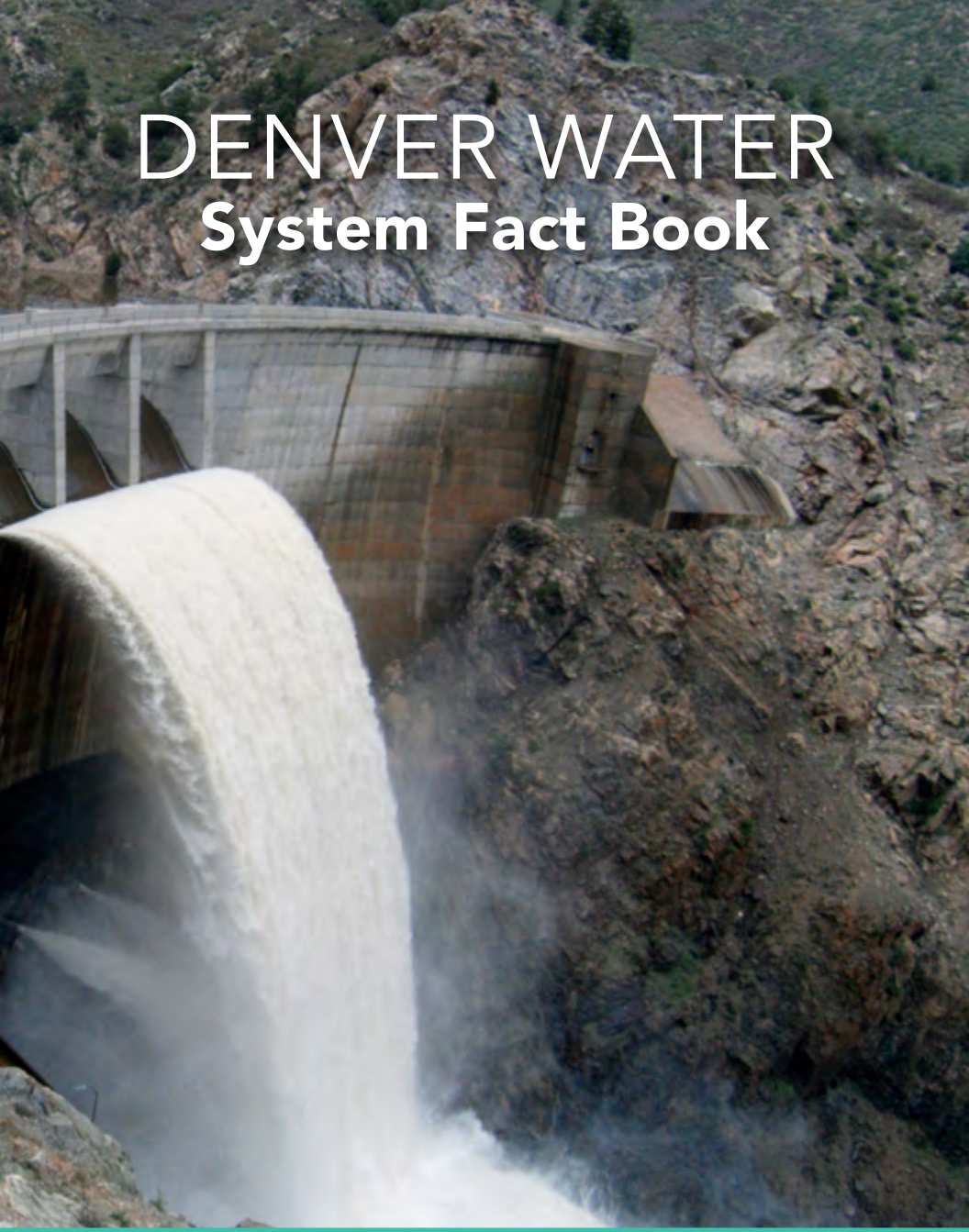


DENVER WATER
System Fact Book

DENVER WATER

TABLE OF CONTENTS

INTRODUCTION

Denver Water proudly serves high-quality water and promotes its efficient use to 1.5 million people in the city of Denver and many surrounding suburbs. Established in 1918, the utility is a public agency funded by water rates and new tap fees, not taxes. It is Colorado's oldest and largest water utility.

Do you know which tunnel stretches more than 20 miles through a mountain? How about which hydroelectric plant generates the most power? Use this guide to learn more about key facts of our system, including statistics about reservoirs, treatment plants and customer water use.

THE DENVER WATER MISSION

To serve our customers by being a national leader in delivering clean water, operating and maintaining a reliable and resilient system, and protecting the water resources of the West.

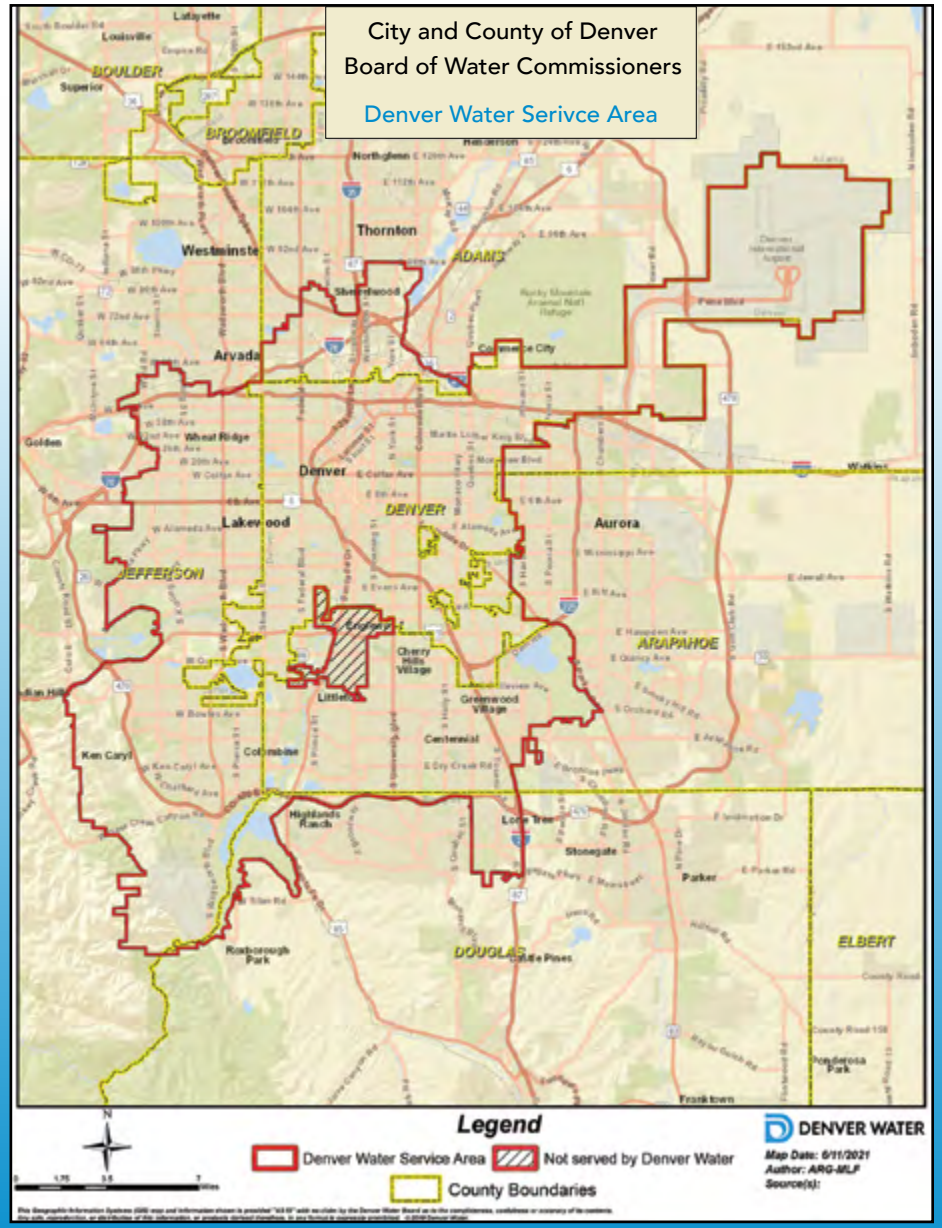
ORGANIZATION

Denver Water is run by a five-member Board of Water Commissioners, which is charged with ensuring a continuous supply of water to the people of Denver and Denver Water's suburban customers.

Number of employees (2020): 1,046

SERVICE AREA

Number of people served: 1.5 million
Service area: 335 square miles
Number of distributors: 63

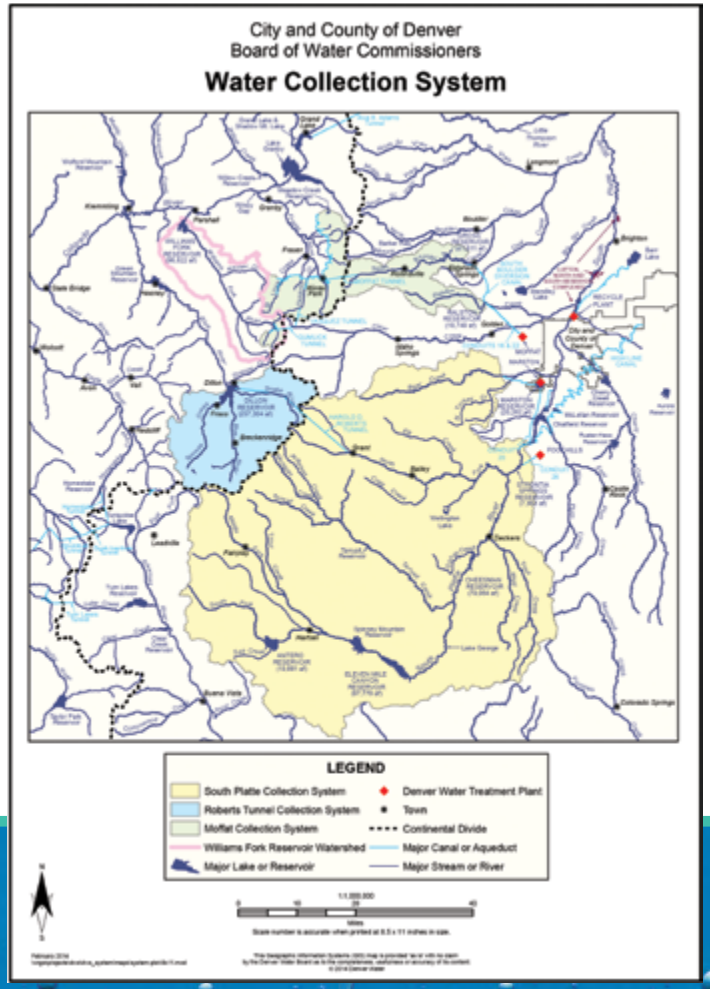


COLLECTION SYSTEM

Denver Water is responsible for the collection, storage, quality control and distribution of drinking water to 1.5 million people, which is nearly one-fourth of all Coloradans. Almost all of its water comes from mountain snowmelt, and Denver is the first major user in line to use that water.

Denver Water's primary water sources are the South Platte River, Blue River, Williams Fork River and Fraser River watersheds, but it also uses water from the South Boulder Creek, Ralston Creek and Bear Creek watersheds.

Denver Water's collection system covers about 4,000 square miles, or 2.5 million acres, and extends into more than eight counties, including Park, Grand, Jefferson, Summit, Teller, Douglas, Clear Creek and Gilpin counties.



STORAGE SUPPLY

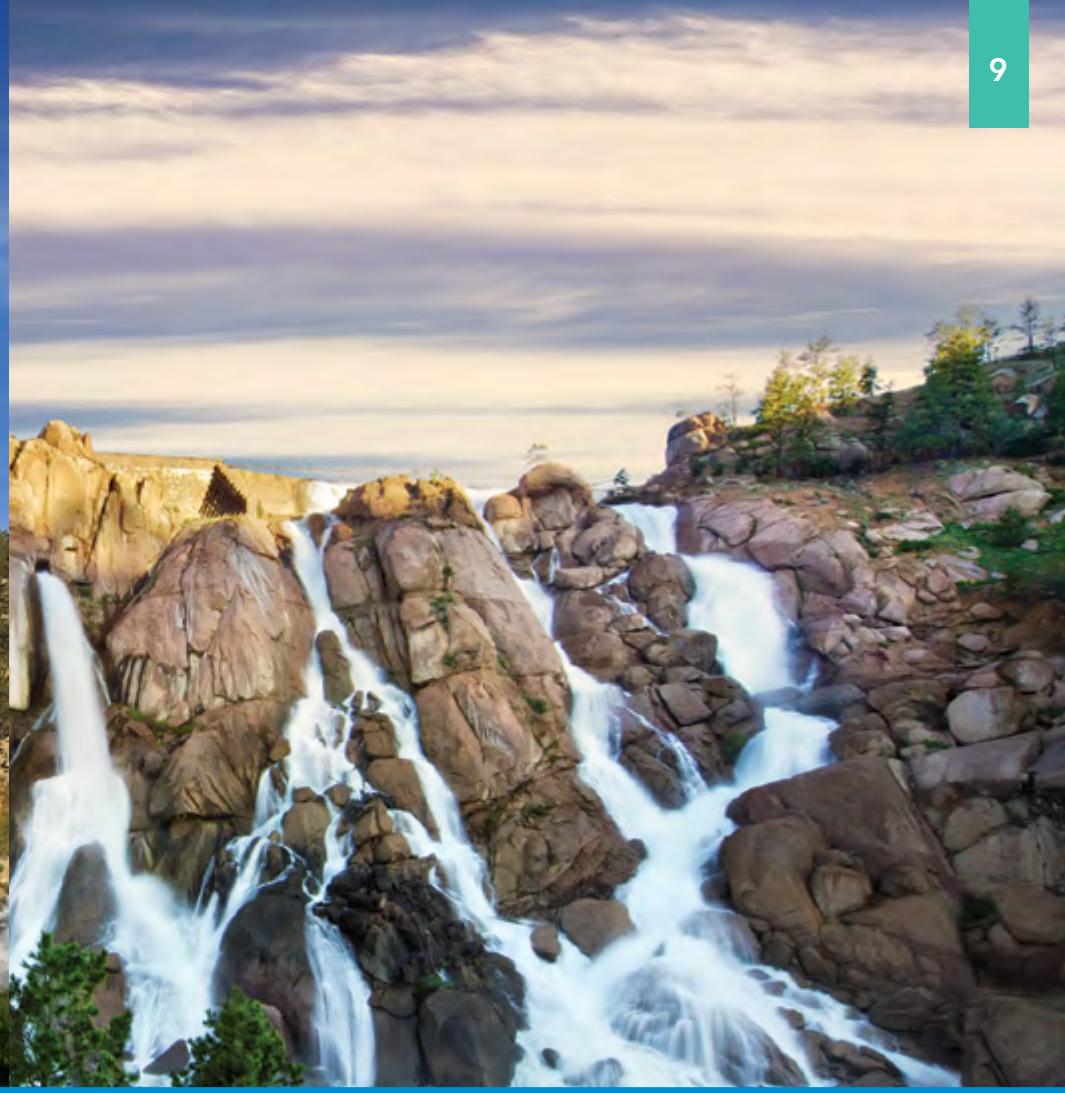
Reservoir	Percent of Total Capacity	Capacity (Acre-Feet)
Antero	2.8%	20,122
Eleven Mile Canyon	14.0%	97,779
Cheesman	11.3%	79,064
Strontia Springs	1.1%	7,863
Marston	2.9%	19,108
Chatfield	3.9%	28,709*
Platte Canyon	0.1%	910
Soda Lakes	0.1%	615*
South Complex	0.5%	3,561
North Complex	0.5%	3,495
Gross	6.0%	41,811
Ralston	1.5%	10,776
Long Lakes	0.3%	1,787
Dillon	36.8%	257,304
Williams Fork	13.8%	96,822
Meadow Creek	0.6%	4,520*
Wolford Mountain	3.7%	25,610*
Total	100%	699,683

*Denver Water portion. Chatfield is owned by the U.S. Army Corps of Engineers; Soda Lakes, Soda Lakes Reservoir and Mineral Company; Meadow Creek, City of Englewood; Wolford Mountain, Colorado River District.

FACILITY DESCRIPTIONS

Antero Reservoir

Year completed: 1909
Water right date: Oct. 8, 1907; refill date: Dec. 31, 1929; exchange right: April 1, 1935
Dam type: Earth fill
Storage capacity: 20,122 acre-feet
Spillway elevation: 8,942 acre-feet
Average annual inflow: 19,000 acre-feet
Annual precipitation: 10.4 inches
Watershed area: 185 square miles



Eleven Mile Canyon Reservoir

Year completed: 1932
Water right date: July 10, 1926; December 12, 1957; refill date: Dec. 12, 1929; exchange right: April 1, 1935
Dam type: Concrete gravity arch
Storage capacity: 97,779 acre-feet
Spillway elevation: 8,597 feet
Average annual inflow: 76,000 acre-feet
Annual precipitation: 11.9 inches
Watershed area: 963 square miles

Cheesman Reservoir

Year completed: 1905
Water right dates: June 27, 1889; Sept. 24, 1893; refill date: Dec. 12, 1929; exchange right: April 1, 1935
Dam type: Masonry gravity arch
Storage capacity: 79,064 acre-feet
Spillway elevation: 6,842 feet
Average annual inflow: 149,000 acre-feet
Annual precipitation: 16.0 inches
Watershed area: 1,750 square miles

Strontia Springs Reservoir

Year completed: 1983
Water right date: March 21, 1962 (includes refill)
Dam type: Double curve thin arch
Storage capacity: 7,863 acre-feet
Spillway elevation: 6,002 feet
Average annual inflow: 288,000 acre-feet
Annual precipitation: 21.2 inches
Watershed area: 2,590 square miles
Power plant capacity: 1.0 megawatts

Chatfield Reservoir

Year completed: 1977
Water right date: Dec. 28, 1977
Dam type: Earth fill
Storage capacity: 47,658 acre-feet, Denver Water portion: 28,709 acre-feet.
Full elevation: 5,444 feet
Average annual inflow: 151,000 acre-feet
Annual precipitation: 17.7 inches

Marston Reservoir

Year completed: 1902
Water right date: April 1, 1911
Dam type: Earth fill
Storage capacity: 19,108 acre-feet
Spillway elevation: 5,538 feet
Average annual inflow: 66,000 acre-feet
Annual precipitation: 16.6 inches

Williams Fork Reservoir

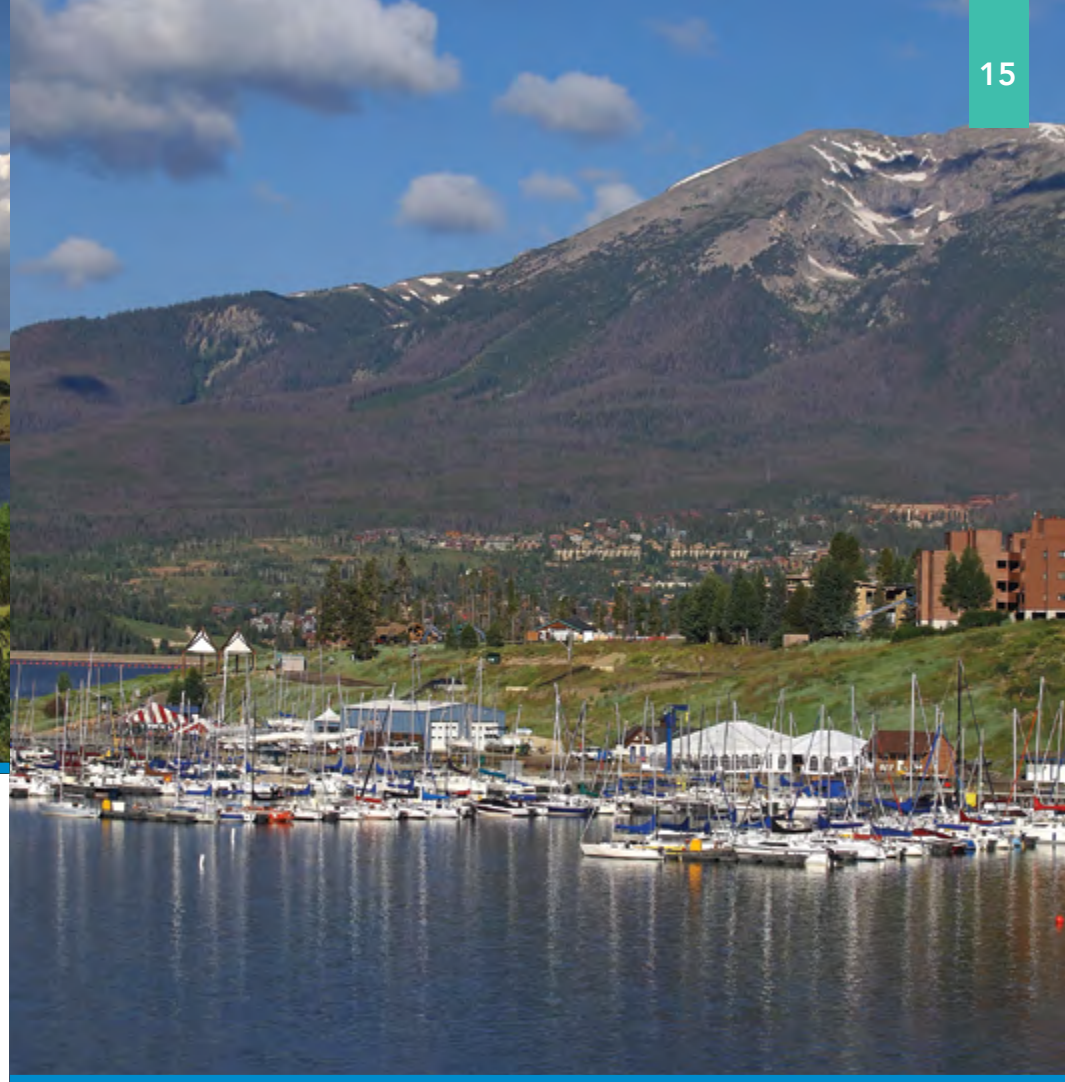
Year completed: 1938; enlargement 1959
Water right dates: Nov. 10, 1935; Oct. 9, 1956
Dam type: Concrete gravity arch
Storage capacity: 96,822 acre-feet
Spillway elevation: 7,811 feet
Average annual inflow: 94,000 acre-feet
Annual precipitation: 14.8 inches
Watershed area: 230 square miles
Power plant capacity: 3.7 megawatts

Ralston Reservoir

Year completed: 1937
Water right date: Jan. 1, 1930; Oct. 31, 1932
Dam type: Earth fill
Storage capacity: 10,776 acre-feet
Spillway elevation: 6,046 feet
Average annual inflow: 3,900 acre-feet
Annual precipitation: 18.9 inches
Watershed area: 43 square miles

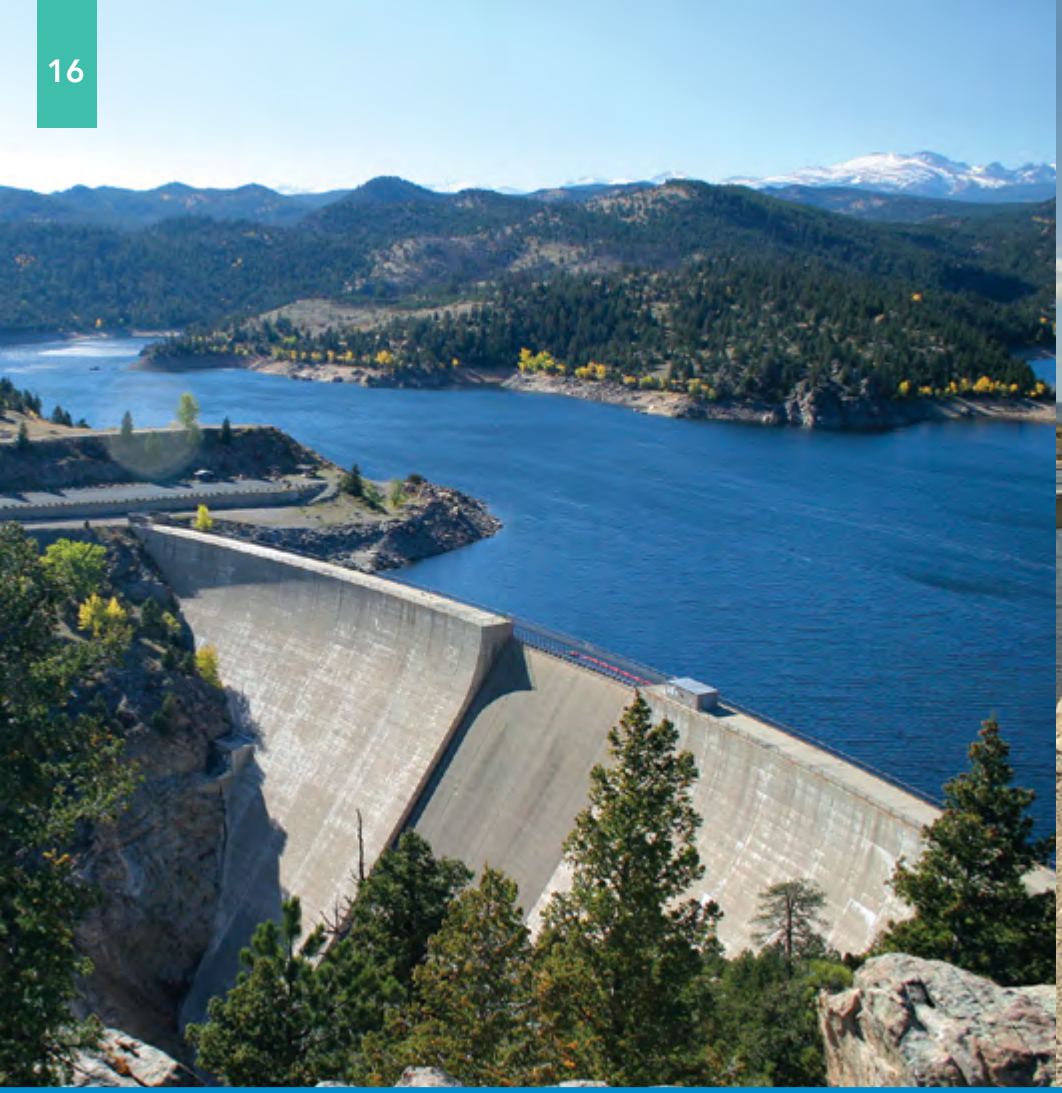
Meadow Creek Reservoir

Year completed: 1975
Water right date: July 2, 1932
Dam type: Earth fill
Storage capacity: 4,520 acre-feet (Denver Water's portion)
Spillway elevation: 9,995 feet
Average annual inflow: 7,100 acre-feet
Watershed area: 7.4 square miles



Dillon Reservoir

Year completed: 1963
Water right dates: June 24, 1946; Jan. 1, 1985
Dam type: Earth fill
Storage capacity: 257,304 acre-feet
Spillway elevation: 9,017 feet
Average annual inflow: 210,000 acre-feet
Annual precipitation: 15.7 inches
Watershed area: 335 square miles
Power plant capacity: 1.8 megawatts



Gross Reservoir

Year completed: 1954
Water right date: May 10, 1945
Dam type: Concrete gravity arch
Storage capacity: 41,811 acre-feet
Spillway elevation: 7,282 feet
Average annual inflow: 46,000 acre-feet
Annual precipitation: 21.2 inches
Watershed area: 93 square miles
Power plant capacity: 7.6 megawatts

Wolford Mountain Reservoir

Year completed: 1995
Water right dates: Dec. 14, 1987; Jan. 16, 1995
Dam type: Earth fill
Storage capacity: 66,000 acre-feet, Denver Water Portion: 25,610 acre-feet
Spillway elevation: 7,489 feet
Average annual inflow: 58,000 acre-feet
Watershed area: 270 square miles

TUNNELS AND CANALS

Roberts Tunnel

Year completed: 1962; built to bring water from Dillion Reservoir to Denver
Water right date: June 24, 1946
Tunnel description: Concrete lined; 10-foot, 3-inch diameter; 23.3 miles long
Outlet elevation: 8,667 feet
Average annual discharge: 58,000 acre-feet
Discharge capacity: 788 cubic feet per second
Annual precipitation (east portal): 15.6 inches
Power plant capacity: 6.1 megawatts

Moffat Tunnel

Year completed: 1936
Water right date: July 4, 1921
Tunnel description: Concrete lined; 10-foot, 6-inch diameter; 6.1 miles long
Outlet elevation: 9,205 feet
Average annual discharge: 54,000 acre-feet
Discharge capacity: 1,280 cubic feet per second
Annual precipitation (Winter Park office): 26.8 inches
Watershed area – Fraser: 100 square miles

Gumlick (Jones Pass) Tunnel

Year completed: 1940
Water right date: July 4, 1921
Tunnel description: Concrete lined, 7-foot horseshoe section, 2.9 miles long
Outlet elevation: 10,313 feet
Average annual discharge: 5,200 acre-feet
Discharge capacity: 550 cubic feet per second
Watershed area: 12 square miles

Vasquez Tunnel

Year completed: 1958
Water right date: July 4, 1921
Tunnel description: Concrete lined, 7-foot horseshoe section, 3.4 miles long
Outlet elevation (north portal): 10,210 feet
Discharge capacity: 550 cubic feet per second

Moffat Collection System

Concrete and steel pipe: 18.7 miles
Moffat Water Tunnel: 6.1 miles
Open canals: 2.9 miles
Covered canals: 4.0 miles
Other tunnels: 2.1 miles
Total: 33.8 miles

Williams Fork Collection System

Steel pipe: 3.6 miles
Vasquez Tunnel: 3.4 miles
Gumlick Tunnel: 2.9 miles
Open canals: 0.3 miles
Total: 10.2 miles

Roberts Tunnel Collection System

Concrete lined: 23.3 miles

South Boulder Diversion Canal

Open canals: 5.7 miles
Concrete and steel pipe: 2.6 miles
Tunnels: 1.5 miles
Covered canals: 0.3 miles
Total: 10.2 miles

Total length of mountain canals and ditches: 77.5 miles

Urban Collection System

High Line Canal: 68 miles
City Ditch (South High School to City Park): 6 miles
Last Chance Ditch to Kassler: 0.7 miles

Total number of canals and ditches: 75

WATER SUPPLY STATISTICS

HYDROELECTRIC POWER GENERATION

Denver Water's hydroelectric plants generated more than 68 million kilowatt hours of electricity in 2020, enough to offset 100% of the energy used by Denver Water's facilities that year.

Plant	Capacity (megawatts)	2020 generation (megawatts)	Average generation (megawatts per hour)
Dillon	1.8	11,984	9,497
Williams Fork	3.7	10,835	9,813
Roberts Tunnel	6.1	8,935	9,197
Strontia Springs	1.0	7,179	6,038
Foothills	3.1	6,088	5,086
Hillcrest	2.0	5,259	4,744
Gross	7.6	17,902	17,928
Total	24.7	68,182	62,303

Denver Water's primary water sources are the South Platte River, Blue River, Fraser River and Williams Fork River watersheds, but it also uses water from the South Boulder Creek, Ralston Creek and Bear Creek watersheds.

	2020	Average
Raw water collected in (acre-feet)	246,959	290,093
Supply from South Platte River and Effluent Exchange (acre-feet)	102,012	128,419
Supply from Roberts Tunnel/Blue River (acre-feet)	65,995	76,161
Supply from Moffat System (acre-feet)	78,952	85,514
Percent of total water collected:		
South Platte System	41%	44%
Roberts Tunnel/Blue River System	27%	26%
Moffat System	32%	29%

Values represent volumes diverted under Denver Water's water rights.

WATERSHED PROTECTION

The Colorado Department of Public Health and Environment has developed a source water assessment and protection plan for Colorado. In the assessment phase, officials determined where each public water system's source water comes from, what contaminant sources potentially threaten it and how susceptible each water source is to potential contamination. They then work with public water supply systems to educate them on how to interpret the assessment results and begin the transition into the protection planning process.

Denver Water's efforts include the Upper South Platte and Fraser watersheds.

WATERSHED MANAGEMENT: FROM FORESTS TO FAUCETS

As the water provider to 1.5 million people in the Denver metropolitan area, Denver Water directly depends on healthy forests and watersheds. Denver Water's collection system receives water from rainfall and snowmelt on national, state and private land.

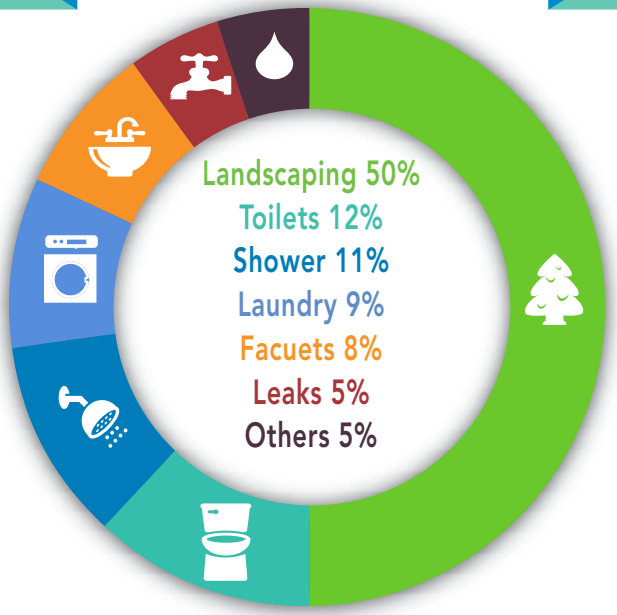
From Forests to Faucets is a watershed management partnership to help mitigate wildfires.

WATER USAGE FACTS

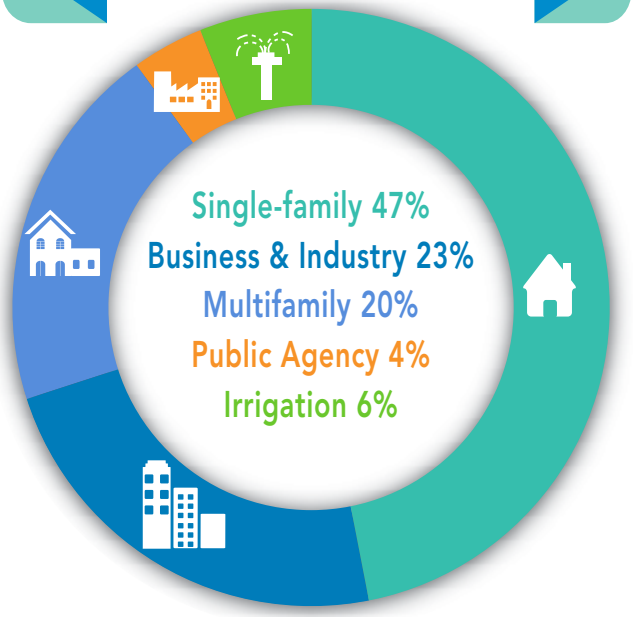
Denver Water analyzes how customers use water now and how that use may change in the future. Customers continue to use much less water than they did in previous years. In fact, customers are using 19% less water than they did 20 years ago, despite the population growing 29% during that time.

	2015-2020 average
Treated water use, acre-feet	200,000
Other uses, acre-feet	25,600
Total water usage, acre-feet	225,600
Gallons per person per day (includes all customer types)	139
Average daily consumption (million gallons per day)	178
Maximum daily consumption (million gallons per day)	369
Annual use single-family per household (gallons)	105,000

RESIDENTIAL WATER USE BY CATEGORY



TOTAL WATER USE BY CATEGORY



WATER TREATMENT PLANTS

Moffat Water Treatment Plant

Capacity: The downgraded has occurred. It is now 80 million gallons.
Sources of water: Fraser River, Williams Fork River, South Boulder Creek, Ralston Creek
Average volume treated: 31,500 acre-feet per year

Marston Water Treatment Plant

Capacity: 200 million gallons per day
Sources of water: South Platte River, Blue River, Bear Creek
Average volume treated: 41,300 acre-feet per year

Foothills Water Treatment Plant

Capacity: 280 million gallons per day
Sources of water: South Platte River, Blue River
Average volume treated: 126,900 acre-feet per year

Recycling Plant

Capacity: 30 million gallons per day
Source of water: Metro Wastewater Treatment Plant
Average volume treated: 6,500 acre-feet per year

WATER QUALITY

As a part of our extensive testing program, each year we collect more than 35,000 samples and conduct nearly 70,000 water quality tests. These efforts continually confirm that your drinking water is safe and meets or goes above federal and state requirements.

DISTRIBUTION SYSTEM

- Miles of water mains (pipelines): More than 3,000, enough to stretch from Los Angeles to New York.
- Miles of nonpotable pipes in system: 45.
- Number of pumping stations: 18 potable, three recycled and two raw water.
- Underground reservoirs in various city locations: 30.

PUMP STATIONS

Making use of the hilly terrain and the natural topography of the South Platte River valley, Denver Water uses gravity to provide water to approximately 60% of its potable water customers.
The remaining 40% rely on pump stations to deliver them water.

Denver Water has 18 potable, three recycled and two raw water pump stations in various locations throughout the distribution system, with a capability of pumping more than 1 billion gallons.

WATER EFFICIENCY EFFORTS

Creating a culture of conservation and water efficiency in Denver dates back to 1936 when Denver Water advertised on street trolleys asking customers to help save water. The modes of communication have changed, but the message remains the same, as does our commitment to helping customers use this precious resource wisely.

Denver Water offers residential rebates and personalized water use reports to customers to help them use water wisely. Customers must adhere to summer watering rules, and can access easy tips online to reduce their water use inside and out.

CURRENT PROJECTS

Gross Reservoir Expansion

The Gross Reservoir Expansion Project is a major component of Denver Water's long-term, multi-pronged approach (including promoting water efficiency, recycling water and responsibly sourcing new storage) to ensure we are able to deliver safe, reliable water to the more than 1.5 million residents in our service area today and to many of the projected 8.1 million who will call Colorado home by 2050.

The project will raise the height of the existing dam by 131 feet, which will increase the capacity of the reservoir by 77,000 acre-feet. Once permits are secured, we expect the construction to take place in three phases over a total of four to five years.

North System Renewal

Denver Water's North System was constructed in the 1930s, when the surrounding area was mostly farmland. Now, 80 years later, the North System is reaching the end of its lifespan.

The North System's treatment plant, pipelines and valves need to be replaced. The new treatment plant, named Northwater, will feature updated technology, and the existing Moffat Treatment Plant will continue to treat water at a reduced capacity until it becomes repurposed into a distribution site in 20 years.

Lead Reduction Program

Denver Water is committed to delivering safe water to our customers. The water that we provide to homes and businesses is lead-free, but lead can get into the water as it moves through lead-containing household fixtures, plumbing and water service lines — the pipe that brings water into the home from the main in the street — that are owned by the customer.

This groundbreaking program, launched in 2020, reduces the risk of lead getting into drinking water for customers with service lines or plumbing that contain lead. It will take until 2035 to replace the estimated 64,000 to 84,000 lead service lines in our service area.

Resources

denverwater.org

TAP denverwaterTAP.org

facebook.com/DenverWater

@denver_water/

@DenverWater

grossreservoir.org

Customer Care: 303-893-2444

DENVER WATER

1600 W. 12th Ave., Denver, CO 80204

denverwater.org

Planning/Factbook/2/23