



6. WATER: Colo. consumption expected to triple by midcentury -- study (08/06/2009)

Eryn Gable, special to E&E

Colorado will likely triple its water consumption by 2050 due to a growing population, expanding economy and environmental needs, according to a new [study](#) by the state water planning agency.

The study, released last week by the Colorado Water Conservation Board, notes that the state's population is expected to nearly double between 2010 and 2050, swelling from about 5 million to 10 million. Most of the increase is expected to occur in the South Platte and Arkansas basins of the Front Range, where water resources are already strained.

The board says water providers will need to use a mix of strategies to meet the growing demand, including finding new water sources, improved conservation measures, and conversion of water from agricultural to municipal use.

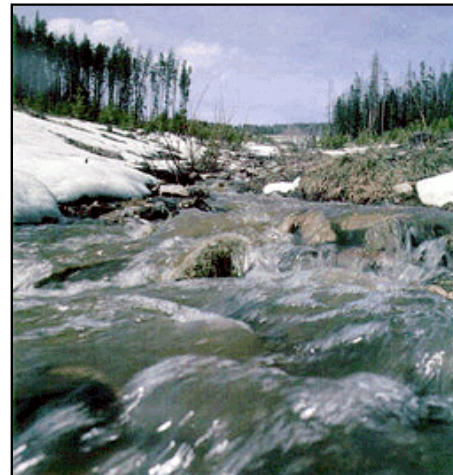
The report says annual statewide water use was about 1 million acre-feet last year and is projected to increase to nearly 2 million acre-feet by 2035 and close to 3 million acre-feet in 2050.

The draft report is one of four new technical reports released last week by the Colorado agency. The others include a new [mapping process](#) that provides a first assessment of environmental and recreational needs by basin, a [pilot study](#) of a new watershed flow evaluation tool for the Roaring Fork and Fountain Creek watersheds and a new [evaluation](#) of water supply strategies.

"These reports further demonstrate why it is so important that Colorado address water planning with renewed urgency," Harris Sherman, executive director of the state Department of Natural Resources, said in a statement. "We have no time to waste."

In addition to population growth, several other factors could play a role in the state's future water supplies. Among the biggest issues affecting the state's water security are climate change and oil shale development.

According to the recently issued Colorado Climate Change Report, the state's annual average temperature is expected to rise between 2.5 and 4 degrees Fahrenheit over the next 50 years. That warming could decrease runoff in the Upper Colorado River by 5 percent to 20 percent and alter the timing and form of precipitation.



Colorado officials warn that the state's water resources will be strained over the next four decades by population growth, climate change and continued oil shale development. Photo courtesy of USGS/National Atlas of the United States.

At the same time, a study conducted by two of the state's basin roundtables concluded oil shale development could consume as much as 400,000 acre-feet of water annually if it is pursued aggressively. That could use up the remaining water available to the state under the Colorado River Compact.

"If we had the oil shale industry take off, it would significantly increase what our industrial use of water is in the state," said Eric Hecox, chief of the Colorado Water Conservation Board's intrastate water management and development section.

Jim Pokrandt, a spokesman for the Colorado River Water Conservation District, noted that a looming question hanging over the state is where the additional water supplies will come from to meet the increased demand.

"Is it going to be the death of agriculture on both the West Slope and the East Slope? Eighty percent or more of our water use is by agriculture," Pokrandt noted. "Or will there be another old-school transmountain diversion attempt that will fuel more growth at the expense of West Slope values, environment and agriculture?"

Some will look to the Colorado River as a possible source of supply, but Pokrandt indicated the Colorado River District is firmly committed to protecting agricultural, recreational and environmental values in the basin. Instead, he urged the state to look at conservation, reuse and better water efficiency to meet at least some of the projected demand.

Predictions questioned

But some cast doubt on the accuracy of the forecasts, noting the continued uncertainty about how much water that oil shale development will use and how climate change will affect flows in the Colorado River and other river systems in the state.

Jay Winner, general manager of the Lower Arkansas Valley Water Conservancy District, questioned whether the population projections developed by the state demographer will prove true, noting that changes in average family size may undermine some of the latest assumptions.

"This is a very personal opinion, but the days of the big family with four, five or six kids appear to be over," Winner said.

Drew Peternell of Trout Unlimited's Colorado Water Project also noted that the municipal and industrial demands report did not include gains from conservation in its analysis. Conservation could cause per capita water consumption to decline by as much as 40 percent by 2050, Peternell said.

"By leaving conservation out, they've obscured reality," Peternell said. "They've created more demand."

Peternell also stressed that the state needs to go further in its analysis of non-consumptive needs, which includes flows intended to protect the environment as well as recreational uses of rivers. The latest report only maps out where non-consumptive needs exist; it does not identify what levels of flows are necessary to sustain those attributes.

"We do want to make sure those needs are not just identified, but also quantified," Peternell said.

The reports also found that new water supply projects will be more expensive than predicted in the past. A new water supply project yielding 250,000 acre-feet is expected to cost between \$7.5 billion and \$10 billion.

The Colorado Water Conservation Board will be soliciting feedback on the draft reports over the next several months from members of the state's nine basin roundtables and other interested stakeholders. The reports will then be released in a final form or incorporated into other future reports.

Future efforts will likely include a statewide update of Colorado's consumptive and non-consumptive needs, an updated assessment of the gap between municipal and industrial water supplies and future needs, an analysis of alternative agricultural transfer programs in Colorado, an evaluation of water supply strategies, and a new database to track the progress of municipal water supply projects, conservation efforts and planning processes.

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