

space by 1,714,409 acre feet. Flood flows can now be safely absorbed in the reservoir and released at a rate that does not exceed the capacity of the dams downstream. The extra water stored in the reservoir is used by populations in the metropolitan Phoenix area.

The Modification Work Most of the modification work was performed under three major construction contracts. The companies and their major work accomplishments were:

Torno America constructed a lake tap and associated lined tunnels.

J.A. Jones Construction Company widened the dam and raised its height by 77 feet.

GEC Alstom Electromechanical Corporation modified the 36-megawatt turbine to handle increased head pressures resulting from raising the dam



More than 200 individual concrete placements strengthened and raised Roosevelt Dam

Modification Costs The cost of all activities involved in modification of Roosevelt Dam came to \$424 million. Funding came from Reclamation, Federal Highway Administration, Salt River Project, Central Arizona Water Conservation District, Arizona Department of Transportation, Maricopa County Flood District, and a coalition of six Phoenix-area cities: Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe

The Central Arizona Project (CAP), another major Reclamation project in Arizona, transports Colorado River water via a 336-mile canal into central and southern Arizona. Plan 6 Regulatory Storage features

of the CAP included the increased conservation space behind Roosevelt Dam. This made possible a \$349 million up-front funding contribution which played a key role in securing approval of the Roosevelt project and ensuring the construction schedule was met.

Environmental Mitigation Reclamation worked to reduce negative environmental impacts before construction began by identifying areas for disposing of excess excavated material that would reduce land disturbance and visual impacts. Reclamation also implemented several long-term projects to mitigate (or compensate) for unavoidable construction-related damage to the environment. These include funding the Arizona Bald Eagle Nest Watch program; creating the Tonto Creek Riparian Unit, where areas adjacent to Tonto Creek have been fenced and cattle grazing restricted; and acquisition of habitat suitable for the endangered Southwestern Willow Flycatcher. More information is available at www.usbr.gov/lc/phoenix/user/biology/index.html

Cultural Resources Prior to and during the modification work, Reclamation sponsored archaeological studies to protect cultural resources, as mandated by the National Historic Preservation Act. The studies began in 1989.

The eight-year effort unearthed some startling discoveries, the biggest being Schoolhouse mound, a large, bustling, 300-yard-long complex of 115 rooms. Archaeologists believe the area served as the Tonto Basin's economic center up to the 1400s.

Archaeologists estimate there was room for 200 people at the village. They discovered rooms filled with giant pots and built-in granaries made of woven branches and plastered with mud. These held great quantities of surplus food, primarily corn.

At the construction sites occupied during the original building of Theodore Roosevelt Dam, from 1904 to 1911, archaeologists were able to trace the camp and work lives of the laborers who built the dam. Research and excavation data showed that Apache workers contributed greatly to the success of the project.

Artifacts uncovered during these studies are curated at the Archaeological Research Institute at Arizona State University. Visit their web site at <http://archaeology.la.asu.edu/>