Compact Facts

Colorado River Compact of 1922

Allocates 7.5 million AF of consumptive use annually to (1) the Upper Colorado River Basin (those parts of Arizona, Colorado, New Mexico, Utah, and Wyoming above Lee Ferry, Arizona), and (2) the Lower Colorado River Basin (those parts of Arizona, California, and Nevada below Lee Ferry, Arizona). This Compact requires the Upper Colorado River Basin to deliver an average of 75 million AF to the Lower Basin during any consecutive 10-year period. The Lower Basin is allowed an additional 1.0 million AF of consumptive use from the Colorado River system.

Rio Grande, Colorado, and Tijuana Treaty of 1944 between the United States and Mexico

Guarantees delivery of 1.5 million AF of Colorado River water per year to Mexico. If there is not adequate surplus water to satisfy the obligation, the Upper and Lower Basins are to equally share the burden of reducing uses to make up any deficiencies.

Upper Colorado River Basin Compact of 1948

Allocates the 7.5 million AF apportionment of consumptive uses available to the Upper Basin as follows:

Arizona	50,000 AF/year
Colorado	51.75%
Utah	23%
Wyoming	14%
New Mexico	11.25%

Additionally, the State of Colorado may not deplete the flow in the Yampa River below an aggregate of 5 million AF over any 10-year period.

(continued)

Depending upon the interpretation of the Compacts, other laws, and the amount of water in the river, Colorado's right to the consumptive use of water under the Compacts may range from 3.079 million AF to 3.855 million AF per year. Colorado currently consumes an average of 2.3 million AF per year with facilities in place capable of using up to 2.6 million AF. Colorado's apportionment has not been divided among the various subbasins within the state. The Yampa and La Plata River Basins have specific delivery obligations under the Compacts. The allocation and administration of any surpluses and shortages under the Compacts within Colorado remains open to discussion but ultimately will be subject to determination and administration by the State Engineer.

South Platte River Compact of 1923

Establishes Colorado's and Nebraska's rights to use water in Lodgepole Creek and the South Platte River. Nebraska has the right to fully use water in Lodgepole Creek. Colorado has the right to fully use water in the South Platte River between October 15 and April 1. Between April 1 and October 15, if the mean flow of the South Platte River at Julesburg drops below 120 cfs and water is needed for beneficial use in Nebraska, water rights in Colorado between the western boundary of Washington County and the state line (the "Lower Section") with priority dates junior to June 14, 1897 must be curtailed or augmented through an approved plan.

Republican River Compact of 1942

Establishes the rights of Colorado, Nebraska, and Kansas to water in the Republican River Basin and makes specific allocations of the right to make beneficial CU of water from identified streams.

Major Storage Projects

Reservoir	Normal Storage (AF)
Horsetooth Reservoir	152,000
Carter Lake	112,200
Eleven Mile Canyon Reservoir	97,800
Cheesman Reservoir	79,064
North Sterling	74,590
Riverside Reservoir	63,302
Spinney Mountain Reservoir	53,873
Standley Lake	43,344
Gross Reservoir	41,811
Empire Reservoir	37,710
Jackson Reservoir	35,415
Aurora Reservoir	32,400
Barr Lake	32,100
Milton Reservoir	29,732
Prewitt Reservoir	28,840
Julesburg Reservoir	28,178
Chatfield Reservoir	26,600
Antero Reservoir	25,618
Marston Reservoir	19,795
Horse Creek Reservoir	18,747
Button Rock Reservoir	16,080
Cherry Creek Reservoir	13,226

Source: Colorado Division of Water Resources Office of Dam Safety Database.

Major Imports into the Basin

	Name	Recipient Stream	Average Diversions (AF)
1	Adams Tunnel	Big Thompson R.	218,142
2	Moffat Tunnel	South Platte R.	52,155
3	Roberts Tunnel	South Platte R.	53,676
4	Grand River Ditch	Cache La Poudre R.	17,685
5	Laramie-Poudre Canal	Cache La Poudre R.	18,580
6	Aurora Homestake	South Platte R.	12,382
7	Michigan Ditch	Cache La Poudre R.	3,294
8	Wilson Supply Ditch	Cache La Poudre R.	1,482

Major Exports from the Basin

None

*Continental Hoosier Tunnel exports from the Colorado Basin to the Arkansas Basin through a portion of the South Platte Basin.

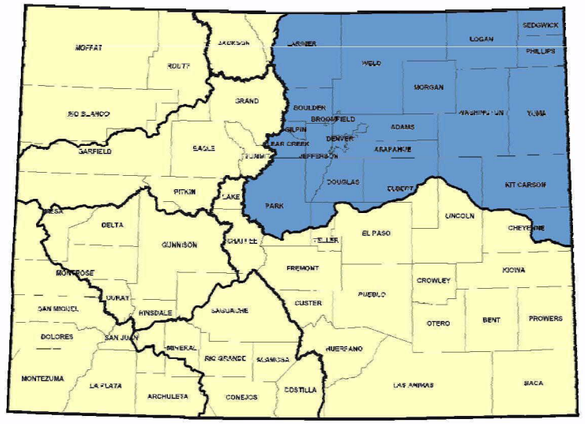
Source: Division 1 1998 Annual Report, 10-year averages.

South Platte Basin

Bill Owens
Governor

Russell George
Department of Natural Resources
Executive Director

Rod Kuharich
Colorado Water Conservation Board
Director



South Platte Basin Overview

The South Platte Basin (including the Republican River Basin) covers approximately 27,660 square miles in northeast Colorado. The largest cities in the basin are Denver (population 560,882), Aurora (population 287,216), and Lakewood (population 144,150). The topographic characteristics of the South Platte Basin are diverse. Elevations in the basin range from over 14,000 feet at the headwaters near the Continental Divide to 3,400 feet at the Colorado/Nebraska state line. The headwaters of the South Platte River originate at an elevation of about 11,500 feet. The South Platte River emerges out of the mountains southwest of the Denver metro region, flows through the Denver metropolitan urban area, and then enters the High Plains Region.

Approximately one-third of the basin's land area is publicly owned, and the majority of these lands are forest areas in the mountains. Western portions of the basin and its montane and subalpine areas are primarily forested, while the High Plains region is mainly grassland and planted/cultivated land. This includes the Pawnee Natural Grassland.

Water Conservancy Districts

Central Colorado
Logan County
St. Vrain and Lefthand
Upper South Platte
Center of Colorado
Lower South Platte
Northern Colorado
Badger and Beaver
Sedgwick-Sand Draws

South Platte Basin Water Management Issues

The South Platte Basin will face several key points and challenges with respect to water management issues and needs over the next 30 years. The following provides an overview of some of the points and challenges that have been identified.

- Colorado's most diverse and industrialized basin. Agriculture is still a dominant water use but rapid changes are occurring and the impacts to rural communities are a key concern.
- Competition for water is fierce and it is unclear how much competition there is for the same water supplies.
- The success of the Upper Colorado Recovery Implementation Program for Colorado River Endangered Fish is important. The Recovery Program is designed to address the recovery needs of the Colorado River endangered fish while protecting existing water uses and allowing for the future use of Colorado River water in compliance with Interstate Compacts, Treaties, and applicable federal and state law "the Law of the Colorado River."
- The lack of any new major water storage in the last 20 years has led to reliance on non-renewable groundwater in Douglas, Arapahoe, and northern El Paso (El Paso County is in the Arkansas Basin) counties. Explosive growth in these counties coupled with the lack of surface water supplies led to the creation of multiple small water districts and makes coordinated water development a challenge and less efficient, especially in light of limited renewable surface water supplies.

(Continued on page 3)

Beaver Ponds at Chatfield Reservoir
(photo courtesy of Colorado State Parks)

South Platte Basin Growth

The South Platte Basin is comprised of all or part of 23 counties. Changes in population from 2000 to 2030, including percent annual growth rate on a subbasin level, are shown in the table here. During that time, the population in the basin is expected to grow by almost 2 million people, or 65 percent; the fourth highest growth rate in the state.

South Platte Basin Population Projections

Subbasin Designation	2000 Population	2030 Population	Increase in Population 2000 to 2030	Percent Change 2000 to 2030	Percent Annual Growth Rate
Denver Metro	1,432,700	2,157,200	724,500	51	1.4
South Metro	685,800	1,146,400	460,600	67	1.7
Upper Mountain	39,200	125,300	86,100	220	3.9
High Plains	24,900	28,800	3,900	16	0.5
Northern	747,200	1,364,600	617,400	83	2.0
Lower Platte	55,800	89,300	33,500	60	1.6
TOTAL	2,985,600	4,911,600	1,926,000	65	1.7

South Platte Basin Water Demands

Nearly two-thirds of the increase in the state gross municipal and industrial (M&I) demand by 2030—or approximately 409,700 acre-feet (AF) - will be in the South Platte Basin. M&I is defined as all of the water use of a typical municipal system, including residential, commercial, industrial, irrigation, and firefighting. Large industrial water users that have their own water supplies or lease raw water from others are described as self-supplied industrial (SSI) water users. M&I and SSI water demand forecasts for the South Platte Basin are shown in the table above.

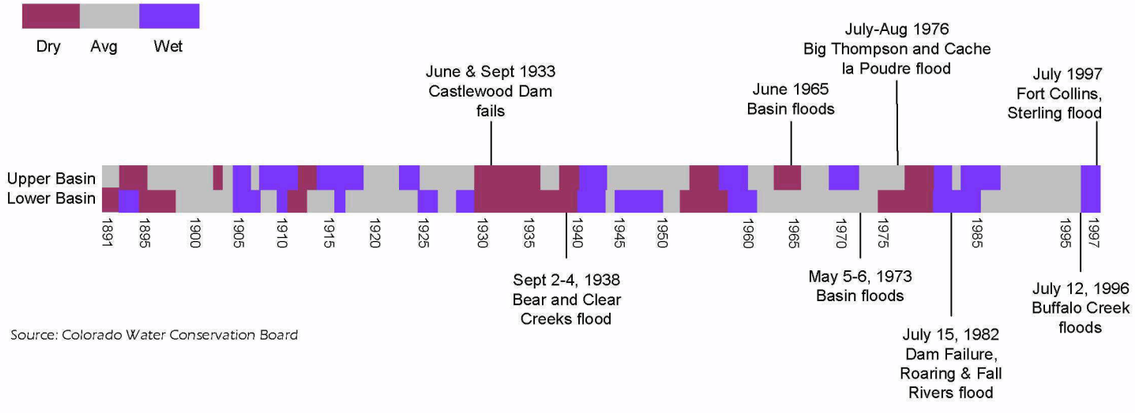
The 2000 and 2030 gross demands are presented in the table, along with the projected conservation savings. Conservation practices include ordinances and standards that improve the overall efficiency of water use, such as installation of low water-use plumbing fixtures. As the table indicates, the South Platte Basin will need an additional 409,700 AF to meet the increased demands of M&I water use. The majority of the demand is expected to be met through existing supplies and water rights and through the implementation of various projects and processes. However, there are still some anticipated shortfalls expected in certain portions of the basin. This is also shown in the table.

South Platte Basin Demand Projections

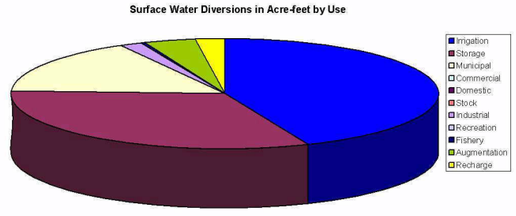
Subbasin Designation	2000 Gross Demand (AF)	2030 Gross Demand (AF)	Projected Conservation Savings (AF)	Increase in Gross Demand (AF)	Identified Gross Demand Shortfall (AF)
Denver Metro	301,600	513,400	26,800	120,600	12,500
South Metro	152,900	256,900	15,400	88,600	50,300
Upper Mountain	9,400	29,400	1,700	17,900	1,400
High Plains	9,700	11,200	700	800	—
Northern	201,000	400,000	22,600	164,900	18,400
Lower Platte	15,600	39,900	1,500	16,900	8,000
TOTAL	690,200	1,250,800	68,700	409,700	90,600

Wet and Dry Periods

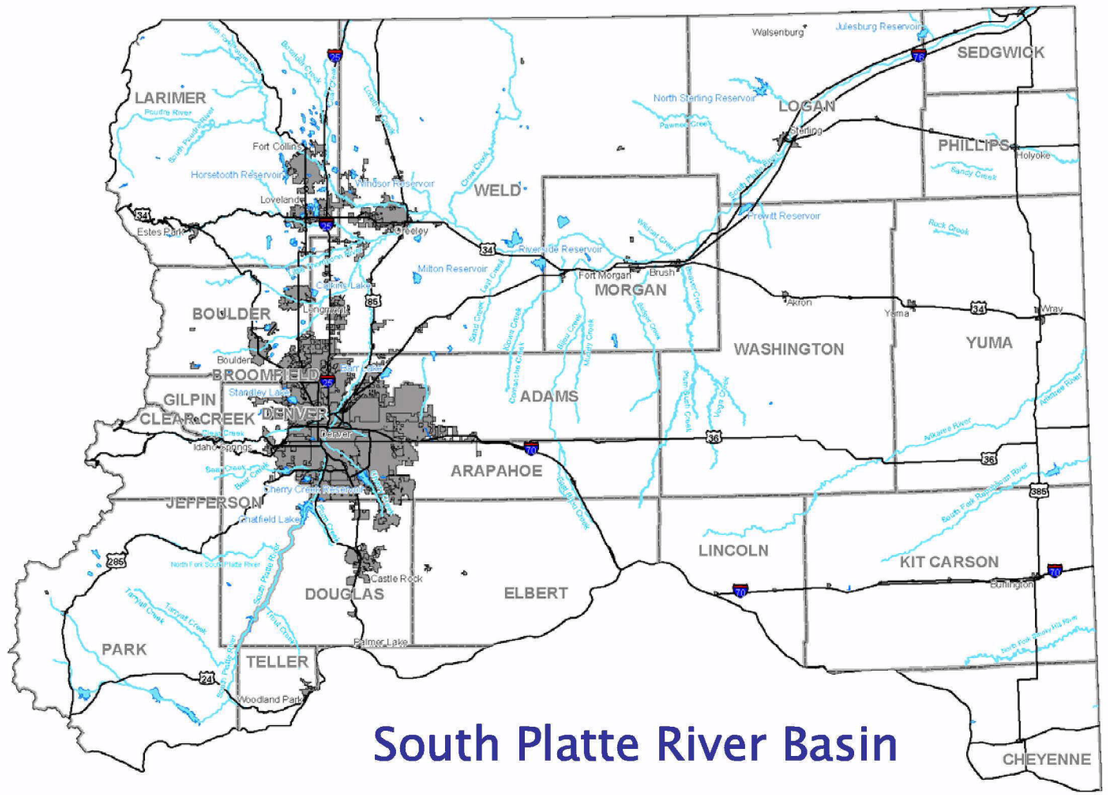
Every year, there is at least one 100-year flood somewhere in the state. Colorado's total flood losses to date have been documented to be $4.9 billion. The South Platte Basin's most recent major flood event was July 28-29, 1997. The estimated total historic flood damages for this basin are $3.4 billion to date.



Source: Colorado Water Conservation Board



Source: Colorado Division of Water Resources,
Cumulative Yearly Statistics of the Colorado Division of Water Resources, 1999-2004



South Platte River Basin

(Continued from page 1)

- Water reuse and conservation are major components to meeting future water needs but this will put added pressure on agriculture as return flows diminish.
- The urban landscape is very important to the economy and an important component to quality of life.
- Transfers of agricultural water rights to M&I use will continue to be a significant option for meeting future needs.

Bonny Reservoir (photo courtesy of Colorado State Parks)