

## Colorado shies from big fix as proliferating people seek more water

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It looks like the ultimate water fix: Build a huge reservoir by Dinosaur National Monument and divert much of the Yampa River, then pump back 97 billion gallons a year through a 250-mile pipeline across the Continental Divide to Colorado's increasingly thirsty Front Range.

This plan for the Yampa — one of the last free-flowing rivers in the overtapped Colorado River Basin — is designed to defray Colorado's projected 2050 water shortfall of 163 billion gallons.

The Yampa Pumpback exemplifies the state's traditional approach to enabling a growing population: Since the 1930s, Colorado has built at least 30 trans-mountain diversions using more than 100 miles of tunnels to move Pacific-bound water back eastward to where people are concentrated.

But the era of moving water across mountains may be over.

An impasse over trans-mountain projects such as the Yampa Pumpback remains the most difficult obstacle as Gov. John Hickenlooper's administration negotiates a [Colorado Water Plan](#).

A second 479-page draft plan unveiled this week after 18 months — rather than drive action to meet needs — is emerging as a plan for more planning.

Instead of picking and committing to a specific new project, state officials are focusing on "The Seven" — a planning framework that would prioritize environment needs and force diverters who spend billions to also bear risks of not enough water in dry years.

Front Range authorities favor new projects to ensure enough water to sustain growth. Some contend that state officials must commit to the Yampa Pumpback, introduced by Northern Water, or another trans-mountain diversion — one that claims last-remaining water entitlements under the interstate treaty that divvies the Colorado River.

"Colorado owes it to itself to fully explore that," Northern Water manager Eric Wilkinson said. "With the number of people coming here, we're going to have to look at all alternatives. Conservation isn't the silver bullet; it's also going to take additional infrastructure. ... These people need water, and they're willing to pay for that water."

### Three options

The South Metro Water Supply Authority's latest master plan lists the Yampa and two other river pumpback projects as options. It says a project must be done by 2025 to shift residents off [dwindling groundwater](#).

State water planners did not rule out a major new diversion. "All thoughtful options for water supply continue to be part of the discussion," officials said in a response to Denver Post queries.

Yet they did not commit. They and conservationists are aiming for a new approach of relying on [frugality](#) and [reuse](#).

"Building a big new trans-mountain diversion would be a mistake. The hydrologic risk would be overwhelming," attorney Melinda Kassen said, representing environment groups. "We have enough water. We need to use it more wisely."

For the Yampa in particular, environment groups favor protection, perhaps as a federal Wild and Scenic River.

Yampa Pumpback, as an ultimate fix, "has lost luster," said Eric Kuhn, manager of the Colorado River District on the Western Slope. "It would cost billions. It would take years. It is controversial. I mean, who's going to pay the tens of billions it would take?"

Northern Water officials said they put forth Yampa Pumpback because supplying more people — Colorado's population is growing by 1.6 percent a year, twice the national rate — threatens the existence of irrigation agriculture on the semi-arid high plains.

Cities and industry seeking more water, if unable to divert more across mountains, would have to [buy more from farmers](#). This would dry up "hundreds of thousands of acres of agricultural land," according to a South Platte Basin document sent to state planners in April.

[Hickenlooper](#) repeatedly has called any more "buy-and-dry" unacceptable.

Northern Water engineers — analyzing Yampa spring flows at rates as high as 6,000 cubic feet per second and calculating that 1.1 million acre-feet of water (358 billion gallons) a year exits Colorado into Utah — designed a project to divert and store 500,000 acre-feet (163 billion gallons) in a new reservoir downriver from Maybell. (An acre-foot is generally believed to be enough to serve the needs of two families of four for a year.)

Wilkinson estimated Colorado is entitled to an additional 300,000 acre-feet a year (98 billion gallons) under the Colorado River Compact, which divides river flows between upper and lower basin states.

### **"Economically feasible"**

Northern Water's engineers concluded in a 2006 project summary that Yampa Pumpback, at a price of \$3.9 billion, is "economically feasible" and superior to other options metro Denver water planners have considered. It would tap unclaimed water that otherwise leaves Colorado, they said. "The project would provide a water supply which, when combined with conservation, could meet the state's water needs well into the 21st century."

Colorado residents long have relied on re-engineering rivers to survive.

Early settlers first moved water across mountains in 1860, diverting Blue River flows through a series of high-altitude ditches across Hoosier Pass to supply miners near Fairplay.

As the population grew on the dry east side of the Continental Divide, trans-mountain projects served farmers. Later diversions increasingly were done to meet urban needs.

Today's system of reservoirs, pipelines and tunnels moves more than 500,000 acre-feet a year (163 billion gallons) from west to east.

Major trans-mountain diversions include Northern Water's 13.1-mile Adams Tunnel under Rocky Mountain National Park; Denver Water's 6.2-mile Moffat and 23.3-mile Roberts tunnels; and Colorado Springs and Aurora's project that diverts water under Independence Pass.

The amount of new water Colorado could capture and divert depends largely on downriver states and the Colorado River compact.

It says upper-basin states (Colorado, New Mexico, Utah, Wyoming) must leave 7.5 million acre-feet a year for lower-basin states (Arizona, California, Nevada). The total river flow has been averaging less than 13 million acre-feet. Colorado gets 51 percent of the upper-basin share.

Drought in California and other far Western states is forcing 40 million Westerners to rely more on the Colorado River.

"The idea of taking any more water out of the Colorado River or its tributaries seems like a kind of insanity right now," Robert F. Kennedy Jr., president of the Waterkeeper Alliance, said in an interview during a recent forum in Boulder.

"We knew, even a couple decades after the compact was negotiated, that it overallocated the Colorado's water," Kennedy said, pointing to mud flats where the river dies before reaching the Sea of Cortez and estuary species going extinct.

### **Fight against projects**

Since the 1950s, environmental groups have fought proposed projects, such as Echo Park Dam in Dinosaur National Monument, to keep the Yampa free-flowing. In 2011, the U.S. Bureau of Land Management finished a second-phase analysis and declared three segments of the Yampa suitable and eligible for Wild and Scenic protection.

"We certainly think the Yampa deserves Wild and Scenic protection," said Soren Jespersen, board president of Friends of the Yampa. However, that group is not currently pursuing federal protection, favoring a more flexible state-led approach hashed out with local communities.

Friends of the Yampa and others bristled at the notion of a pumpback.

"An antiquated idea," Jespersen said. "Some folks in the water community have seen this approach work in the past and assume it will work in the future."

Next week, a subcommittee of water leaders plans to refine the seven points framework for trans-mountain projects.

The resilience of rivers would have to be built up before planning could begin. Any Front Range proponent of a trans-mountain project would bear the risk of a shortage of water in the Colorado River.

Denver Water seeks more water for the future but isn't considering Yampa Pumpback, utility manager Jim Lochhead said.

"Because we're more aware of the long-term uncertainty of Colorado River supplies," he said, "there needs to be a more incremental approach than what is represented by many of the projects in existence today."

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### **Colorado's trans-mountain diversions**

The 13.1-mile Adams Tunnel, under Rocky Mountain National Park, opened in 1947, siphoning up to 216,570 acre-feet a year from the Colorado River to the northern Front Range.

Denver Water's 6.2-mile Moffat Tunnel, north of Berthoud Pass, since 1936 has moved up to 52,390

acre-feet from the Fraser River and other Colorado River tributaries to the Front Range.

The 23.3-mile Roberts Tunnel, completed in 1962, carries 58,426 acre-feet of water from the Blue River, a Colorado tributary, to Denver.

Colorado Springs and Aurora since 1967 have used the 5.5-mile Homestake Tunnel, diverting up to 43,300 acre-feet of Eagle River headwaters through Turquoise and Twin Lakes reservoirs and a pipeline to Aurora and Colorado Springs.

The 5.4-mile horseshoe-shaped Boustead tunnel, completed in 1971, carries 52,013 acre-feet from the Fryingpan River, a Colorado River tributary, for use along the Front Range.

The Twin Lakes Tunnel, done in 1935, moves 40,005 acre-feet from the Roaring Fork River under Independence Pass to Front Range cities.