CLEAR CREEK	97	146	225	365	36	4682	STRAIGHT CREEK
8	653	ROBERTS TUNNEL	SOUTH PLATTE RIVER	64,099	259	122,610	360	36	4684	BLUE RIVER
23	4611	BOREAS PASS DITCH	SOUTH PLATTE RIVER	146	57	29	71	36	4685	INDIANA CREEK
23	4612	HOOSIER PASS DITCH	ARKANSAS RIVER	7,839	148	3,400	79	36	4683	BLUE RIVER
23	4490	AURORA HOMESTAKE	SOUTH PLATTE RIVER	18,750	200	43,227	325	37	4644	HOMESTAKE CREEK

Reservoir Storage Summaries

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 1

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
1	3570	BIJOU #2	SOUTH PLATTE	0	02/28/02	2,520	11/30/01	0
1	3816	EMPIRE	SOUTH PLATTE	1,200	08/31/02	34,930	03/31/02	1,200
1	3817	JACKSON	SOUTH PLATTE	0	11/30/01	27,536	03/31/02	1,200
1	3651	RIVERSIDE	SOUTH PLATTE	7,500	08/31/02	63,113	03/31/02	7,500
1	3400	VANCIL	SOUTH PLATTE	750	10/31/02	4,194	04/30/02	750
1	3592	HORSE CREEK	HORSE CREEK	1,194	10/31/02	14,687	04/30/02	1,194
1	3609	PROSPECT	PROSPECT CREEK	1,291	10/31/02	5,630	03/31/02	1,291
1		OTHERS		2,939		3,737		2,939
1		TOTALS		14,874		156,347		16,074

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 2

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
2	3837	OASIS RES/BARR	SOUTH PLATTE	1,886	10/31/02	27,451	03/31/02	1,886
2	3351	BULL CANAL #8	CLEAR CREEK	1,264	08/31/02	3,158	04/30/02	1,927
2	3890	COAL RIDGE	LITTLE DRY CREEK	13	08/31/02	386	11/30/01	124
2	3861	GREAT WESTERN	WALNUT CREEK	258	10/31/02	1,012	11/30/01	258
2	3592	HORSE CREEK	SOUTH PLATTE	1,194	10/31/02	14,671	04/30/02	1,194
2	3902	LORD	SOUTH PLATTE	0	11/30/02	452	03/31/02	0
2	3858	LOWER LATHAM	SOUTH PLATTE	1,442	09/30/02	6,212	11/30/01	1,442
2	3876	MILTON	SOUTH PLATTE	2,908	10/31/02	24,845	11/30/01	2,908
2	3609	PROSPECT	SOUTH PLATTE	1,291	10/31/02	5,630	03/31/02	1,291
2	3375	QUINCY	SOUTH PLATTE	2,062	11/30/01	2,679	10/31/02	2,679
2	3903	STANDLEY	WOMAN CREEK	20,751	09/30/01	32,769	11/30/01	20,783
2	3700	TANI LAKES COMBINED	SOUTH PLATTE	4,110	11/30/01	7,214	04/30/02	6,927
2	3699	WEST GRAVEL LAKES COMBINED	SOUTH PLATTE	1,451	08/31/02	2,583	03/31/02	1,817
2		OTHERS		1,128		2,800		1,463
2		TOTALS		39,758		131,862		44,699

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 3

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
3	3774	FOSSIL CREEK	FOSSIL CREEK	334	09/30/02	4,518	06/30/02	572
3	3712	HALLAGAN/NORTH POUUDRE #16	N FK POUUDRE RIVER	543	09/30/02	5,187	04/30/02	877
3	3707	INDIAN CREEK/MTN SUPPLY #16	INDIAN CREEK	0	11/01/01	1,502	06/30/02	37
3	3697	NORTH POUUDRE #2/DEMMELE LAKE	N FK POUUDRE RIVER	1,736	09/30/02	2,926	04/30/02	1,856
3	3702	NORTH POUUDRE #3/HACKEL LAKE	N FK POUUDRE RIVER	1,568	08/31/02	2,634	06/30/02	1,672
3	3704	NORTH POUUDRE #4	N FK POUUDRE RIVER	596	05/31/02	1,065	06/30/02	692
3	3698	NORTH POUUDRE #5/BEE LAKE	N FK POUUDRE RIVER	2,399	08/31/02	5,812	11/01/01	2,399
3	3716	NORTH POUUDRE #15	N FK POUUDRE RIVER	0	08/31/02	2,214	02/28/02	0
3	3715	PARK CREEK	PARK CREEK	550	09/30/02	4,963	03/31/02	602
3	3730	COBB LAKE	CACHE LA POUUDRE RIVER	2,529	09/30/02	6,932	11/01/01	2,558
3	3713	SEAMAN/MILTON SEAMAN	N FK POUUDRE RIVER	2,436	03/31/02	4,283	11/30/01	3,061
3	3780	CLAYMORE	CACHE LA POUUDRE RIVER	110	08/31/02	760	04/30/02	306
3	3772	SEELEY	CACHE LA POUUDRE RIVER	431	11/01/02	1,069	02/28/02	494
3	3804	WARREN	CACHE LA POUUDRE RIVER	115	10/31/02	1,382	11/01/01	115
3	3786	WOOD	ROLLARD DRAW	567	09/30/02	1,649	03/31/02	567
3	3678	MOUNTAIN SUPPLY RESERVOIR #20	JOE WRIGHT RESERVOIR	2,940	10/31/02	5,992	07/31/02	2,940
3	3952	RAWHIDE	CACHE LA POUUDRE RIVER	13,435	11/01/01	15,355	06/30/02	15,111
3	3732	HORSETOOTH	DIXON CANYON CREEK	10,459	10/31/02	45,392	04/30/02	10,459
3	3725	DOUGLASS	CACHE LA POUUDRE RIVER	1,174	08/31/02	2,973	04/30/02	1,194
3	3727	WINDSOR RESERVOIR #8	CACHE LA POUUDRE RIVER	0	08/31/02	2,583	12/31/02	0
3	3728	NO. 8 ANNEX	CACHE LA POUUDRE RIVER	209	05/31/02	665	12/31/01	209
3	3738	WINDSOR RESERVOIR	CACHE LA POUUDRE RIVER	2,482	10/31/02	10,009	04/30/02	2,482
3	3679	CHAMBERS	JOE WRIGHT CREEK	2,050	11/01/01	6,264	06/30/02	3,996
3	3676	LONG DRAW/GRAND RIVER	LONG DRAW CREEK	762	08/31/02	6,048	06/30/02	1,163
3		SUBTOTALS		47,425		142,177		53,362

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 3 (CONTINUED)

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
		BALANCE FROM PREVIOUS PAGE		47,425		142,177		53,362
3	3744	BLACK HOLLOW	CACHE LA POUFRE RIVER	3,197	10/31/02	4,760	05/31/02	3,197
3	3735	CURTIS	CACHE LA POUFRE RIVER	335	07/31/02	554	11/01/01	335
3	3740	KLUVER	CACHE LA POUFRE RIVER	64	05/31/02	189	11/01/01	64
3	3742	LONG POND/WATER SUPPLY #5	CACHE LA POUFRE RIVER	862	08/31/02	2,656	06/30/02	916
3	3736	ROCKY RIDGE/WATER SUPPLY #1	CACHE LA POUFRE RIVER	2,383	04/30/02	3,523	05/31/02	3,163
3	3737	WATER SUPPLY #2 & #3	CACHE LA POUFRE RIVER	190	09/30/02	1,746	11/01/01	190
3	3739	WATER SUPPLY #4	WATER SUPPLY RES #2 & #3	83	09/30/02	467	06/30/02	83
3	3805	TERRY/LARIMER WELD	CACHE LA POUFRE RIVER	0	08/31/02	5,590	05/31/02	470
3	3726	WORSTER	SHEEP CREEK	149	11/01/01	637	06/30/02	622
3	3775	TIMNATH	DUCK SLOUGH	0	11/01/01	4,355	04/30/02	0
3	3770	WINDSOR LAKE	CACHE LA POUFRE RIVER	97	10/31/02	1,086	05/31/02	97
3	3683	BARNES MEADOW RESERVOIR	BARNES MEADOWS CREEK	250	10/31/02	2,334	11/01/01	250
3	3699	NORTH POUFRE RESERVOIR #6	N FK POUFRE RIVER	1,981	09/30/02	6,788	11/30/01	2,002
3	3708	MOUNTAIN SUPPLY RESERVOIR #18	BOX ELDER CREEK	84	09/30/02	773	06/30/02	470
3	3745	DOWDY LAKE RESERVOIR	SOUTH PINE CREEK	583	10/31/02	792	11/01/01	583
3	3751	SOUTH GRAY RESERVOIR	BOX ELDER CREEK	0	08/31/02	688	05/31/02	59
3	3686	COMANCHE RESERVOIR	BIG BEAVER CREEK	0	11/01/01	1,660	06/30/02	0
3	3814	PANHANDLE RESERVOIR	PANHANDLE CREEK	970	08/31/02	1,017	11/01/01	970
3		OTHERS		3,165		6,090		3,725
3		TOTALS		61,818		187,882		70,558

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 4

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
4	4156	BOULDER & LARIMER/ISH	LITTLE THOMPSON	0	07/31/02	927	11/30/01	0
4	4110	BOYD LAKE	BIG THOMPSON	6,100	10/31/02	20,542	11/30/01	6,100
4	4513	CARTER	BIG THOMPSON	41,120	11/30/01	111,738	03/31/02	51,417
4	4116	DONATH	BIG THOMPSON	276	10/31/02	1,115	04/30/02	276
4	4166	HERTHA RESERVOIR	DRY CREEK HERTHA	274	09/30/02	1,657	01/31/02	306
4	4123	HORSETOOTH RESERVOIR	BIG THOMPSON	1,601	08/31/02	6,104	11/30/01	1,601
4	4487	LAKE LOVELAND	BIG THOMPSON	7,330	10/31/02	10,411	11/30/01	7,330
4	4136	LON HAGLER	BIG THOMPSON	636	08/31/02	4,971	11/30/01	636
4	4137	LONE TREE	BIG THOMPSON	3,458	09/30/02	8,769	03/31/02	3,494
4	4133	LOVELAND LAKE	BIG THOMPSON	410	09/30/02	1,055	04/30/02	410
4	4134	BOEDECKER LAKE/MARINO	BIG THOMPSON	534	11/30/01	3,332	04/30/02	534
4	4146	WELCH LAKE	BIG THOMPSON	1,655	09/30/02	4,521	11/30/01	1,655
4		OTHERS		1,001		2,539		1,293
4		TOTALS		64,395		177,681		75,052

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 5

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
5	4020	BEAVER POND	BEAVER CREEK	320	11/30/01	964	04/30/02	320
5	4071	FOOTHILLS	ST. VRAIN	1,004	10/31/02	1,722	11/30/01	1,004
5	4037	HIGHLAND #1	ST. VRAIN	355	10/31/02	716	12/31/01	355
5	4032	HIGHLAND #2	ST. VRAIN	1,159	08/31/02	2,777	02/28/02	1,242
5	4038	HIGHLAND #3	ST. VRAIN	261	09/30/02	1,341	03/31/02	261
5	4073	MCINTOSH	ST. VRAIN	153	09/30/02	1,699	11/30/01	153
5	4063	PLEASANT VALLEY	ST. VRAIN	1,016	09/30/02	2,617	03/31/02	1,016
5	4067	OLIGARCHY RESERVOIR #1	ST. VRAIN	668	07/31/02	1,489	05/31/02	872
5	3905	UNION	ST. VRAIN	5,691	10/31/02	9,634	03/31/02	5,691
5	4076	LEFT HAND PARK	LEFT HAND CREEK	505	11/30/01	619	07/31/02	550
5	4488	LEFT HAND VALLEY	LEFT HAND CREEK	118	11/30/01	1,310	08/31/02	1,310
5	4010	BUTTON ROCK	ST. VRAIN	10,214	03/31/02	15,933	10/31/02	15,933
5	4379	NEW THOMAS	ST. VRAIN	1,630	10/31/02	2,036	03/31/02	1,630
5	4072	CLOVER BASIN RESERVOIR	ST. VRAIN	286	10/31/02	596	03/31/02	286
5	4081	LAGERMANN	LEFT HAND CREEK	718	10/31/02	939	02/28/02	718
5	4065	MCCALL RESERVOIR	ST. VRAIN	190	08/31/02	367	06/30/02	198
5		TOTALS		24,288		44,759		31,539

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 6

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
6	4172	BARKER	BOULDER CREEK	4,375	04/30/02	7,615	11/30/01	5,221
6	4173	BASELINE	BOULDER CREEK	3,165	04/30/02	3,780	06/30/02	3,245
6	4515	BOULDER	BOULDER CREEK	6,652	03/31/02	11,335	06/30/02	8,388
6	4489	GOOSE	NORTH BOULDER CREEK	1,036	11/30/01	1,036	11/30/01	1,036
6	4199	GROSS	SOUTH BOULDER CREEK	15,664	09/30/02	32,144	11/30/01	15,787
6	4178	HILLCREST	BOULDER CREEK	1,897	10/31/02	2,207	02/28/02	1,897
6	4180	LEGGETT	BOULDER CREEK	1,369	10/31/02	1,601	02/28/02	1,369
6	4212	MARSHALL	SOUTH BOULDER CREEK	2,394	10/31/02	5,482	04/30/02	2,394
6	4185	PANAMA	BOULDER CREEK	500	10/31/02	3,660	04/30/02	500
6	4238	SILVER	NORTH BOULDER CREEK	2,689	11/30/01	3,649	07/31/02	3,540
6	4187	SIX MILE	BOULDER CREEK	0	08/31/02	1,114	04/30/02	50
6	4214	MCKAY LAKE	SOUTH BOULDER CREEK	324	08/31/02	385	05/31/02	358
6	4230	VALMONT	SOUTH BOULDER CREEK	6,714	10/31/02	7,426	02/28/02	6,714
6		OTHERS		333		444		333
6		TOTALS		47,112		81,878		50,832

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 7

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
7	3324	RALSTON	RALSTON CREEK	6,353	02/28/02	10,052	08/31/02	9,987
7	4415	LONG LAKE RESERVOIR UPPER	RALSTON CREEK	955	10/31/02	1,182	11/30/01	955
7	3406	COORS B #3	CLEAR CREEK	1,360	09/30/02	2,428	06/30/02	1,576
7	3407	COORS B #4	CLEAR CREEK	3,207	10/31/02	4,000	11/30/01	3,207
7	3308	BLUNN	CLEAR CREEK	3,200	08/31/02	4,450	06/30/02	3,500
7	3702	FAIRMOUNT	CLEAR CREEK	759	04/30/02	964	07/31/02	941
7	4411	MAPLE GROVE	SOUTH CLEAR CREEK	660	08/31/02	1,020	11/30/01	801
7		OTHERS		1,195		2,225		1,159
7		TOTALS		17,689		26,321		22,126

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 8

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
8	3514	CHATFIELD	SOUTH PLATTE	21,458	11/30/01	27,372	02/28/02	25,106
8	3532	CHERRY CREEK	CHERRY CREEK	11,870	10/31/02	13,525	11/30/01	11,870
8	3832	MCLELLAN	DAD CLARK DITCH	3,939	09/30/02	5,486	03/31/02	4,086
8	3983	STRONTIA SPRINGS DVR DAM	SOUTH PLATTE	6,584	09/01/02	7,251	05/31/02	993
8		TOTALS		43,851		53,634		42,055

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 9

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
9	3815	SODA #1, #2	BEAR CREEK	454	10/31/02	1,464	03/31/03	454
9	4281	BOWLES	BEAR CREEK	1,059	09/30/02	1,848	04/30/02	1,059
9	4314	PATRICK	BEAR CREEK	1,107	06/30/02	1,156	11/30/01	1,107
9	3999	BEAR CREEK RESERVOIR	BEAR CREEK	1,572	08/31/02	1,920	12/31/01	1,729
9	3501	MARSTON	SOUTH PLATTE	10,274	09/30/02	17,518	05/31/02	11,053
9		OTHERS		1,331		2,825		1,581
9		TOTALS		15,797		26,731		16,983

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 23

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
23	3904	ANTERO	S FK SOUTH PLATTE	8	09/30/02	20,147	03/31/02	8
23	3981	JEFFERSON LAKE RESERVOIR	JEFFERSON LAKE	399	07/31/02	654	11/30/01	417
23	3965	ELEVEN MILE	MID FK SOUTH PLATTE	66,875	10/31/02	100,209	11/30/01	66,875
23	3962	MONTGOMERY	MID FK SOUTH PLATTE	644	04/30/02	4,827	12/31/01	2,961
23	4013	SPINNEY MOUNTAIN	MID FK SOUTH PLATTE	26,787	10/31/02	32,989	05/31/02	26,787
23		TOTALS		94,713		158,826		97,048

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 64

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
64	3552	PREWITT	SOUTH PLATTE	3,870	10/31/02	26,090	04/30/02	3,870
64	3551	NORTH STERLING	SOUTH PLATTE	3,500	09/30/02	71,170	03/30/02	5,170
64	3906	JULESBURG	SOUTH PLATTE	0	08/31/02	21,200	03/31/02	2,780
64		TOTALS		7,370		118,460		11,820

2001-2002 RESERVOIR STORAGE SUMMARIES BY DISTRICT

WATER DISTRICT 80

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
				MINIMUM		MAXIMUM		END OF YEAR
				AF	DATE	AF	DATE	
80	3550	CHEESMAN	S FK SOUTH PLATTE	28,126	07/31/02	59,209	03/31/02	32,707
80	3829	WELLINGTON	N FK SOUTH PLATTE	2705	10/31/02	3896	05/31/02	2705
80	3828	ALTURA RESERVOIR	GENEVA CREEK	0	11/30/01	144	05/02/31	0
80		TOTAL		30,831		63,249		35,412

Water Diversion Summaries

WD	DITCHES REPORTING			OTHERS		ESTIMATED NUMBER OF STRUCTURE VISITS	TOTAL DIVERIONS (AF)	TOTAL DIVERIONS TO STORAGE	TO IRRIGATION		
	WITH RECORD	NO WATER AVAIL.	NO WATER TAKEN	NO INFO AVAIL.	NO RECORDS				TOTAL DIVERIONS (AF)	NO. OF ACRES IRRIGATED	AVG AF PER ACRE
1	387	27	119	143	5,053	3,313	585,971	260,302	221,775	210,000	1.06
2	313	22	170	13	4,388	1,545	433,746	62,019	309,475	180,000	1.72
3	209	17	48	19	2,813	1,446	481,631	232,873	294,818	180,000	1.64
4	125	16	42	16	1,251	1,671	243,516	133,358	71,085	100,000	0.71
5	142	6	21	20	1,202	1,719	92,278	6,864	59,909	40,000	1.50
6	175	30	60	32	1,684	3,537	195,321	48,676	50,417	35,000	1.44
7	128	0	115	6	1,726	2,044	108,072	4,610	21,123	14,000	1.51
8	736	51	204	213	6,359	840	439,293	121,972	13,543	18,000	0.75
9	117	3	6	3	1,540	1,162	10,384	3,515	4,139	1,700	2.43
23	226	84	116	12	1,718	732	84,404	75,731	738	9,565	0.08
48	57	7	16	0	69	2,132	21,686	0	21,686	5,000	4.34
49	9	0	20	0	29	415	3,186	0	3,186	1,500	2.12
64	253	6	30	15	1,734	3,071	280,474	10,963	231,887	190,000	1.22
65	14	0	22	3	83		14,136	0	12,308	4,700	2.62
76	0	0	0	0	0		0	0	0	350	0.00
80	165	60	34	7	882		68,684	65,645	2,922	4,000	0.73
TOT	3,056	329	1,023	502	30,531	23,627	3,062,782	1,026,528	1,319,011	993,815	1.33

DISTRICT 9 DITCH VISITS COMBINED WITH DISTRICT 80
DISTRICT 48 DITCH VISITS COMBINED WITH DISTRICT 76
DISTRICTS 49 AND 65 DITCH VISITS COMBINED WITH DISTRICT 64

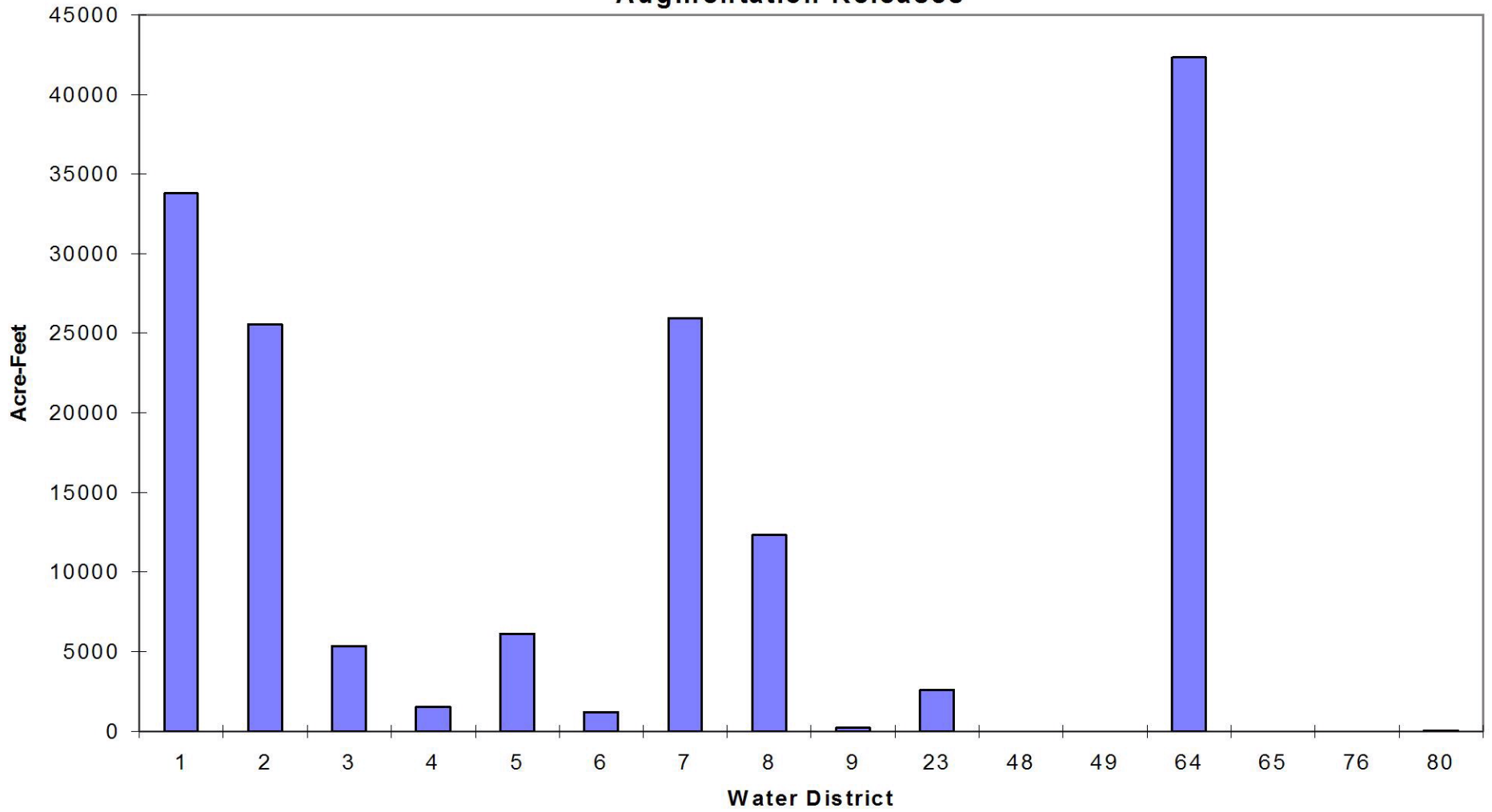
WATER DIVERSION SUMMARIES TO VARIOUS USE 2001-2002

WD	TRANS-MOUNTAIN OUTFLOW	TRANS-BASIN OUTFLOW	MUNICIPAL	COMMERCIAL	INDUSTRIAL	RECREATION	FISHERY	DOMESTIC & HOUSEHOLD	STOCK
1	0	0	14	0	5,754	0	0	16	59
2	0	75	75,381	573	10,488	0	0	1	7
3	0	0	71,922	0	5,735	0	0	35	0
4	0	0	38,655	41	0	0	0	0	0
5	0	0	24,812	11	0	0	0	16	0
6	0	3,022	90,302	44	903	0	0	0	0
7	0	23,893	7,656	0	32,041	0	0	0	316
8	0	0	299,047	1,151	3,423	0	2,170	24	0
9	0	0	2,961	26	77	0	0	0	0
23	4,446	0	366	0	612	3,620	0	2	60
48	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0
64	0	0	4,437	48	0	0	1,482	0	42
65	0	0	0	0	0	0	1,828	0	0
76	0	0	0	0	0	0	0	0	0
80	0	0	113	3	0	0	0	0	0
TOT	4,446	26,990	615,666	1,897	59,033	3,620	5,480	94	484

WD	AUGMENTATION	EVAPORATION	GEOHERMAL	SNOWMAKING	MINIMUM STREAMFLOW	POWER GENERATION	WILDLIFE	RECHARGE	OTHER
1	33,782	0	0	0	0	0	0	38,767	0
2	25,573	32	0	0	0	0	0	2,746	0
3	5,345	5,845	0	0	0	0	0	0	0
4	1,516	0	0	0	0	1,031,690	0	0	0
5	6,119	0	0	0	720	0	0	0	0
6	1,217	0	0	0	8,270	3,368	0	0	0
7	25,956	286	0	88	0	0	0	1,097	0
8	12,335	3,824	0	0	0	0	0	0	0
9	221	14	0	0	0	0	0	0	0
23	2,590	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0
64	42,327	0	0	0	0	0	0	17,527	0
65	0	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0	0
80	53	0	0	0	0	0	0	0	0
TOT	157,034	10,001	0	88	8,990	1,035,058	0	60,137	0

Augmentation Releases Graph

**DIVISION 1
2002
Augmentation Releases**



Water Court Activities
Calendar Year 2002

New Applications made to water court this year.....	401
Consultations with Referee this year.....	401
Decrees Issued by Court this year.....	303
Dismissals.....	9
Vacated.....	2

TYPES OF RULINGS

TYPE OF RULING	NUMBER OF CASES	NUMBER OF STRUCTURES
Findings of Diligence on Conditional Rights	34	85
Exchanges Adjudicated	5	9
Conditional Rights Made Absolute	7	13
Surface Water Rights Adjudicated	9	22
Underground Water Rights Adjudicated	169	642
Water Storage Rights Adjudicated	10	36
Plans for Augmentation Adjudicated	28	512
Changes of Water Rights Adjudicated	33	122
Instream Flow Rights Adjudicated	6	6
Abandoned Water Rights	2	2

Water Call Record

Date Call	Date Call						
Initiated	Released	Structure Name	Appropriation	Administration	District	Person	Districts
2001-2002	2001-2002		Date	Number		Placing Call	Affected
09/30/01	02/12/02	Barr Lake	01/13/1909	21562.00000	2	Bob Stahl	2,8,9
02/11/02	04/04/02	Denver Intake	09/01/1892	15585.00000	8	Denver	8,80,23
04/01/02	04/04/02	Cheesman	06/27/1889	14423.00000	80	Denver	80,23
04/04/02	04/10/02	Burlington Direct	11/20/1885	13108.00000	2	Bob Stahl	8,9,80,23
04/10/02	04/11/02	Burlington Bypass to Farmers Independent	11/20/1885	13108.00000	2	Bob Stahl	7,8,9,80,23
04/11/02	04/12/02	Brantner Bypass to Jay Thomas	01/15/1881	11338.00000	2	Bob Stahl	7,8,9,80,23
04/12/02	04/13/02	Fulton Bypass Jay Thomas	07/08/1876	9686.00000	2	Bob Stahl	7,8,9,80,23
04/13/02	04/15/02	Brantner Bypass to Jay Thomas	07/01/1872	8218.00000	2	Bob Stahl	7,8,9,80,23
04/15/02	04/25/02	Evans #2 Bypass to Jay Thomas	10/05/1871	7948.00000	2	Bob Stahl	7,8,9,80,23
04/18/02	04/22/02	Farmers Ditch	07/11/1895	16628.00000	64	Jim Hanrahan	1,2,3,4,5,6
04/22/02	04/24/02	Springdale	07/19/1886	13349.00000	64	Jim Hanrahan	1,2,3,4,5,6
04/23/02	05/13/02	Union Bypass to Section 3	11/05/1874	9075.00000	2	Bob Stahl	2,4,5,6
04/24/02	05/13/02	Lower Latham	12/12/1874	9112.00000	2	Bob Stahl	2
04/24/02	04/25/02	South Platte Ditch	04/21/1883	12164.00000	64	Jim Hanrahan	64,1,2,3
04/25/02	05/09/02	Western	08/10/1871	7892.00000	2	Bob Stahl	2,7,8,9,80,23
04/25/02	04/29/02	Pawnee Bypass to Sterling #1	06/22/1882	11861.00000	64	Jim Hanrahan	64,1,2,3
04/29/02	05/07/02	Lower Platte & Beaver Bypass to Sterling #1	09/04/1882	11935.00000	1	Brent Schantz	64,1,2,3
05/02/02	05/13/02	Bijou	04/26/1882	11804.00000	1	Brent Schantz	1,2,3
05/07/02	05/17/02	Pawnee Bypass to Sterling #1	06/22/1882	11861.00000	64	Jim Hanrahan	64,1,2,3
05/09/02	05/10/02	Platteville Bypass to Jay Thomas	01/01/1871	7671.00000	2	Bob Stahl	2,7,8,9,80,23
05/10/02	05/12/02	Western Bypass to Jay Thomas	05/05/1866	5969.00000	2	Bob Stahl	2,7,8,9,80,23
05/10/02	05/13/02	Last Chance	12/30/1863	5112.00000	8	John Lochhead	8,80,23
05/12/02	05/17/02	Western Bypass to Jay Thomas	08/10/1871	7892.00000	2	Bob Stahl	2,7,8,9
05/13/02	05/14/02	Denver Intake	05/01/1866	5965.00000	8	Denver	8,80,23
05/14/02	05/14/02	Lower Latham	11/14/1877	10180.00000	2	Bob Stahl	2,4,5,6
05/17/02	05/22/02	Lower Platte & Beaver Bypass to Sterling #1	09/04/1882	11935.00000	1	Brent Schantz	64,1,2,3,4,5,6
05/17/02	05/20/02	Brantner Bypass to Jay Thomas	07/01/1872	8218.00000	2	Bob Stahl	2,7,8,9,23,80
05/20/02	05/24/02	Evans #2 Bypass to Jay Thomas	10/05/1871	7948.00000	2	Bob Stahl	2,7,8,9,23,80
05/22/02	05/23/02	Lowline	10/14/1882	11975.00000	64	Jim Hanrahan	64,1,2,3,4,5,6

CALL RECORD 2001-2002 (CONTINUED)

Date Call	Date Call						
Initiated	Released	Structure Name	Appropriation	Administration	District	Person	Districts
2001-2002	2001-2002		Date	Number		Placing Call	Affected
05/23/02	05/24/02	Lower Platte & Beaver Bypass to Sterling #1	09/04/1882	11935.00000	1	Brent Schantz	64,1,2,3,4,5,6
05/24/02	05/25/02	Lowline	10/14/1882	11975.00000	64	Jim Hanrahan	64,1,2,3,4,5,6,7,8,9,80,23
05/24/02	05/25/02	Cincinatti Ditch at Michigan Creek Gage	06/20/1879	10763.00000	23	Mike Eytel	23
05/26/02	06/06/02	Harmony #1	04/28/1895	16554.00000	64	Jim Hanrahan	64,1,2,3,4,5,6,7
05/25/02	05/30/02	Burlington	11/20/1885	13108.00000	2	Shera Sumerford	2,8,9
05/25/02	05/26/02	Denver Intake	05/20/1885	12924.00000	8	Denver	8,23,80
05/28/02	05/30/02	Denver Intake	12/31/1874	9131.00000	8	Denver	8,23,80
05/30/02	05/31/02	Denver Intake	12/20/1870	7659.00000	8	Denver	8,23,80
05/30/02	06/04/02	Ft. Morgan Bypass to Lowline	10/18/1882	11979.00000	1	Brent Schantz	1,2,3,4,5,6,7
05/31/02	06/01/02	Denver Intake	09/10/1878	10480.00000	8	Denver	8,23,80
06/01/02	06/04/02	Evans #2 Bypass to Jay Thomas	10/05/1871	7948.00000	2	Shera Sumerford	2,7,8,9,23,80
06/04/02	06/09/02	Burlington	11/20/1885	13108.00000	2	Bob Stahl	8,9,80,23
06/06/02	06/10/02	District 1 Reservoir Refill (Prewitt)	12/31/1929	31423.29219	1	Brent Schantz	1,2,3,4,5,6,7
06/09/02	08/11/02	Fulton Bypass to Jay Thomas	07/08/1876	9686.00000	2	Bob Stahl	2,7,8,9,80,23
06/10/02	10/25/02	Harmony #1	04/28/1895	16554.00000	64	Jim Hanrahan	64,1,2,3,4,5,6
06/11/02	06/12/02	Brantner Bypass to Jay Thomas	07/01/1872	8218.00000	2	Bob Stahl	2,7,8,9,80,23
06/12/02	06/14/02	Evans #2 Bypass to Jay Thomas	10/05/1871	7948.00000	2	Bob Stahl	2,7,8,9,23,80
06/14/02	06/29/02	Western to Jay Thomas	08/10/1871	7892.00000	2	Bob Stahl	2,7,8,9,23,80
06/14/02	06/19/02	Ft. Morgan Bypass to Upper Platte & Beaver	10/18/1882	11979.00000	1	Brent Schantz	1,2,3,4,5,6
06/17/02	06/19/02	South Platte Bypass to Sterling #1	04/21/1883	12164.00000	64	Jim Hanrahan	1,64
06/17/02	06/20/02	Denver Intake	12/30/1864	5478.00000	8	Denver	8,80,23
06/19/02	06/24/02	Pawnee Bypass to Sterling #1	06/22/1882	11861.00000	64	Jim Hanrahan	64,1,2,3,4,5,6
06/24/02	06/27/02	Upper Platte & Beaver Bypass to Sterling #1	06/20/1882	11859.00000	1	Brent Schantz	64,1,2,3,4,5,6
06/27/02	07/01/02	Pawnee Bypass to Sterling #1	06/22/1882	11861.00000	64	Jim Hanrahan	64,1,2,3,4,5,6
06/27/02	07/03	Western Bypass to Jay Thomas	05/05/1866	5969.00000	2	Bob Stahl	2,7,8,9,80,23
06/29/02	07/01/02	Bijou Bypass to Weldon Valley	04/26/1882	11804.00000	1	Brent Schantz	1,2,3,4,5,6
07/01/02	07/02/02	Upper Platte & Beaver Bypass to Sterling #1	06/20/1882	11859.00000	1	Brent Schantz	1,2,3,4,5,6

CALL RECORD 2001-2002 (CONTINUED)

Date Call	Date Call						
Initiated	Released	Structure Name	Appropriation	Administration	District	Person	Districts
2001-2002	2001-2002		Date	Number		Placing Call	Affected
07/01/02	07/04/02	Weldon Valley	10/26/1881	11622.00000	1	Brent Schantz	1
07/03/02	07/06/02	Meadow Island #2 Bypass to Jay Thomas	05/03/1866	5967.00000	2	Bob Stahl	2,7,8,9,80,23
07/04/02	07/04/02	Bijou Bypass to Weldon Valley	04/26/1882	11804.00000	1	Brent Schantz	2,3,4,5,6
07/06/02	07/07/02	Western Bypass to Jay Thomas	08/10/1871	7892.00000	2	Bob Stahl	2,7,8,9,80,23
07/07/02	07/09/02	Ft. Morgan Bypass to Sterling #1	10/18/1882	11979.00000	1	Brent Schantz	2,3,4,5,6,7,8,9,23,80
07/08/02	07/09/02	Western	08/10/1871	7892.00000	2	Bob Stahl	2,7,8,9,80,23
07/09/02	07/16/02	Pawnee Bypass to Sterling #1	06/22/1882	11861.00000	64	Jim Hanrahan	64,1,2,3,4,5,6
07/09/02	07/11/02	Western	05/05/1866	5969.00000	2	Bob Stahl	2,7,8,9,80,23
07/12/02	07/15/02	Western	08/10/1871	7892.00000	2	Bob Stahl	2,7,8,9,80,23
07/15/02	08/15/02	Weldon Valley	10/26/1881	11622.00000	1	Brent Schantz	1,2,3,4,5,6
07/15/02	07/16/02	Western	05/05/1866	5969.00000	2	Bob Stahl	2,7,8,9,80,23
07/16/02	08/15/02	Upper Platte & Beaver Bypass to Sterling #1	06/20/1882	11859.00000	1	Brent Schantz	64,1
07/16/02	07/22/02	Meadow Island #2 Bypass to Farmers Ind.	05/03/1866	5967.00000	2	Bob Stahl	2,7,8,9,80,23
07/18/02	07/22/02	Last Chance	12/30/1863	5112.00000	8	John Lochhead	8,80,23
07/22/02	08/03/02	Meadow Island #1 Bypass to Farmers Ind.	05/01/1866	5965.00000	2	Bob Stahl	2,7,8,9,23,80
08/03/02	08/06/02	Farmers Independent	11/20/1865	5803.00000	2	Bob Stahl	2,7,8,9,80,23
08/06/02	08/08/02	Meadow Island #2 Bypass to Farmers Ind.	05/03/1866	5967.00000	2	Bob Stahl	2,7,8,9,80,23
08/08/02	08/12/02	Meadow Island #1 Bypass to Farmers Ind.	05/01/1866	5965.00000	2	Bob Stahl	2,7,8,9,80,23
08/12/02	08/26/02	Farmers Independent	11/20/1865	5803.00000	2	Bob Stahl	2,7,8,9,80,23
08/15/02	08/26/02	Weldon Valley Bypass to Sterling #1	10/26/1881	11622.00000	64	Jim Hanrahan	64,1,2,3,4,5,6
08/22/02	09/10/02	Peterson	03/01/1895	17846.16496	64	Jim Hanrahan	64
08/26/02	09/14/02	Pawnee Bypass to Sterling #1	06/22/1882	11861.00000	64	Jim Hanrahan	64,1,2,3,4,5,6,7,8,9,23,80
08/26/02	09/13/02	Weldon Valley	10/26/1881	11622.00000	1	Brent Schantz	1,2,3,4,5,6
08/26/02	08/30/02	Meadow Island #1 Bypass to Jay Thomas	05/01/1866	5965.00000	2	Bob Stahl	2,7,8,9,80,23
08/30/02	08/31/02	Evans #2 Bypass to Jay Thomas	10/05/1871	7948.00000	2	Bob Stahl	2,7,8,9,80,23
08/31/02	09/05/02	Meadow Island #2 Bypass to Jay Thomas	05/03/1866	5967.00000	2	Bob Stahl	2,7,8,9,80,23
09/05/02	09/10/02	Meadow Island #1 Bypass to Jay Thomas	05/01/1866	5965.00000	2	Bob Stahl	2,7,8,9,80,23
09/10/02	09/11/02	Meadow Island #2 Bypass to Jay Thomas	05/03/1866	5967.00000	2	Bob Stahl	2,7,8,9,80,23
09/11/02	09/12/02	Western Bypass to Jay Thomas	05/05/1866	5969.00000	2	Bob Stahl	2,7,8,9,80,23

Staffing

Dam Safety Engineers	4
Water Resource Engineers	7
Engineering/Physical Science Techs (Includes 3 Hydrographers)	3
Program/Administrative Assistants	2
Full-Time Water Commissioners	14
Permanent Part-Time Water Commissioners	8
TOTAL STAFF	38

Statistics

Decreed Surface Rights	19,738
Number of Plans for Augmentation	683
Number of Dams	745
Number of Contacts to give Public Assistance	51,590+

Organizational Flow Chart

Division 1

