During the early 1900's, the seven states of the Colorado River Basin: Arizona, California, Nevada, New Mexico, Wyoming, Colorado, and Utah negotiated for shares of Colorado River water. In 1922, representatives from the seven states and the United States government created the Colorado River Compact, which divided the states into lower and upper basins and gave each basin 7.5 million acre-feet of water to apportion. Arizona, California, and Nevada were sectioned into the lower basin, and were instructed to divide their 7.5 million acre-foot allotment among themselves.

Arizona was in dispute over its share of the river, however, and was the last state to approve the Compact in 1944. Today in the Lower Basin, Arizona has rights to 2.8 million acre feet of Colorado River water per year, California is entitled to 4.4 million acre feet per year and Nevada has annual allocation of 300,000 acre feet. One acre foot of water equals 325,851 gallons, the amount used a family of four in one year.

In 1946, the Central Arizona Project Association was formed to educate Arizonans about the need for CAP and to lobby Congress to authorize its construction. It took the next 22 years to do so, and in 1968, President Lyndon B. Johnson signed a bill approving construction of CAP. The bill provided for the Bureau of Reclamation of the Department of the Interior to fund and construct CAP and for another entity to repay the federal government for certain costs of construction when the system was complete.

In 1971, the Central Arizona Water Conservation District was created to provide a means for Arizona to repay the federal government for the reimbursable costs of construction and to manage and operate CAP. Construction began at Lake Havasu in 1973 and was completed twenty years later south of Tucson. The entire project cost over $4 billion to construct.
Historic Timeline

1919: Colorado River Basin States organizes League of the Southwest to promote river development.

1921: Congress authorizes Colorado Basin States to enter into a Colorado River Compact.

1922: Colorado River Compact submitted to Congress for approval.

1928: Congress authorizes Boulder Canyon Project, allotting 4.4 million acre-feet of water annually to California, 2.8 million to Arizona, and 300,000 to Nevada.

1944: United States and Mexico sign treaty allotting 1.5 million acre-feet of Colorado River water annually. Arizona legislature ratifies Colorado River Compact.

1946: Central Arizona Project Association is organized.

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1950: Senator McFarland introduces S. 1175 to authorize CAP.

1951: Supreme Court hands down opinion in Arizona v. California, allotting 2.8 million acre-feet of mainstream Colorado River water to Arizona annually, clearing the way for action on CAP by Congress.

1952: Supreme Court decree in Arizona v. California is handed down, formally ending 12 years of court litigation over water rights affecting CAP.

1953: Upper and Lower Basin States reach agreement on Colorado River legislation.

1954: Senators Carl Hayden and Paul Fannin introduce a new bill, S. 1004, to authorize CAP.

1955: Senator Johnson signs S. 1004, Colorado River Basin Project, authorizing CAP.

1956: Construction begins on the Navajo Generating Station by a group of private and public utilities and the federal government. CAP retains the right to 24.3% of the generating capacity of Navajo.

1957: Maricopa, Pinal, and Pima counties create the Central Arizona Water Conservation District (CAWCD) to repay the federal government and contract to sell water. CAWCD's Board of Directors negotiate the required repayment contract with the Secretary of Interior.

1958: The Master Repayment Contract is signed, limiting CAWCD's repayment obligation to $1.2 billion.

1959: Appropriated construction funds are made available and the first construction contract is awarded. Groundbreaking ceremonies are held on the shores of Lake Havasu.

1960: The first of three planned 750 megawatt generating units of the Navajo Generating Station begin producing power for commercial sale. The first concrete placement on CAP is made as part of the inlet structure on Reach 11 of the Granite Reef Aqueduct.

1961: The Arizona Water Commission, by letter to the Secretary of Interior, announces recommendations for CAP water allocation to municipal and industrial users.

1962: Interior Secretary Cecil Andrus announces the final Indian allocations.

1963: The Programmable Master Supervisory Control System specifications are completed.

1964: The final environmental impact statement for water allocations and water delivery contracts is filed with the U.S. Environmental Protection Agency.

1965: The Agency Proposed Action is identified as Plan 6 including new/modified Roosevelt Dam on the Salt River, a new/modified Stewart Mountain Dam also on the Salt River, Cliff Dam on the Verde River, and New Waddell Dam on the Agua Fria River.


1967: The first Colorado River water is pumped from Lake Havasu and delivered to the Harquahala Valley Irrigation District. The 190 mile-long Granite Reef Aqueduct (now Hayden-Rhodes) is completed, as are all pumping plants.
1987: New Waddell Dam construction begins. Santa Rosa Canal receives the first year's water delivery. CAP diversions near 500,000 acre-feet.


1989: About 200 acres of dikes, spoil areas and other lands disturbed during construction of the Tucson Aqueduct in Avra Valley are revegetated.

1990: Water delivery requests exceed CAP's daily capacity of 3,000 cubic feet per second (cfs).

1991: CAWCD retains full authority to operate the CAP canal. Application submitted to the Arizona Department of Water Resources (ADWR) for permits to conduct a two year in-lieu water recharge demonstration project with the Maricopa-Stanfield and Central Arizona Irrigation and Drainage Districts.

1992: A topping out ceremony is held for New Waddell Dam. Tucson celebrates arrival of CAP water.

1993: A CAP restructuring program is approved. Arizona legislature creates Central Arizona Groundwater Replenishment District (CAGRD) to provide a way for developers and water providers to demonstrate an assured water supply under the Assured Water Supply (AWS) Rules.

1994: CAP releases stored Colorado River water from New Waddell Dam and produces clean hydroelectric power. CAP delivers a record amount of water, 785,000 acre-feet.

1996: CAP celebrates record deliveries of more than 1 million acre feet of water. CAWCD celebrates its 25th anniversary. CAPA celebrates its 50th anniversary.
Summary

Central Arizona Project is designed to bring about 1.5 million acre-feet of Colorado River water per year to Pima, Pinal and Maricopa counties. CAP carries water from Lake Havasu near Parker to the southern boundary of the San Xavier Indian Reservation southwest of Tucson. It is a 336-mile long system of aqueducts, tunnels, pumping plants and pipelines and is the largest single resource of renewable water supplies in the state of Arizona.
Facts

- Central Arizona Project is designed to bring about 1.5 million acre-feet of Colorado River water per year to Pima, Pinal and Maricopa counties. CAP carries water from Lake Havasu near Parker to the southern boundary of the San Xavier Indian Reservation southwest of Tucson. It is a 336-mile long system of aqueducts, tunnels, pumping plants and pipelines and is the largest single resource of renewable water supplies in the state of Arizona.

- CAP has more than 80 major customers. Of those, 75% are municipal and industrial users, 13% are irrigation districts, and 12% represent the Indian Community.

- CAP water is generally used in three ways: direct treatment and delivery, treatment and blending with other water sources, and recharge.

- The primary purpose of CAP is to help Arizona conserve its groundwater supplies by importing surface water from the Colorado River, whose supply is renewed yearly by rainfall and snowmelt. CAP also provides flood control, recreation and fish and wildlife benefits.

- Nearly 20 million people are currently drinking Colorado River water every day. Residents of Colorado, Utah, Nevada, California, Arizona and Mexico all rely on the river as one of their primary sources of surface water.

- Millions of agricultural acres are irrigated with Colorado River water. Much of the food that is eaten today is grown with Colorado River water.

- The people living in Arizona’s desert areas are generally using much more groundwater than is being replenished by nature. This groundwater overdraft has made pumping water more expensive, groundwater quality has decreased because impurities “settle” closer to the bottom of the aquifers, and earth fissures and land subsidence have occurred in many areas. Other problems will surface unless we lessen our dependence on groundwater and start using more surface water. CAP is a critical part of Arizona’s water resource planning for the future.
FAQ

Q: What is the length of the canal?
A: 336 miles from Lake Havasu City to Tucson.

Q: Where does the canal end?
A: 14 miles south of Tucson.

Q: How much did the project cost?
A: CAP cost $3.6 billion to construct. According to the contract with the federal government, $1.65 billion has to be repaid.

Q: How wide is the canal?
A: The average size of the aqueduct in its beginning is 80 feet across the top and 24 feet across the bottom and the water is 16.5 feet deep. The oversized section of the canal, which acts as an internal reservoir system, is 160 feet across the top and 80 feet across the bottom.

Q: How thick are the concrete panels in the aqueduct?
A: The concrete is 3.5 inches thick and, in some areas, it is reinforced with steel rebars.

Q: How much water is in the canal?
A: The canal will deliver an average of 1.5 million acre feet of Colorado River water annually. If the canal were operated full-bore year round, the capacity would be approximately 2.2 million acre feet.

Q: How much water is lost through evaporation (or seepage)?
A: Due to the design, constant delivery system and efficient operation methods, our average annual loss is estimated at around seven percent. Evaporation loss is estimated at about three to four percent.

Q: Why isn’t the aqueduct covered?
A: The Bureau of Reclamation (Reclamation) made studies of this possibility and found the cost to be prohibitive. Covering the canal would have quadrupled the $4 billion the project originally cost.

Q: Who gets CAP water?
A: There are three classifications of users: municipal (e.g., cities such as Phoenix, Mesa, and Scottsdale), agricultural (we commonly deliver water to agricultural irrigation districts such as the Maricopa-Stanfield Irrigation District), and Indian communities (12 tribes have allocations).

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Q: How is terrorism prevented?
A: The entire length of the canal is fenced and CAP has a security force that patrols the canal by land and by air. There are alarms at all key structures, pumping plants, turnouts, and check structures. Regular water quality tests also would alert us to contamination.

Q: Why was this project built?
A: The state of Arizona is suffering from a 2.5 million acre foot groundwater overdraft. This means that 2.5 million acre-feet of groundwater are being removed from the ground faster than nature can replace it. This can cause serious structural damage to homes, agricultural lands and industry. In an effort to offset this problem, CAP was authorized to counteract the overdraft by providing an alternative source of surface water.

Q: What if the Colorado River dries up?
A: The Colorado River system will never “dry up.” However, below-average runoff or full-use development could occur. The river is nearly at capacity. If we had a drought tomorrow or next year, there is enough water stored behind dams to provide the needs for all the upper and lower basin states for three to five years depending on their usage. If low flows continued for years, all the users of Colorado River water in the different states would suffer cutbacks.

Q: What about the wildlife (or environment)?
A: Before any feature of the canal was built, there was a massive environmental impact study made to determine the possible impact on wildlife or the environment in that location. The
U.S. Bureau of Reclamation which built the project has a full staff of environmental teams to ensure compliance with state and federal regulations protecting fish, wildlife and native plants.

Prior to CAP construction, environmental teams from the University of Arizona and the Arizona Game and Fish Department were contracted with by Reclamation to perform wildlife studies and determine their migration patterns. The study resulted in the placement of wildlife bridges at strategic locations to ensure wildlife could cross the canal safely and without interference with their natural migration patterns. There also are fences, watering holes, and escape ramps in distribution canals, as well as a roughened concrete finish that allows the smaller animals to climb in and out of the canal. In some instances, such as a 2,157 acre parcel of land near Tucson, property was purchased by CAP to fully protect and preserve the natural habitats of animal and plant life.

Q: Why isn't the canal open for recreation (fishing, swimming)?
A: CAP has been fenced along its entire length to provide security for people and wildlife. The canal is not open for fishing or swimming to ensure maximum safety for animals and humans and to avoid subsequent liability issues. CAP security has to be maintained in compliance with all federal regulations.

Q: When did repayment begin?
A: The Secretary of the Interior declared CAP substantially complete October 1, 1993. This triggered the start of CAP's 50-year repayment period.