

Here's what you need to know about Lake Mead's falling water levels

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After years of drought, Nevada is expected to be under a federally declared water shortage beginning next year.

The stewards of the water and hydroelectric power that the Colorado River produces by way of the Hoover Dam and Lake Mead have contingencies in place, meaning Las Vegas residents won't notice anything dramatically different after the shortage is likely confirmed this summer.

Conservation efforts have kept water consumption well under Nevada's allocation and under the cap the state will face with upcoming cuts.

But with the Lake Mead reservoir at about 36% capacity to start another roasting Southern Nevada summer, it's only a matter of time before the water shortage becomes official.

So what is a federally declared water shortage?

The U.S. Bureau of Reclamation, which operates Hoover Dam, will call a water shortage if Lake Mead's depth is

projected to drop below 1,075 feet by the end of the year, based on its Aug. 15 forecast. The declaration would take effect in January.

The bureau has already said the declaration was coming. Lake Mead tied its all-time low of 1,071.56 feet on June 9 and has continued to set incrementally lower records since. Bureau spokeswoman Patti Aaron said the trend was expected to continue at least until late fall, when seasonal agricultural water needs decrease.

But any subsequent rebound is expected to be nominal. The lake's water level could hit about 1,064 feet in November, then creep up to about 1,070 in February before ebbing again, according to bureau projections. By April 2023, it could drop to 1,047 feet.

The bureau declares a shortage with the input of the seven states that rely on the Colorado via the negotiated joint drought contingency plan, which the states signed in 2019.

What does this mean for water consumers?

Nevada's Colorado River allotment is about 300,000 acre feet per year (an acre-foot is enough water to cover an acre of land, about the size of a football field, one foot deep, or about 326,000 gallons of water). The shortage cuts Nevada's allotment by about 13,000 acre feet, plus a

separately agreed upon 8,000 acre-foot reduction the state voluntarily agreed to in its drought contingency plan.

The new 279,000 acre-foot cap means an annual allocation cut of about 6.8 billion gallons.

Nevada used about 256,000 acre-feet of water in 2020, said Southern Nevada Water Authority spokesman Corey Enus.

Because of protocols it has followed over the last 29 years of drought conditions, Nevada is poised to weather additional tap-tightening, he said.

Residential water customers in Southern Nevada will see no rate increases or usage restrictions as a result of the shortage. The authority's focus is on outdoor water conservation, such as cutting back on landscaping irrigation. Water drawn for indoor household use is captured and returned to the reservoir, the source of about 90% of all of the valley's water.

"Anything that touches a drain in the city makes its way back to Lake Mead," Enus said.

Any further individual conservation effort is voluntary, Enus said. The water shortage underscores the importance of conservation, he said.

He encouraged people to continue to report water waste, fix

leaks and switch to water-wise landscaping.

How about electricity customers?

Electricity customers won't see a change, either.

Reclamation had foresight.

Five of the 17 main hydraulic turbines at the Hoover Powerplant have been replaced in recent years with more efficient models. Without the turbine upgrades, the plant would have been less than two years away from not having enough water to operate.

The turbines are the core of one of the largest hydroelectric plants in the nation, producing enough power to serve 1.3 million people a year in Nevada, Arizona and California.

The old turbines could operate at a water level down to 1,050 feet. The new models will keep spinning and generating power down to 950 feet, or a loss of another 100 feet.

Water enters the iconic Art Deco intake towers and flows down penstocks, or pipes, to the turbines, which power the generators. But less water means less pressure and less electricity generated to send out to the grid.

In 2000, when Lake Mead was at a depth of about 1,200 feet, the plant generated 5.3 billion kilowatt-hours of hydroelectric power, Aaron said. In 2010, when the reservoir

hovered around 1,100 feet, it churned out 3.6 billion kilowatt-hours.

Last year, with water a little lower than that, it produced 3.3 billion kilowatt-hours.

Recreation at Lake Mead?

The shortage is about water allocation, so it doesn't affect visitor access to Lake Mead National Recreation Area, a park spokeswoman said. Visitors will still be able to get out to the lake, though the drought has whittled down recreation opportunities and continues to do so.

Over the last 20 years of sustained drought, the National Park Service has closed some lake access points and invested tens of millions of dollars at other locations to extend boat launch ramps and update other infrastructure to accommodate lowering water levels.

Park employees have added temporary launch ramp extensions at Hemenway Harbor, Temple Bar and Echo Bay. Boulder Harbor closed indefinitely earlier this month when the narrow passage connecting the harbor to the lake became too shallow to navigate safely.

When would the shortage be over?

The shortage would be declared for one year, renewable

annually depending on conditions. It would be repealed when the depth of Lake Mead returns to 1,075 feet. (Official readings are taken each August.)

Aaron said three to four years of above-average snowpack in the Rocky Mountains would break the drought. But there is no telling when or if that will happen.