

RECOMMENDATIONS FOR 2001

SPECIAL WATER COMMITTEE

**Report to the
Colorado General Assembly**

**Research Publication No. 482
December 2000**

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December 2000

To Members of the Sixty-second General Assembly:

Submitted herewith is the final report of the Special Water Committee. This committee was created pursuant to Section 37-90-137.5, Colorado Revised Statutes. The purpose of the committee is to oversee the management of the South Platte River Basin and the Denver Basin Aquifers.

At its meeting on October 16, 2000, the Legislative Council reviewed the report of this committee. A motion to forward this report and the bills therein for consideration in the 2001 session was approved.

Respectfully submitted,

/s/Representative Doug Dean
Chairman
Legislative Council

DD/DB/mm

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SPECIAL WATER COMMITTEE

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EXECUTIVE SUMMARY

Committee Charge

Pursuant to Section 37-90-137.5, C.R.S., the Special Water Committee was established in 1996 to investigate Denver Basin ground water management and South Platte River Basin issues. The committee is charged with:

- defining the scope of a technical study of the river basin and the Denver Basin aquifers by the State Engineer and the Director of the Colorado Water Conservation Board (completed in 1996);
- reviewing the implementation of the technical study's recommendations;
- investigating the potential impacts to water rights and water management issues associated with the use of the Denver Basin Aquifer and the South Platte River;
- overseeing Colorado's participation in the cooperative agreement to protect endangered species in Nebraska; and
- recommending legislation.

Committee Activities

Activities through 1999. In 1996, the committee defined the scope of the Denver Basin and South Platte River Technical Study. This study was conducted in 1996 and 1997 to help the General Assembly determine whether current law protects water rights in the South Platte River Basin and helps ensure a stable, long-term water supply. Following the release of the technical study in 1997, the committee reviewed the study's recommendations and adopted a draft bill (House Bill 99-1222) to continue the committee until July 1, 2001, delay water replacement requirements for certain Denver Basin Aquifer wells, and fund additional studies of the South Platte River and the Denver Basin Aquifer. Funding for the studies was removed prior to the bill's enactment.

As recommended by the 1997 technical study, the committee also supported the implementation of the Three State Cooperative Agreement for the Recovery of Endangered Species in Nebraska (Three State Agreement). Specifically, the committee drafted a letter to Governor Owens in 1999 expressing its support for Colorado's efforts to negotiate a recovery program that is favorable to the state. The letter also expressed concern about the recovery program's escalating costs. This letter was used by Colorado during its negotiations with the federal government and the other states. The committee also toured the South Platte River Basin in 1997 and 1999 and received briefings on other issues affecting water users in the South Platte Basin including forest management and water flows in the South Platte River.

2000 committee activities. The committee met twice during the 2000 legislative session and twice during the legislative interim to receive testimony from the public and executive branch agencies and to consider legislation. Specifically, the Colorado Department of Natural Resources and the Commissioner of Agriculture described the implementation of the Three State Agreement and explained that the agreement is scheduled to expire December 2000. Based on this testimony, the committee drafted a letter to Governor Owens endorsing a two-year extension of the cooperative agreement. Testimony from the State Engineer's Office described water flows and water shortages in Colorado's rivers and the development of the South Platte River Decision Support System. According to the State Engineer, this system will better enable his office to protect water rights and promote more efficient use of the river.

Staff from the Colorado Water Conservation Board described a study of water management and storage alternatives in the Lower South Platte Basin including the Tamarac Project that provides water for the Nebraska species recovery program. The committee also heard testimony from the State Forester and the United States Forest Service concerning forest management and the protection of watersheds from catastrophic fires. Finally, the committee considered legislation that will continue the Special Water Committee until July 1, 2003 and delay more stringent water replacement requirements for certain wells in the Denver Basin Aquifer.

Committee Recommendation

Based on the results of the technical study of the Denver Basin Aquifer and the South Platte River Basin and public testimony, the committee recommends the following bill.

Bill A — Concerning extension of the Special Water Committee. This bill extends the repeal date of the Special Water Committee from July 1, 2001, to July 1, 2003. The bill delays until July 1, 2003, the effective date for temporary water replacement requirements for post-pumping depletions caused by not nontributary ground water wells in the Denver Basin Aquifer. Not nontributary ground water is more connected to surface streams than nontributary ground water. Replacement water protects river water rights from ground water pumping impacts. Depletion is the amount of water that does not return to a stream after it is used due to evaporation, plant uptake, and other mechanisms. Post-pumping depletion occurs after pumping stops. Depending upon geology and the distance between a well and river, post-pumping depletion can impact a river years after pumping ceases. Currently, post-pumping depletions are not required to be replaced until after July 1, 2001.

COMMITTEE ACTIVITIES

Defining the Scope of the Technical Study

Define scope of the Denver Basin and South Platte River Basin Technical Study. In 1996, the committee approved the scope of a technical study to be conducted by the State Engineer and the Director of the Colorado Water Conservation Board. It was completed in April 1997 and includes:

- an inventory of surface and ground water resources in the South Platte River Basin;
- an assessment of long-term impacts on water rights from the use of ground water in the Denver Basin aquifers;
- an examination of programs to protect endangered species on the Platte River; and
- six recommendations concerning the use of water from the South Platte River and the Denver Basin Aquifer.

Findings of the Technical Study

Increasing flows in the South Platte River. The technical study was conducted to determine whether well pumping and other activities are impacting flows in the South Platte River. The study determined that annual stream flows in the South Platte River have steadily increased due to impervious surface runoff and return flows from transbasin diversions and Denver Basin aquifer wells. Impervious surfaces include roads, parking lots, and buildings. Return flow is the remaining amount of water that flows into a river after it has been used. The report notes that changes in water management policies allowed under current law could affect this trend. For example, municipalities may reduce return flows by increasing the reuse of water from another basin, called transbasin water. As part of the study, an illustrative tool was developed to assist water providers with water management decisions such as whether to increase water reuse.

Estimated life of the Denver Basin aquifers. The technical study was also conducted to determine the economic life of the Denver Basin's five aquifers. The economic life of the aquifers end when pumping become cost prohibitive, even though water may remain in the aquifers. The study determined that the Denver Basin aquifers contain a 1,000-year supply at the current rate of withdrawal. Under current law, annual pumping rates must not exceed 1 percent of the total volume of water in the Denver Basin aquifers to ensure that the aquifer remains productive for at least one hundred years. The study determined that the pumping rate for the Denver Basin aquifers in 1996 of 60,000 acre-feet was less than 2 percent of the annual allowable pumping rate of 3,000,000 acre-feet. By 2100, the annual pumping rate is projected to increase to approximately 10 percent of the annual allowable pumping rate. However, the report cautioned that the life of the aquifers could change significantly if

population and water use change. The life-span of wells throughout the basin may differ depending on a well's location. Already, some wells located on the shallow edges of the Denver Basin aquifers have begun to lose pressure or run dry.

Assessment of the impact from pumping of the Denver Basin aquifers on surface water rights. The technical study was conducted, in part, to address the concerns of some river water users that they are being impacted by Denver Basin aquifer wells. For example, pumping may prevent ground water from reaching the river or it may cause river water to seep into the aquifers. The report concludes that ground water pumping from the Denver Basin aquifers does not appear to impact South Platte River water users. As evidence, it cites the increased flow in the South Platte River caused by return flows from water pumped from the Denver Basin aquifers. Impacts on surface streams from the pumping of the aquifers may also be delayed by the geology separating surface streams and the Denver Basin aquifers. The report concludes that changes to the statutes pertaining to the Denver Basin aquifers and impacts on river water users are not necessary at this time. However, it cautioned that better information, including a more thorough understanding of potential causes of injury to South Platte River users, is needed to determine whether these users will continue to be protected.

Implementation of the Technical Study's Recommendations

Overview. The Special Water Committee is charged with overseeing the implementation of the technical study's six recommendations pertaining to the use of water from the South Platte River and the Denver Basin aquifers. To date, the committee has recommended one bill to extend the committee until July 1, 2001, delay water replacement requirements for wells in the Denver Basin Aquifer, and fund additional technical studies. The committee also drafted two letters of support for the state's efforts to protect endangered species along the Platte River in Nebraska.

Implement the South Platte River Decision Support System (SPRDSS). Recommendation one concerns the development of the SPRDSS and recommendation two concerns additional hydrological studies of the South Platte River and Denver Basin aquifers. According to the State Engineer, the South Platte River is the most difficult river in the state to administer due to its large number of river and tributary ground water users, interstate water delivery obligations, and the introduction of water from the Denver Basin aquifers and transbasin diversions. The technical studies and the SPRDSS will better enable the State Engineer to administer water rights in the South Platte River, determine water development opportunities, and determine the impact of ground water pumping from the Denver Basin aquifers on water rights in the South Platte River. A similar system has been developed for the Colorado River Basin and is being developed for the Rio Grand River Basin. The State Engineer anticipates submitting a request to the General Assembly to fund the implementation of the SPRDSS in 2002.

Urban runoff as a replacement for ground water pumping impacts. Recommendation three of the technical study concerns the use of urban runoff as a replacement for depletions caused by ground water pumping from the Denver Basin aquifers. Urban runoff occurs when rain or snow falls on an impervious surface such as a road or building and makes its way to a stream. According to current law, urban runoff is part of the stream and allocated according to priority. The State Engineer said that water users are not actively seeking to change the law nor is he preparing any recommendations.

Implement the Three State Agreement. Recommendation four of the technical report pertains to the implementation of the Three State Agreement for the Recovery of Endangered Species on the Platte River. This agreement was signed on July 1, 1997, by the Governors of Colorado, Wyoming and Nebraska, and the Secretary of the Interior to protect the habitat of the endangered whooping cranes, piping plovers, and least terns in Nebraska. According to the 1997 agreement, the United States Fish and Wildlife Service (USFWS) will conduct an environmental impact statement (EIS) of the proposed recovery program as required by the National Environmental Policy Act (NEPA). Based on this assessment, the three states and the federal government will negotiate a long-term program to protect the endangered species.

In 1998, the Interim Committee on Water and Land Resource Issues recommended HB 98-1006 concerning the Species Conservation Trust Fund. This bill became law and funds programs to conserve native species that are threatened or endangered or at risk of becoming threatened or endangered. Part of this fund pays for Colorado's contribution towards the Three State Agreement's recovery program. In 2000, the General Assembly approved HB 00-1419 that provides the Colorado Water Conservation Board with a \$140,000 appropriation to conduct the South Platte River Sustainability Study. This study will examine water management and storage alternatives in the Lower South Platte Basin including the Tamarac Project that provides water for the Nebraska species recovery program.

In 1999, the Special Water Committee drafted a letter to Governor Owens expressing its support for Colorado's efforts to negotiate a species recovery program that is favorable to the state (see attachment A). The letter also expressed concern about the recovery program's escalating costs. This letter was used by Colorado during its negotiations with the federal government and the other states. In 2000, the committee drafted another letter to Governor Owens expressing its support for a two year extension of the Three State Agreement until December 31, 2002 (see attachment B). This extension will provide additional time for the USFWS to complete the EIS and allow the signatories to address new issues of concern and negotiate a long-term recovery program.

Augmentation requirements for post-pumping depletions. Recommendation five pertains to the extension of the effective and repeal dates for augmentation requirements in Section 37-90-137 (9), C.R.S. Specifically, these requirements pertain to the replacement of post-pumping depletions caused by the use of not nontributary ground water in the Denver Basin aquifers. Replacement water protects surface water rights from ground water pumping

impacts. Currently, users of the Denver Basin aquifers are not required to replace post-pumping depletions until after July 1, 2001.

Committee recommendations. Bill A continues the Special Water Committee for two more years and extends the effective and repeal dates for the replacement requirements for out-of-priority, post-pumping depletions caused by not nontributary ground water wells.

De minimis standard for small wells. Recommendation six pertains to a *de minimis* standard for the pumping of not nontributary ground water by small capacity wells. A *de minimis* standard is the level below which a well's depletion is acceptably small. If it is at or below the *de minimis* standard, a well's depletion would not be required to be replaced. The State Engineer did not recommend a *de minimis* standard due to disagreement among water users. Specifically, some users believe that a *de minimis* standard should apply to all small wells in the state and others do not want a *de minimis* standard, even if it only applies to not nontributary wells in the Denver Basin Aquifer.

Other Committee Activities

Forest management and the protection of watersheds. Eighty percent of the water used by the 1.5 million Denver metropolitan residents comes from the Upper South Platte River's watershed including the transbasin diversions from the west slope. Testimony described the watershed's vulnerability to wildfires such as with the 1996 Buffalo Creek fire. This fire burned 11,900 acres of the watershed. Post fire floods claimed two lives and deposited 13 years worth of sediments into Denver Water Department's Strontia Springs Reservoir. The total cost of the fire and subsequent floods was \$25 million or approximately \$2,100 per acre.

In response to the threat from fire and flood, the U.S. Forest Service formed a partnership with the Colorado State Forest, Colorado State University, Denver Water Board, and other local interests, called the Upper South Platte Project. The goal of the project is to reduce the threat from fire and flood on 120,000 acres of the Upper South Platte watershed's most vulnerable lands. Specifically, the project will mechanically harvest approximately 2,000 acres per-year and treat another 2,000 acres per year with controlled burns. To help reduce the cost of treating the forest, the project is seeking to develop a market for the small-diameter wood that will be harvested.

Update on low river flows. The Division of Water Resources testified that this year's below average snowfalls, above average summer temperatures, and less than average spring and summer rains, caused a significant water shortage in the South Platte and other Colorado rivers. The shortage has impacted irrigators, water-based recreation, and some small residential water providers. It also increased the division's operating costs because its staff traveled more miles and worked longer days to administer the limited water supply. The impact of this year's water shortage was lessened because water storage projects were able to release water stored during recent wet years. However, the division cautioned that another year of significantly below average precipitation may deplete remaining reserves.

Colorado River Issues. The Colorado River Basin is particularly important to the South Platte River Basin. Specifically, the South Platte River receives large amounts of transbasin water from the west slope, including the Colorado-Big Thompson project that diverts over 200,000 acre-feet annually. The Colorado River Basin also contains essentially all of the state's unappropriated water.

The Executive Director of the Colorado Department of Natural Resources described the recent agreement between Colorado and the other Colorado River Compact states concerning California's use of surplus Colorado River water. This surplus comes from Colorado and other Upper Colorado Basin states that are not using their full compact entitlement. When the Upper Basin states eventually use their full compact entitlement, the agreement may help the states avoid a costly dispute with California that has grown reliant on the surplus flows. The new agreement allows California to continue using the surplus water from the Upper Basin provided that California reduce its consumption by 2015 to its annual compact entitlement of 4.4 million acre-feet. As part of the agreement, California has published a plan in the Federal Register that specifies the state's method for reducing its reliance on the surplus water called the "4.4 plan." According to the plan, California will reduce its use through the quantification of in-state water rights, water exchange projects, and water conservation programs, such as lining irrigation ditches and increasing the use of more efficient drip irrigation.

The Upper Colorado River Basin also provides habitat for four federally listed endangered species: the bony tailed chub, humpback chub, razor back sucker, and pike minnow. Until these species are recovered and delisted, the director explained that the United States Fish and Wildlife Service (USFWS) will continue to exercise significant control over the use of the Colorado River. In 1985, the Governors of Colorado, Wyoming, and Utah, and the USFWS signed an agreement to recover the four endangered fish in the Upper Colorado River Basin. This program expires in 2000 unless the parties reauthorize it. The DNR director explained that the agreement's expiration provides Colorado with an opportunity to renegotiate portions of the recovery program. Specifically, Colorado's negotiators are working to include recovery goals in the new agreement that specify the number of fish for each reach of the Upper Colorado River. However, the USFWS is insisting that the goals be based on instream flows and dam operation criteria rather than specific numbers of fishes.

SUMMARY OF RECOMMENDATIONS

As a result of the committee's activities, the following bill is recommended to the Colorado General Assembly.

Bill A — Concerning Extension of the Special Water Committee

Several issues remain to be resolved that have been the focus of the committee since its inception in 1996. Specifically, the State Engineer continues to develop the South Platte River Decision Support System to help determine whether the current water replacement requirements offer long-term protection for stream water rights. Also, the federal government has not completed its environmental impact assessment of the Three State Agreement to protect endangered species on the Platte River. Until this assessment is complete, Colorado and the other states do not know if the program provides sufficient protection to the endangered species. Without federal approval of the agreement, the state's water users continue to face the threat of greater federal control over the use of the South Platte River. To address these on-going issues, Bill A extends the repeal date for the Special Water Committee until July 1, 2003, and delays the effective and repeal date for the replacement of out-of-priority, post pumping depletions for not nontributary ground water wells in the Denver Basin aquifers.

RESOURCE MATERIALS

The resource materials listed below were provided to the committee or developed by Legislative Council staff during the course of the meetings. The summaries of meetings and attachments are available at the Division of Archives, 1313 Sherman Street, Denver. For a limited time, the meeting summaries and materials developed by Legislative Council Staff are available on our web site at:

www.state.co.us/gov_dir/leg_dir/lcsstaff/2000/00interim.

Meeting Summaries	Topics Discussed
September 20, 2000	Briefing on South Platte River Basin and Denver Basin Aquifer issues and consideration of proposed legislation
August 10, 2000	Updates on the implementation of the technical study's recommendations, South Platte River Sustainability Study, and Upper South Platte Project
April 5, 2000	Endangered species recovery programs affecting Colorado's rivers
February 16, 2000	Updates on the Three State Agreement and implementation of the South Platte River Decision Support System
November 3, 1999	Federal by-pass flows, forest management and water yields, Upper South Platte Project, and federal wild and scenic designation of the South Platte River
October 12, 1999	Conjunctive use of surface and ground water, updates on water shortages and the Three State Agreement
September 15, 1999	Review of the 1998 Technical Study report, overview of Colorado water law, summary of the Metropolitan Water Supply Investigation, update on the implementation of the Technical Study's recommendations
September 5, 1998	Briefing on South Platte River Basin and Denver Basin Aquifer issues and consideration of proposed legislation
April 22, 1998	Overview of the Final Report of the Technical Study
December 18, 1997	Briefing on Draft Report of the Technical Study and public testimony
April 16, 1997	Progress report on the Technical Study

September 11, 1996

Public testimony and defining the scope of the Technical Study

Reports

Denver Basin and South Platte River Basin Technical Study, Colorado Department of Natural Resources, April 1998.

Metropolitan Water Supply Investigation, Final Report to the Colorado Water Conservation Board, Hydrosphere Resource Consultants, January 1999.

Briefing Report On The Platte River Endangered Species Program Agreement Between the States of Colorado, Nebraska, and Wyoming and the United States Department of the Interior, Colorado Department of Natural Resources, September 11, 1997.

Funding Options for Platte River Recovery Implementation Program, Colorado Department of Natural Resources, August 27, 1997.