

## Colorado River Water To California Will Be Reduced 60% in the Mid-80's

LAKE HAVASU — Eight hundred feet above this blue oasis in a red-rock desert, a 22-foot-diameter hole has been drilled through Buckskin Mountain.

This is the tunnel where, in 1985, Colorado River water will begin a 190-mile journey to Phoenix, a fact experts say could lead to water rationing in Southern California in future dry years.

The 6.9-mile Buckskin Mountains Tunnel is the start of the Central Arizona Project (CAP), a dream which Arizona people have talked about for more than 30 years. Now it is rapidly becoming a reality.

For more than 40 years, the coastal plain of Southern California has drawn water from the Colorado, transporting it through the 242-mile Colorado River Aqueduct built by the Metropolitan Water District in the 1930s.

The Colorado River source will be sharply curtailed, however, when the Central Arizona Project begins operation in 1985.

"No one should be lulled into believing this problem can be postponed," said Evan L. Griffith, Metropolitan Water District general manager. "There is every indication that the project will be completed all the way to Phoenix by the target date of 1985."

The Central Arizona Project is indeed a reality. Construction all the way to Tucson has passed the 32-percent-complete mark, the stretch to Phoenix, necessary to begin operation, being well past 50 percent.

"Buckskin Mountains Tunnel was finished earlier this year," said Edward M. Hallenbeck, CAP manager, "and the pumping plant below it which will lift Colorado River water up from Lake Havasu to the tunnel is more than 85 percent complete."

"Three other pumping plants on the route to Phoenix are also under construction, and all but 45 miles of the 190-mile canal system along this stretch is either completed or under construction. Construction of the remaining canal from Phoenix to Tucson — about 118 miles — is just beginning."

Just what does this mean to Southern California?

"We have to face the reality that our Colorado River allotment will be reduced by nearly 60 percent," Griffith said.

Metropolitan serves 27 member agencies in six Southern California counties with a population of more than 12 million. It presently has an annual share of 1.2 million acre-feet of Colorado River water.

"In 1985, that annual share will be cut to 550,000 acre-feet as a result of the 1964 U.S. Supreme Court decision which ended a long legal battle between Arizona and California," Griffith said. "And because of other claims still unsettled, the bottom line may be less than 450,000 acre-feet, little more than a third of what we have available today."

"To put this in perspective, the share we will be losing would be enough water to serve a city with a

population the size of the entire San Francisco Bay area."

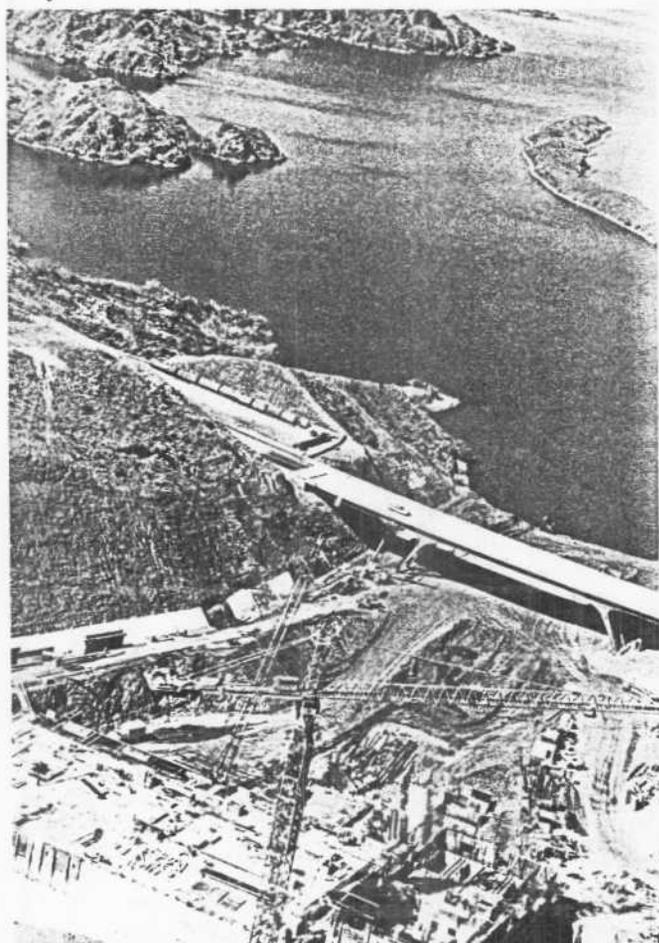
Water suppliers have not watched this day come without planning for it.

When the Supreme Court decree was handed down, Metropolitan already had contracts for State Water Project (SWP) supplies. The project had been approved by voters statewide in 1960, it was under construction and water was scheduled to reach Southern California in 1972.

"When we learned we would lose such a large part of our Colorado River supply to Arizona, we immediately turned to the state to increase our contract for SWP water," Griffith said. "We knew that by 1990, Metropolitan would be dependent on northern water for 75 percent of its supply. No one involved in water planning throughout California had any doubts that the planned Peripheral Canal would be built by the time the CAP was completed and ready for use. The canal is needed to carry water across the Sacramento-San Joaquin Delta.

"Now it is more than 15 years later, the CAP is nearing completion and the Peripheral Canal hasn't

*LAKE HAVASU — Construction of the first pumping plant on the Central Arizona Project, located on the bank of the Bill Williams River where it flows into the Colorado, is 85 percent complete. When it and other portions of the project are finished in 1985, the allotment of Colorado River water now going to the coastal plain of Southern California will be reduced about 60 percent. This plant, just north of Parker Dam, will pump that lost water to Buckskin Tunnel, 824 feet above the river, from which the water will start its journey to Phoenix 190 miles away.*



## ... Central Arizona Project Nearing Completion; Peripheral Canal Not Started.

even been started. And without it, the SWP is not capable of delivering the amounts of water we will need."

Griffith acknowledged that Metropolitan does not presently use all of its yearly 1.2-million-acre-foot Colorado River share.

"Water systems are built to provide for future years and to provide for dry years," he explained. "We must have that kind of insurance. We used our full Colorado River supply for about 10 years prior to the arrival of state project water in 1972. And we used it all during the 1976-77 drought.

"In fact, for most of 1977, no water at all was pumped over the Tehachapis from the State Water Project. We released our share to help stricken areas to the north. We ran the Colorado River Aqueduct beyond designed capacity.

"After 1985, we won't have the Colorado River back-up in a drought and without the Peripheral Canal our Northern California supply simply will not be enough. Then, when the next drought comes, water rationing for Southern California is certain."

And work on the Central Arizona Project continues.

Hallenbeck said the CAP will bring great benefits to the state and will help reduce serious overdrafting of groundwater resources now being pumped faster than nature can replenish them.

Authorized by Congress in 1968, just four years after the Supreme Court decision granting Arizona the water, the CAP is being built by the U.S. Water and Power Resources Service, formerly the Bureau of Reclamation, at a cost of more than \$2 billion. Future water users will repay 75 percent of the cost through contracts with Central Arizona Water Conservation District, which has contracted to operate the project.

"The CAP is much more than just a canal from the Colorado River to the Tucson area," Hallenbeck said. "It includes dams, pumping plants, Indian irrigation systems, entitlement in a generation plant, an electrical power transmission system and a computerized central control system."

Water will enter the project at Havasu Pumping Plant, just downstream and across Lake Havasu from Metropolitan's Colorado River Aqueduct intake. The Havasu plant intake is a little more than two miles north of Parker Dam, just south of the mouth of the Bill Williams River.

Havasu Pumping Plant will lift a maximum of about 6,000 acre-feet of water a day 824 feet up the side of the mountain to Buckskin Mountains Tunnel.

When it comes out the other end, it will travel via winding concrete-lined canals and additional tunnels across the rock, sand and sparse vegetation that are the Arizona desert.

"The first 190 miles of the system, to a point northeast of Phoenix, is called the Granite Reef Aqueduct," said Hallenbeck. "The three other pumping plants along this stretch are the Bouse Hills near Vicksburg, the Little Harquahala, a mile south of Highway 10, some 50 miles southeast of Parker, Arizona and the Hassayampa, about 40 miles west of Phoenix. The total

lift of all four pumping plants along the Granite Reef Aqueduct is about 1,200 feet."

Connecting with the Granite Reef Aqueduct will be the Salt-Gila Aqueduct, which will wind south and east for another 59 miles, ending about 10 miles south of Florence. A pumping plant at the upstream end of this aqueduct will lift the water 84 feet. Construction of this plant began last year. This aqueduct is tentatively scheduled for completion about 1985.

A third segment is the Tucson Aqueduct which begins where the Salt-Gila ends. The initial phase of the Tucson Aqueduct ends near Rillito, on Interstate 10 about 12 miles northwest of the Tucson city limits. Three pumping plants on this phase will lift the water 568 feet. The final phase of the Tucson Aqueduct is still in the planning state and is expected to be completed in 1989, according to Hallenbeck.

The Central Arizona Project will require almost 550,000 kilowatts of electrical power yearly. It will come from Navajo Generating Station near Page, Arizona, a project in which the city of Los Angeles is a partner.

More than 400 miles of power lines will be built to service CAP facilities.

Not all of the problems in allocating CAP water have been worked out.

Allocations made by Secretary of Interior Andrus to Indian tribes just before the Carter administration left Washington are in litigation. Other allocations to municipal, industrial and agricultural users remain to be resolved.

Also, a method of storing water at the end of the Granite Reef Aqueduct is still under study by WPRS and the Corps of Engineers. They are investigating various alternatives, including the originally planned Orme Dam.

Orme, a proposed structure at the confluence of the Salt and Verde rivers east of Phoenix, and another dam to replace an existing structure at Lake Roosevelt, also east of Phoenix, are still under consideration. The state is, however, also looking at groundwater storage as part of the Orme study. But Arizona Department of Water Resources officials indicate that underground reservoirs are not stable enough to depend on in future years.

Arizona already has four reservoirs on the Salt River and two on the Verde, one on the Gila and one on the Aqua Fria. None, however, are large enough to store the additional water that will reach Phoenix in 1985.

"The types of concerns being addressed about the CAP are the same types generally attendant to building any water project," Griffith said. "The important thing for us to remember is that the CAP is proceeding on schedule. In 1985 our share of Colorado River water will be reduced as ordered and though we have contracts for the water from Northern California, we won't be able to get it on a firm basis.

"That has to concern us. It's time construction of the Peripheral Canal began. It's necessary to help provide an adequate water supply for all Californians."