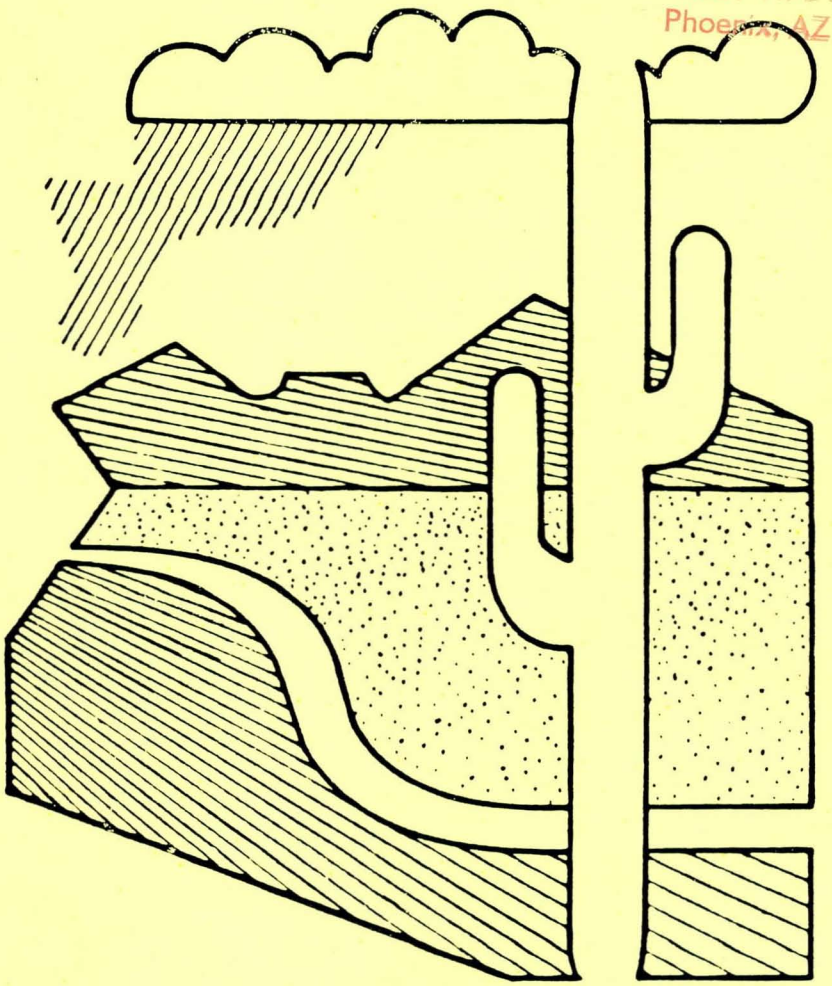
CENTRAL ARIZONA PROJECT
STATUS



ARIZONA PROJECTS OFFICE
PHOENIX, ARIZONA

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION

FUNDING

The Central Arizona Project Fiscal Year 1984 budget is $152.1 million. This funding level will allow the substantial completion of the Granite Reef Aqueduct in 1985 and the Salt-Gila Aqueduct in 1986. It also permits construction starts on Picacho Pumping Plant, Brady Pumping Plant, motor-driven pumping units for Brady, Picacho, and Red Rock Pumping Plants, and the first five miles of the Tucson Aqueduct.

The Central Arizona Project Fiscal Year 1985 request is $132.6 million. This funding level will allow pump testing on the Granite Reef and Salt-Gila Aqueducts to begin. Initial water delivery via the Granite Reef Aqueduct will begin in late 1985. Water deliveries from the Salt-Gila Aqueduct will begin in late 1986. Construction contracts will be awarded on Red Rock Pumping Plant; Tucson Aqueduct Reach 1 Station 402-651, Reach 2, and Reach 3; and the related transmission facilities.

The Non-Indian Distribution System Fiscal Year 1984 budget is $14 million. This funding level is sufficient to allow construction work to proceed expeditiously on the distribution system. The initial construction contract for Harquahala Valley Irrigation District is scheduled for award in April 1984. Two other contracts will be awarded in late fiscal year 1984.

The Non-Indian Distribution System Fiscal Year 1985 budget request is $55 million. This provides sufficient funding to continue distribution system construction work at a rapid rate. It is expected that nine districts will have construction work underway in Fiscal Year 1986. This will insure the availability of substantially completed distribution systems as CAP water becomes available.

The Fiscal Year 1984 and 1985 budgets also contain funding to continue planning on the remaining portions of the project. The remaining features of the project have many controversial and complex political, environmental, and legal issues which must be resolved before actual construction can begin. The fiscal years 1984 and 1985 planning programs are laying the base for construction activities which will continue well into the 1990's. A series of $200 to 250 million annual appropriation requests could result from this planning process. These programs would include simultaneous construction of three dams, portions of the Tucson Aqueduct and portions of the distribution systems.

CONSTRUCTION STATUS

The Central Arizona Project was authorized by the Colorado River Basin Project Act of 1968. Construction of project features began 5 years later, in May 1973. For administrative and construction purposes, the project is divided into several divisions. The status of those divisions under construction follows.

Granite Reef Division. This 190-mile long division includes all project features between the Colorado River and Salt-Gila Pumping Plant, located 22 miles northeast of Phoenix just south of the Salt River. All open canal, tunnels, and siphons on this division are complete. Cleaning and repair activities on the canal are now underway, power and control cables for the various facilities are being installed along the canal, and installation of radial gates in check structures for controlling the flow of water along the canal is nearing completion.

All four pumping plants on the Granite Reef Aqueduct are structurally complete. Currently, pumps, motors and other mechanical and electrical equipment is being installed in the plants. One unit (pump and motor) is installed at Havasu Pumping Plant, with a second motor scheduled for installation in April. At Bouse Hills and Little Harquahala Pumping Plants, the first two relift facilities, two complete units are installed. At Hassayampa Pumping Plant, the last relift facility on the aqueduct and the closest to Phoenix, all 10 pumps have been installed, 5 motors have been installed, and one motor is in place. The switchyard at this plant is also energized, providing a permanent power supply for ongoing construction and testing activities.

Initial pump testing will begin later this year on the Granite Reef Aqueduct. Initial water deliveries from the aqueduct to the city of Phoenix Union Hills Water Treatment Plant are scheduled for December 1985.

Salt-Gila Division. This feature extends from the Salt-Gila Pumping Plant 58 miles in a southerly direction, terminating about 10 miles south of Florence. Thirty-five miles of the aqueduct are essentially complete, with the remaining 23 miles under construction. Reach 1B, a 5.5-mile section through Apache Junction, is 27 percent complete; Reach 4, a 17.1-mile section from the Gila River to the end of the aqueduct, is 71 percent complete.

The Salt-Gila Pumping Plant is also structurally complete. Internally, it is not as far advanced as are the Granite Reef Division pumping plants. Three pumps are in place at the plant, one motor has been set in place, and a second motor is on site but has not yet been placed.

Initial water deliveries from the Salt-Gila Aqueduct to the city of Mesa treatment plant are scheduled to begin in late 1986.

Tucson Division. The last portion of the main water conveyance system is not yet under construction. The aqueduct will extend from the end of the Salt-Gila Aqueduct to the southern boundary of the San Xavier Indian Reservation southwest of Tucson. For planning purposes, the division was divided into two parts, Phase A and Phase B. Routing for Phase A has been determined; Reclamation has announced a proposed action for the route of Phase B, but a final decision on the Phase B route cannot be made prior to filing of a final Environmental Impact Statement in late 1985.

Bids were opened for the initial Phase A feature to be placed under construction, Picacho Pumping Plant, March 21. The apparent low bid of $10.7 million was submitted by Rodgers Construction, Inc., of Albuquerque, New Mexico. Bid opening for the first 5 miles of the Tucson Aqueduct, Phase A, is scheduled for May 2.

Other major contract awards planned for the Tucson Aqueduct this year include: Brady Pumping Plant structure; and pumps, valves, and motors for the Brady, Picacho and Red Rock Pumping Plants.

Operations and Maintenance Complex. A complex that will house Reclamation and Central Arizona Water Conservation District operations and maintenance personnel, and the computer that will operate the project, is being constructed at 7th Street and Pinnacle Peak Road, just northeast of Deer Valley Airport. The building is expected to be ready for occupancy by the 1st of August.

Additional 1984 Contract Awards. In addition to the contracts scheduled for award for the Tucson Aqueduct, other contracts that should be awarded this year include: turnouts for the Salt-Gila Aqueduct; power and control cable installation for the Salt-Gila Aqueduct; wildlife fencing for the Granite Reef Aqueduct, and, maintenance and warehouse facilities for the operations and maintenance complex.

PREFERRED ALTERNATIVE
PLAN 6

In 1968, the Congress of the United States authorized the construction of Orme Dam, or a suitable alternative, as part of the CAP. A draft EIS was prepared for Orme Dam in 1976. Public response to the statement indicated substantial environmental, economic, and social concerns regarding the inundation of riparian habitat and a major portion of the Fort McDowell Indian Reservation and impacts upon habitat of the endangered bald eagle and other species. These and other concerns, including flooding in the Phoenix metropolitan area, caused the Bureau of Reclamation (Bureau) to reassess the proposal.

An Interagency Task Force was established in March 1977 to review alternative methods of achieving flood control for metropolitan Phoenix and regulatory storage of CAP water.

In July 1978, following the Task Force findings, the Bureau initiated the Central Arizona Water Control Study (CAWCS) to develop plans for the solution of flood problems along the Salt and Gila Rivers and for regulatory storage of CAP water.

The CAWCS was conducted in three stages. Stage I, completed in May 1979, identified problems and a wide array of possible solutions and recommended those meriting further study. Stage II, completed in March 1981, developed and analyzed intermediate plans and recommended a number of actions for further detailed study as plans in Stage III. During Stage III, the agency proposed action was selected and refined even further.

In the course of the CAWCS, the importance of dam safety became increasingly significant. Based on the Reclamation Safety of Dams Act of 1978, the Bureau conducted a dam safety study to evaluate the condition of the dams on the Salt and Verde Rivers and develop alternative solutions. This study revealed that the spillways on each of the six existing dams did not meet current design standards for spillway capacity, and that certain modifications were necessary to safely withstand the maximum credible earthquake. As solutions were developed to the dam safety problems, it became apparent that they were interrelated with, and in some cases, identical to the solutions being developed by CAWCS for regulatory storage and flood control. The inadequate spillway capacity of the four dams on the Salt River, for instance, could be resolved by storing the spillway design flood at the uppermost reservoir (Roosevelt Reservoir) if its capacity were increased. Flood control on the Salt River in Phoenix, as well as regulatory storage for CAP, would also be provided by increasing the capacity of Roosevelt Reservoir. In order to facilitate the development of the most cost-effective solution and streamline the decisionmaking process, the two studies were combined. All alternatives developed in the later stages of CAWCS incorporated dam safety solutions.

Identifying and addressing problems and solutions was a continuing process during the studies. It assured that concerns of the public were addressed throughout plan development, evaluation and selection. The identified problems, needs, and issues centered on flood control, water supply, and related environmental and socioeconomic factors such as water quality, recreation, wildlife, cultural resources, water rights, and relocation of people.

In November 1981, the Secretary of the Interior selected Plan 6 of the CAWCS to be identified in the draft Environmental Impact Statement because of its strong local support, because it met project objectives, and because it did not have severe social or environmental impacts.

The draft EIS was filed in April 1983, and on February 10, 1984, the Final EIS was filed. Six plans plus a "No-Action" plan were developed and displayed in the final EIS, which to varying degrees addressed the problems and needs of the area. Of those plans, Plan 6 developed the greatest net economic development benefits.

Description

Plan 6 would be constructed to provide regulatory storage and additional water supply for the Central Arizona Project (CAP); to provide flood control for the Salt, Verde, Agua Fria, and Gila Rivers; and to provide a partial solution to the dam safety problems of existing Bureau of Reclamation dams on the Salt and Verde Rivers.

The plan would consist of constructing New Waddell Dam for regulatory storage, flood control, and recreation. This dam would be located on the Agua Fria River, immediately downstream of the existing Waddell Dam. A 4.7 mile long reversible canal would connect New Waddell Reservoir with the CAP aqueduct. Colorado River water would flow through this canal and be pumped into the reservoir for distribution to CAP users during periods of peak demand.

Cliff Dam and Modified Roosevelt Dam would be constructed for flood control, additional water conservation, recreation, and dam safety. Cliff Dam would be located on the Verde River between Bartlett and Horseshoe Dams. As part of this plan, Horseshoe Dam would be breached and its storage capacity relocated to Cliff Reservoir. The existing Theodore Roosevelt Dam, located on the Salt River, would be modified to solve dam safety problems. Stewart Mountain Dam, also located on the Salt River, would be modified as part of the plan to ensure its safety.

With the plan, the average annual increase in yield to the CAP would be 137,600 acre-feet. Sufficient flood control would be provided to control the 200-year flood event on the Salt River to 92,000 cfs measured at Sky Harbor International Airport, and on the Agua Fria River to 25,000 cfs measured at the confluence of the New River. It would reduce the 100-year event to 55,000 cfs on the Salt River and 18,000 cfs on the Agua Fria River measured at the same locations. Conceptual recreation plans include additional sites at New Waddell, Cliff, and Modified Roosevelt. It also includes mitigation measures for biological, social, and cultural resources.

Physical Facilities

New Waddell Dam and Reservoir. New Waddell Dam with a storage capacity of 892,000 acre-feet would be located approximately 1/4 mile downstream from the existing Waddell Dam within the Lake Pleasant Regional Park. All lands, necessary easements, and rights-of-way for this feature would be acquired by the Federal government.

New Waddell Dam would be a 400-foot-high zoned rockfill structure, with a crest length of 4,900 feet and an ungated spillway with a capacity of 330,000 cfs. Discharges from the spillway would be to the Morgan City Wash which flows into the Agua Fria River about 3/4 mile downstream of the new dam location. Flood control for the Agua Fria River would be provided through the operation of the conservation pool.

Two water supply outlet works would be part of the dam. Maricopa County Municipal Water Conservation District #1 (MCMWCD#1) presently uses water storage in Lake Pleasant. One 600 cfs service outlet would be required for MCMWCD#1. The other outlet, with a capacity of 3,000 cfs, would be required for CAP uses. This outlet would release water into a 4.7-mile reversible canal connecting the Granite Reef Aqueduct to the base of the dam.

The canal would be located on the east side of the Aqua Fria River. A pumping/generating facility with a pumping capacity of 3,000 cfs and generating capacity of 35 megawatts would be located near the left abutment of the dam. Approximately 1.5 miles of transmission lines would be required to connect these facilities to existing transmission lines.

Cliff Dam and Reservoir. Cliff Dam and Reservoir with a storage capacity of 793,740 acre-feet would be located on the Verde River about 6 miles downstream of the existing Horseshoe Dam.

Cliff Dam would be a 335-foot-high earthfill structure with a crest length of 4,100 feet and would include a 25,000 cfs flood outlet and a 2,200 cfs water supply outlet. All releases would be to the Verde River channel. A 150,000 cfs capacity spillway would be located on the east side of the left abutment.

Modified Roosevelt Dam and Reservoir. The existing dam and reservoir are located wholly within the Tonto National Forest about 76 miles northeast of Phoenix and 30 miles northwest of Globe, Arizona.

Theodore Roosevelt Dam modification would consist of raising the existing structure to elevation 2210. It would require a portion of the existing dam be removed and the placement of new concrete to elevation 2210. This would increase the height of the existing dam 70 feet. The existing spillways, outlet works, and power outlet works would also be replaced. The power plant will remain at the downstream toe of the dam.

Modified Stewart Mountain Dam. Dam safety problems at Stewart Mountain Dam necessitate the existing dam be modified. Modifications include replacement of the top 40 feet of the arch section, construction of an auxiliary spillway, and rehabilitation of the right thrust block and the right and left gravity sections. These modifications are necessary to correct hydrologic problems caused by the occurrence of the inflow design flood (IDF) and structural problems under maximum credible earthquake loading.

The auxiliary spillway, located on the right abutment of the dam, would have a crest elevation of 1,496 feet and would be a gated concrete structure with a capacity of 87,000 cfs. The total capacity of existing and auxiliary spillways combined would be 210,000 cfs.

The additional information on the structures and storage allocation is listed below:

Dams	New Waddell (Rockfill)	Modified Roosevelt (Concrete)	Cliff (Earth)	Modified Stewart Mountain (Concrete)
Crest Elevation (feet)	1,735	2,210	2,152	1,535
Height Above Streambed (feet)	400	340	335	116
Dam Volume (cubic yards)	16,000,000	240,000	16,500,000	130,000
Spillway Capacity (cfs)	330,000	99,500	148,700	210,000
Reversible Canal				
Capacity (cfs)	3,000	—	—	—
Length (miles)	5	—	—	—
Storage Allocation (acre-feet)				
Dead	600	25,500	3,555	—
Inactive	5,000	308,300	6,445	—
Replacement	157,600	1,275,000	131,427	59,800
Regulatory Storage	660,000	—	201,313	—
New Conservation	—	557,000	451,000	—
Flood Control	—			—

NOTE: The storage data allows for projected 100-year sediment deposition.

Operation

The operation of Plan 6 provides an average annual increase to the CAP of 137,600 acre-feet.

New Waddell Dam and Reservoir. New Waddell Dam and Reservoir would include 157,600 acre-feet of replacement space. The plan would not impose or require changes in the manner in which the existing reservoir has historically been operated. All natural inflows to the reservoir from the Agua Fria River would be credited to and available for use by MCMWCD#1 under its existing water right until the replacement space is filled.

The release of water for MCMWCD#1 would be through an outlet to Lower Lake Pleasant. The water would then be available for diversion into the existing Beardsley Canal.

The remaining conservation space (660,000 acre-feet) would be operated to allow maximum pumping of Colorado River water through the Granite Reef Aqueduct during winter months when power requirements in the southwest are at a minimum. The capability to control the timing of CAP power requirements will allow other utilities to purchase CAP (Navajo Generating Station) power during summer months. New Waddell Dam would be connected to the Granite Reef Aqueduct by a 4.7 mile long 3,000 cfs capacity reversible

canal. Diversions from the aqueduct would be made to the canal during the winter months (November through April). This water would then be pumped into the reservoir. The amount of the diversion would vary and equal the difference between the downstream demand at the time of the diversion and the aqueduct capacity.

During the summer months (May through October), water would be released through an outlet to the reversible canal and back to the Granite Reef Aqueduct. A generator would be operated and power produced during the release operations. The actual amount of water released would depend on system demands during the period.

Although no exclusive flood control space would be provided in the reservoir, flood control for the Agua Fria River below the dam would be provided by restricting the reservoir surface during months of high flood potential. The reservoir surface would be restricted to elevation of 1694 during April, May, and June. Operating the reservoir in this manner would reduce the 200-year flood, currently 120,000 cfs, to 25,000 cfs and the 100-year flood, currently 90,000 cfs, to 18,000 cfs as measured above the confluence of the Agua Fria and New Rivers.

Spillway operations would begin when the reservoir's controllable storage is completely full and outlets are operating at capacity. This would occur at elevation 1702.

Cliff Dam and Reservoir. Operations of Cliff Dam and Reservoir would be similar to the current operation of Horseshoe Dam except a flood control operation would be added. The conservation pool in the Cliff Reservoir would normally be the fullest in the late winter or early spring, and would be drafted throughout the spring and summer months to bring the reservoir at its lowest storage by late summer.

The water in the CAP portion of the conservation storage would be held for the CAP until CAP demands required their release. There would be no direct connection between the CAP aqueduct and Cliff Reservoir. CAP water delivered from Cliff Reservoir would be released to the Verde River for delivery to CAP users through the SRP canal system. Cliff Dam and Reservoir on the Verde River together with Modified Roosevelt Dam on the Salt River would be operated as a combined coordinated flood control reservoir system. Flood control releases from the individual reservoirs would be made on the basis of monitored inflow into each reservoir. The existing available flood control space would be constantly evaluated in an effort to maintain a balanced flood control space posture. Releases from the Salt and Verde storage systems would therefore be made so as to not exceed a combined inflow of 50,000 cfs at the Salt and Verde River's confluence.

Modified Roosevelt Dam and Reservoir. Operations for the modified dam would continue in a manner similar to the existing structure except for the addition of a flood control operation.

The enlarged reservoir would be operated to conserve the flows of the Salt River and Tonto Creek. Under normal operations, the conservation pool in the Modified Roosevelt Lake would normally be the fullest in the late winter or early spring, and would be at its lowest storage by late summer. Excess water credited to CAP would be delivered through the same mechanism as Cliff Dam and Reservoir.

The Modified Roosevelt Dam on the Salt River together with the proposed Cliff Dam on the Verde River would be operated as a combined coordinated flood control reservoir system. Together, the two dams would reduce flood-flows, measured at Phoenix Sky Harbor International Airport as shown:

	Present	Plan 6
100-Year Flood	215,000 cfs	55,000 cfs
200-Year Flood	275,000 cfs	92,000 cfs

DESCRIPTION OF ADDITIONAL SAFETY OF DAMS MEASURES

In addition to the features of Plan 6, the foundation and abutments of Horse Mesa and Morman Flat Dams, located on the Salt River, and Barlett Dam, located on the Verde River, would be treated to correct possible instability.

The operation of Horse Mesa, Mormon Flat, Stewart Mountain, and Bartlett Dams would not change.

The combination of the Plan 6 features and the SOD additions would alleviate safety problems at the existing Salt and Verde River dams.

ECONOMIC AND FINANCIAL COST

The total construction cost of the proposed action is $1,035,500,000 plus $17,500,000 for additional SOD measures. This cost includes:

New Waddell Dam	$ 417,600,000
Cliff Dam	346,200,000
Modified Roosevelt Dam	231,500,000
Modified Stewart Mountain Dam	40,200,000
Total Plan 6 Cost	$1,035,500,000
Horse Mesa Dam	$ 5,500,000
Mormon Flat Dam	5,500,000
Bartlett Dam	6,500,000
Total of Additional SOD Measures	$ 17,500,000

The annual cost, including interest during construction (IDC) of Plan 6 is $98,700,000.

The annual operation, maintenance, and replacement costs associated with this action are estimated at $4,800,000.

Benefits

The total annual benefits of the proposed action are $121,500,000. These benefits by function are:

Function	Benefits
Irrigation	$ 11,200,000
Indian Irrigation	500,000
Municipal & Industrial Water Supply	1,700,000
Flood Control	27,500,000
Power	34,800,000
Recreation	7,300,000
Safety of Dams	38,500,000
Total CAP Benefits	$ 121,500,000

The allocated construction cost between CAP and SOD is $782,400,000 and $253,100,000, respectively. The additional SOD measures total $17,500,000 resulting in a total SOD requirement of $270,600,000.

ENVIRONMENTAL AND SOCIAL IMPACTS

Impacts to biological resources would result primarily from dam construction, reservoir inundation, and flow releases from reservoirs. The environmental processes would be influenced by construction and operation activities. The alteration of environmental processes would result in a modification of the resource condition, both in amount and quality.

Adverse construction impacts would occur on a project-wide basis. These impacts relate to the actual destruction of habitat caused by the creation of project facilities, clearing vegetation for haul and access roads, borrow areas, conservation pool clearing, and work and storage yards. Additional impacts would occur from the presence of the construction forces and general construction activities. Noise and disturbances created by the movement of equipment, material hauling, blasting, concrete batch plant operations, aggregrate excavation, and the like would have the effect of driving wildlife from the construction areas to areas of little or no disturbance. The effect of this habitat destruction and eviction on resident wildlife would be the immediate reduction in densities and resource utilization in the construction areas. Nearby populations would be affected by the increase in competition for limited resources and a reduction in breeding potential as the displaced populations immigrate into the undisturbed habitats surrounding the site areas. These types of impacts would be relatively short term.

Long term impacts would result from the placement of permanent structures and facilities, human activity around the facilities and recreation sites, and the actual operation of the dams with their fluctuating storage levels and release schedules. The adverse impacts of changed operations would not

occur at Modified Stewart Mountain Reservoir since it would continue to operate as in the past. Dam operation would cause significant adverse impacts at New Waddell Dam and Reservoir but Cliff Dam and Reservoir may actually enjoy an improvement over the present operation of Horseshoe Reservoir.

Human activities in and around the project facilities would have the same effect as described above; but the temporal nature of these impacts would be long term. The most significant effect of these activities would be from the six- to -eight-fold increase in recreation at Cliff, Modified Roosevelt, and New Waddell Dams and Reservoirs.

The greatest impact from the operation of Cliff, Modified Roosevelt, and New Waddell would be the loss of habitat through permanent and periodic inundation. This would affect all terrestrial and riverine biotic communities and constitute long term impact over existing and future conditions. Impacts from the additional SOD measures are considered insignificant.

The estimated 3,300 prehistoric and historic sites within the area are subject to various types of impacts. In general, the impacts are expected to be adverse rather than beneficial, concentrated rather than dispersed, caused rather than induced (although induced recreational impacts could be substantial), and of a long-term nature because the resources are nonrenewable and the effects are permanent. Many of the impacts would occur over the short term during the first few years of the project; but some flooding impacts would be delayed.

About 38 families living around Roosevelt Lake could be required to relocate. Full-time residents who would be required to relocate would be provided Forest Service land bordering Roosevelt Lake Estates for resettlement. Monetary compensation would also be provided to relocatees to cover the cost of relocation.

MITIGATION MEASURES

Mitigation measures to such biological resources as riparian/wetland communities, and reservoir aquatic communities, and appropriate measures for endangered species were developed. They include planting cottonwood, willow, and mesquite in the exposed bed of the drained Horseshoe Reservoir and insuring development of this habitat by eliminating grazing and off-road vehicle use. Seven miles of riverbed at Horseshoe Reservoir would be reclaimed. Fish barriers would be placed on streams containing native fish populations to keep them separated from the reservoir fish. The drawdown rate at New Waddell Reservoir would be reduced and minimum pools added to New Waddell and Cliff Reservoirs. Conservation pool clearing in the proposed reservoirs would be held to a minimum. Roosevelt Waterfowl Management Area recreation sites would be closed in the winter and water would be provided to grow winter food crops for the waterfowl.

Mitigation measures for the cultural resources would preserve the significant values to an estimated 3,300 prehistoric and historic sites. These measures include implementing data recovery and research studies of sites

directly affected by the plan. A program to monitor, manage, and study those archeological and historical sites in less directly affected areas is also planned along with a visitors' center at Roosevelt Lake for public distribution and interpretation of study results.

The estimated cost of the mitigation program is $20,427,000.

As part of the environmental analysis, the U.S. Fish and Wildlife Service provided a Coordination Act Report and issued as a Biological Opinion under the Endangered Species Act. The Coordination Act Report recommended mitigation measures similar to those in the mitigation plan. Their biological opinion was that Plan 6 would jeopardize the bald eagle unless certain reasonable and prudent alternative measures were taken. These measures have been incorporated into the plan.

PUBLIC COMMENT

Strong public support for Plan 6 was key to its selection as the proposed action. This was evidenced by the support of the Governor's Advisory Committee and the testimony of responsible public officials at public hearings. However, it should be noted that there is a very vocal group, primarily associated with the Maricopa Audubon Society, expressing concerns over the construction of Cliff Dam. These concerns are based on their contention that flood control and SOD problems are overstated and that Cliff Dam would have significant adverse impact on the bald eagle.

REGULATORY STORAGE

Need for Regulatory Storage

Construction of New Waddell Dam as the regulatory storage unit for CAP water would improve the operating flexibility and efficiency of the CAP system and would allow the importation of greater quantities of Colorado River water in years when it is available. Without regulatory storage capacity, the CAP aqueduct system could be operated only in direct response to water demand. The damand for water is greatest during the summer and during the daytime hours. If regulatory storage space is available, water could be pumped and stored, irrespective of demand, during off-peak periods for delivery during peak periods.

A major advantage of flexible operation of the CAP system is more efficient energy management. With regulatory storage, water could be pumped during off-peak periods (for example, at night or during the winter) when energy is less valuable. The benefit resulting from this energy management would be the ability to use surplus power not needed for CAP pumping to meet peak loads of other power producers, such as utility companies.

Regulatory storage would increase the efficiency (increase water yield) of the CAP system during years when the local rivers have surpluses or the Colorado River supplies are above normal, and during possible interruptions in the system such as power outages.

In the event of the latter occurrences, water from New Waddell Reservoir could continue to be delivered to at least part of the system. During the supply surpluses, regulatory storage would allow for storage and use of water which would otherwise be spilled and wasted.

Increased Water Supply

New Waddell Dam and Reservoir works in two ways to increase project water deliveries. First, maximum utilization can be made of Arizona's entitlement to Colorado River water by providing an in-system storage facility in which temporary or long-term surplus water supplies can be stored for later use. Under present Colorado River flood control criteria, surplus waters must be released from Lake Mead in an orderly fashion to achieve the desired levels of downstream flood protection. These surplus releases would be available for diversion by the CAP and others. Without regulatory storage, the CAP can take no advantage of surplus Colorado River water. Overall project supplies can be increased by an average of approximately 10% with New Waddell, and up to 45% in any given Colorado River surplus year.

Second, New Waddell can increase project supplies by conserving floodflows from the Agua Fria River. While floods on the Agua Fria River which cause spills from the existing Lake Pleasant have been infrequent, these events can produce up to 100,000 to 200,000 acre-feet in any given year. The long-term average contribution to project supplies from this source is small as compared to the increases garnered from the Colorado River, but

maximum depth of 15 feet. Loss of spillway radial gates and damage to the fixed wheel gate on the tunnel spillway can be expected. Also, the powerhouse would be destroyed. Again, the arch portion of the dam is judged to be capable of withstanding the overtopping without breaching. However, the dam would be considered to have failed because all control of water would be lost.

Outflows from Horse Mesa Dam combined with intervening flows would result in Mormon Flat Dam being overtopped for about 68 hours, attaining a maximum depth of 27 feet. Loss of the spillway chute, fixed wheel gates, and spillway gate superstructure can be expected. The powerhouse would be destroyed. Damage to the outlet works discharge valves and controls would be extensive. The arch dam structure and thrust block are judged to be capable of withstanding the overtopping without breaching. However, the dam would be considered to have failed because all control of water would be lost.

Outflows from Mormon Flat Dam combined with intervening flows would result in Stewart Mountain Dam being overtopped for about 81 hours to a maximum depth of 14 feet. Stewart Mountain Dam is the only dam on the Salt River where the arch portion of the dam would fail due to overtopping. The gravity sections would slide or be undercut and the thrust blocks would be undercut. The spillway gates and chute would fail and the powerhouse would be destroyed. A relatively slow, uncontrolled release of most of the reservoir would result in an estimated peak discharge immediately downstream from the dam of 415,000 ft^3/s with a volume of 2.7 million acre-feet. This peak would reach Tempe, located 27 miles downstream, in less than 10 hours. Should the dam fail rapidly, the peak downstream discharge could be as high as 820,000 ft^3/s and reach Tempe in less than 5 hours (results from Reclamation's inundation mapping studies).

The determination of whether the SRP dams would fail or not if overtopped by the magnitudes and for the durations described above requires many engineering judgments and involves many unknowns. Therefore, Reclamation evaluated, through its inundation mapping studies, the worst-case peak discharge that would result if all four dams on the Salt River were to breach from PMF overtopping. The results indicate that the worst-case peak discharge immediately downstream of Stewart Mountain would be approximately 5 million ft^3/s. Catastrophic loss of human lives and damage to property would result through the Phoenix metropolitan area.

Should a PMF magnitude event occur on the Verde River above Horseshoe Dam, about 14 feet of overtopping would occur if the dam is assumed not to breach. However, the dam, an embankment structure, would breach long before this amount of overtopping, releasing the entire reservoir. The peak discharge past the Horseshoe damsite would be approximately 776,000 ft^3/s.

The outflows from a Horseshoe Dam failure, combined with intervening flows, would result in Bartlett Dam being overtopped for about 36 hours, attaining a maximum depth of 23 feet if the dam is assumed not to breach. The dam, however, would breach due to erosion of the foundation supporting the arch barrels and buttresses. The spillway gates, superstructure, and chute would also fail. The entire reservoir would be released resulting in an

estimated peak discharge immediately downstream from the dam of 2,700,000 ft^3/s (results from Reclamation's inundation mapping studies). This peak would reach Tempe in less than 4 hours. Assuming that Bartlett Dam would not fail still would result in a peak discharge of approximately 775,000 ft^3/s immediately downstream of the dam. Catastrophic loss of human lives and damage to property would occur downstream in either case.

Seismic Hazards

In addition to the threat of failure during major floods, the SRP dams would also fail from major earthquakes. All of the SRP dams require either structural or foundation modifications to be capable of accommodating an MCE without catastrophic release of reservoir storage.

Many earthquake failure scenarios are possible for the SRP dams. The most plausible scenario would be failure of Stewart Mountain Dam from an MCE. This scenario may also be the most hazardous to lives because of the very short time available for evacuation. In contrast to PMF failure scenarios where local authorities would probably be alerted about emergency conditions at any of the SRP dams long before possible failure might occur, no accurate predictions of a major earthquake can be expected.

If a major earthquake or MCE were to occur near Stewart Mountain Dam, the resulting loads would overstress the gravity sections, right thrust block, and the tope 40 feet of the arch. The unbonded construction joints would permit blocks to displace and rotate causing the dam to fail and release the reservoir waters. Inundation mapping studies show that a peak discharge immediately downstream of the dam would be approximately 1.1 million ft^3/s. Although the flood peak would attenuate rapidly, a peak flow of approximately 240,000 ft^3/s would reach Tempe in less than 6 hours. The consequences would be catastrophic to property and especially to people if the dam failure were to occur during the peak recreation season when thousands of people would be using Saguaro Lake and the Salt River below the dam.

Presently Endangered People and Property

Located within the floodplain of the Salt River downstream of the SRP dams are the cities of Mesa, Tempe, Scottsdale, and Phoenix, as well as many smaller municipalities. The total population in the Phoenix metropolitan area is estimated to be over 1.6 million.

Because of the many dam failure modes and combinations possible, Reclamation studied 13 scenarios in the preparation of inundation maps. These scenarios were grouped into 4 inundation boundaries ranging from relatively minor floods to the worst-case flood. The minor flood boundary represents the Stewart Mountain Dam failure scenario described above. The worst-case flood boundary was developed from a scenario in which PMF flows cause the four dams on the Salt River to fail by overtopping.

Approximately 250,000 people live within the area that could potentially be inundated by failure of the SRP dams in the worst-case scenario. Highly

populated areas are within 25 miles downstream of Stewart Mountain Dam. The threat to lives, however, may not be greatest in the worst-case scenario. Even though total volume and peak flows would be considerably less than the worst-case scenario, a Stewart Mountain Dam failure from a major seismic event, if it occurred during the summer, could endanger many thousands of recreationists using the lakes and rivers as well as residents in the potential inundation area downstream. It is very unlikely that all of these people would have adequate warning time to safely evacuate.

Under the worst-case failure scenario, recreational activity would be limited by the adverse weather conditions associated with the probable maximum rainstorm. Another factor that may reduce the potential for loss of life is the many hours of advance warning that should be available before any of the dams even begin to be overtopped and long before failures may occur. Because Phoenix has implemented an advance flood warning system and has emergency preparedness and evacuation plans, it can be expected that the public would be well informed of the potential dangers and that evacuations would begin many hours before any dams may fail. However, considering that as many as 250,000 people may have to be evacuated, that some people tend to ignore warnings or in other ways accept risks that result in loss of life, the potential for loss of life would still exist.

Land within the area inundated under the worst-case dam failure scenario, categorized by usage, is summarized below:

Land Use	Area (acres)
Residential	14,700
Commercial	2,600
Public	2,800
Industrial	6,100
Agricultural	107,000
Total	133,200

Property that would be directly affected by the flood flows include Sky Harbor International Airport, Litchfield-Phoenix Municipal Airport, Interstate Highways 10 and 17, other highways and roads, railroads, all Salt River bridges, eleven major hospitals, shopping malls, many industrial and commercial centers, the Arizona State Capitol, homes, churches, 73 schools, five colleges and one university, water and sewage treatment facilities, museums and zoo, farmsteads, canals, irrigation pumps and laterals, communications switching stations, SRP transmission facilities, the Ocotillo Generating Station, and numerous other improvements.

Proposed Action

The proposed action, implementing the SOD portions of Plan 6 (modifying Theodore Roosevelt and Stewart Mountain Dams, and constructing Cliff Dam) and performing SOD modifications to Horse Mesa, Mormon Flat, and Bartlett Dams, will ensure the safety of the SRP dams and will provide other benefits. Flood control through metropolitan Phoenix will be achieved

through combined operation of the modified Salt and Verde River reservoirs such that a 200-year flood event in the upstream area would result in discharges through Phoenix of 92,000 ft^3/s. This is significantly less than the currently established 100-year discharges on the Salt River through Phoenix. Additional conservation storage and new recreational opportunities would also be available at Theodore Roosevelt and Cliff Dams. The threat to people and property from possible dam failures will be substantially reduced. The purposes of the proposed action are shown in Table 1.

By limiting spillway releases from Theodore Roosevelt and Cliff Dams to a peak discharge that will not exceed the spillway capacity of the downstream dams, the modifications to the downstream dams can be limited to foundation strengthening necessary to make the dams stable under earthquake loadings. Stewart Mountain Dam, however, would still require additional spillway capacity to accommodate the summer thunderstorm IDF and would require major structural and foundation modifications to accommodate the MCE.

Plan 6 also proposes the construction of New Waddell Dam on the Agua Fria River west of Phoenix. This proposed Plan 6 feature would not improve the safety of the SRP dams and would not require any SOD funding.

By implementing the multi-purpose proposed action, the safety of the SRP dams will be ensured and will require less SOD funds than the least-cost single-purpose SOD corrective action. Other benefits will also be derived, such as flood control and increased conservation storage. The cost of the SOD-only corrective action is $476.8 million at the January 1983 price level, while the cost allocated to SOD of the proposed action is $270.6 million. Thus, a savings of $206.2 million to the SOD program can be realized by implementing the multi-purpose proposed action.

SAFETY OF DAMS

Introduction

The "Reclamation Safety of Dams act of 1978" (P. L. 95-578), signed by the President on November 2, 1978, authorizes the Secretary of the Interior, with the concurrence of Congress, to perform necessary modifications at existing Federal reclamation dams for Safety of Dams purposes. All of the costs for the proposed work at the SRP dams will be nonreimbursable as provided for in the act for modifications required by new hydrologic and seismic data.

Responsibility of the Federal Government

The SRP dams are owned by the United States and are currently operated by the Salt River Valley Water User's Association and the Salt River Project Agricultural Improvement and Power District under two contracts with the United States. Reclamation is responsible for the safety of the dams and for initiating actions necessary to ensure their safe operation.

Flood Hazards

Floods large enough to cause overtopping of the most upstream SRP dams on both the Salt and Verde Rivers could occur in any year. Such overtopping would lead to the failure of at least one dam above the Phoenix area with catastrophic consequences to people and property. Major floods experienced in the late 1970's and early 1980's caused all the spillways to flow at near maximum capacities and demonstrated the reality of the flood danger. Both Stewart Mountain and Bartlett Dams have spillway capacities less than their respective upstream dams.

The previous design flood peak for Theordore Roosevelt Dam on the Salt River is now estimated to have a return period of about 100 years. The previous design flood peak on the Verde River is now estimated to have a return period of about 200 years. Floods greater than these events would lead to overtopping and failure of Stewart Mountain and Bartlett Dams. Floods approaching the PMF would lead to failure of all six SRP dams.

Should a PMF magnitude event occur on the Salt River above Theodore Roosevelt Dam, the dam would be overtopped for about 56 hours with overtopping reaching a maximum depth of 15 feet. The spillway radial gates and crest structure would fail due to a combination of static load, vibration, damaging flow velocities, and trash accumulation. The outlet works would become inoperative due to vibration and impingement of overtopping flows on operating structures. The powerhouse would be destroyed. The arch portion of the dam is judged to be capable of withstanding the overtopping without breaching. However, the dam would be considered to have failed because all control of water would be lost.

Outflows from Theodore Roosevelt Dam combined with intervening flows would result in Horse Mesa Dam being overtopped for about 65 hours, attaining a

maximum depth of 15 feet. Loss of spillway radial gates and damage to the fixed wheel gate on the tunnel spillway can be expected. Also, the powerhouse would be destroyed. Again, the arch portion of the dam is judged to be capable of withstanding the overtopping without breaching. However, the dam would be considered to have failed because all control of water would be lost.

Outflows from Horse Mesa Dam combined with intervening flows would result in Mormon Flat Dam being overtopped for about 68 hours, attaining a maximum depth of 27 feet. Loss of the spillway chute, fixed wheel gates, and spillway gate superstructure can be expected. The powerhouse would be destroyed. Damage to the outlet works discharge valves and controls would be extensive. The arch dam structure and thrust block are judged to be capable of withstanding the overtopping without breaching. However, the dam would be considered to have failed because all control of water would be lost.

Outflows from Mormon Flat Dam combined with intervening flows would result in Stewart Mountain Dam being overtopped for about 81 hours to a maximum depth of 14 feet. Stewart Mountain Dam is the only dam on the Salt River where the arch portion of the dam would fail due to overtopping. The gravity sections would slide or be undercut and the thrust blocks would be undercut. The spillway gates and chute would fail and the powerhouse would be destroyed. A relatively slow, uncontrolled release of most of the reservoir would result in an estimated peak discharge immediately downstream from the dam of 415,000 ft^3/s with a volume of 2.7 million acre-feet. This peak would reach Tempe, located 27 miles downstream, in less than 10 hours. Should the dam fail rapidly, the peak downstream discharge could be as high as 820,000 ft^3/s and reach Tempe in less than 5 hours (results from Reclamation's inundation mapping studies).

The determination of whether the SRP dams would fail or not if overtopped by the magnitudes and for the durations described above requires many engineering judgments and involves many unknowns. Therefore, Reclamation evaluated, through its inundation mapping studies, the worst-case peak discharge that would result if all four dams on the Salt River were to breach from PMF overtopping. The results indicate that the worst-case peak discharge immediately downstream of Stewart Mountain would be approximately 5 million ft^3/s. Catastrophic loss of human lives and damage to property would result through the Phoenix metropolitan area.

Should a PMF magnitude event occur on the Verde River above Horseshoe Dam, about 14 feet of overtopping would occur if the dam is assumed not to breach. However, the dam, an embankment structure, would breach long before this amount of overtopping, releasing the entire reservoir. The peak discharge past the Horseshoe damsite would be approximately 776,000 ft^3/s.

The outflows from a Horseshoe Dam failure, combined with intervening flows, would result in Bartlett Dam being overtopped for about 36 hours, attaining a maximum depth of 23 feet if the dam is assumed not to breach. The dam, however, would breach due to erosion of the foundation supporting the arch barrels and buttresses. The spillway gates, superstructure, and chute would also fail. The entire reservoir would be released resulting in an

estimated peak discharge immediately downstream from the dam of 2,700,000 ft^3/s (results from Reclamation's inundation mapping studies). This peak would reach Tempe in less than 4 hours. Assuming that Bartlett Dam would not fail still would result in a peak discharge of approximately 775,000 ft^3/s immediately downstream of the dam. Catastrophic loss of human lives and damage to property would occur downstream in either case.

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TUCSON AQUEDUCT, PHASE B

Background

Phase A of the Tucson Aqueduct will deliver water to users in Pinal and northern Pima Counties. Phase B will deliver water to users in Pima County, primarily in the Tucson area. In 1980, planning for the Tucson Aqueduct was divided into the two phases so that construction could proceed on the Phase A portion while planning activities on Phase B continued. The planning emphasis for Phase A was on the selection of the alinement for the aqueduct. The final environmental statement for Phase A has been filed with the Environmental Protection Agency and construction on the first features of Phase A will begin soon. For the Phase B portion the issues addressed in the planning activities were: the aqueduct alinement; what storage requirements would be necessary; and, what is the appropriate location to terminate the aqueduct. The planning activities for Phase B to address these issues began in May, 1981.

Status of Planning

Between May and November 1981, several alternatives for Phase B were studied and were presented for public review at public meetings in the Tucson area in November 1981. These alternatives were then reduced to two alinement alternatives: one on the east side of the Tucson Mountains, and one on the west side of the Tucson Mountains in the Avra Valley. In 1982, the Southern Arizona Water Resources Association (SAWARA), a non-profit water users group in Pima County, was asked by Reclamation to help establish a means whereby local consensus could be reached on the issues of alinement, terminus, and storage. In April 1983, SAWARA'S Committee on Alignment, Terminus, and Storage submitted their recommendations to

Reclamation on these issues. This group recommended an alinement on the west side of the Tucson Mountains through the Avra Valley, a terminus at the point where the City of Tucson will take CAP water and another terminus at the south boundary of the San Xavier Indian Reservation, and also recommended that storage not be included as part of Phase B at this time but be reconsidered as the reliance on CAP water grows in the Tucson area and as a history of CAP operation becomes available.

In October 1983, Reclamation announced that the west side aqueduct alinement would be the proposed action in the draft environmental impact statement. As proposed, the west side alinement would be mostly open canal, which has raised concerns among the residents in the Avra Valley. The concerns have mainly been over the social and environmental impacts of the open canal. In response to these concerns Reclamation will include two additional alternatives in the draft environmental impact statement that include more pipeline and less open canal for the west side aqueduct alinement.

Future Activities

Reclamation is presently preparing a draft environmental impact statement which is scheduled to be filed with the Environmental Protection Agency in October 1984 and the final in August 1985. As part of the preparation of the impact statement, an environmental mitigation plan is being prepared and meetings are being held with property owners in the Avra Valley to explain property aquisition procedures and receive input on the location, size, and configuration of project facilities.

The earliest construction could begin on Phase B features would be in late 1986(fiscal year 1987).

Water deliveries to the Tucson area are scheduled to begin in 1991.

STATUS OF PLANNING-INDIAN DISTRIBUTION DIVISION

The Colorado River Basin Project Act of 1968 authorized the Bureau of Reclamation to construct, as part of the Central Arizona Project, Indian distribution systems in Arizona. Originally, project water was allocated for only five tribes. In August 1980, the number of Indian communities allocated CAP water was increased to 12 by then Interior Secretary Andrus. On December 11, 1980, Andrus signed water delivery contracts with eleven of the twelve communities. The Gila River Indian Community did not, and has not, signed a water delivery contract. On March 21, 1983, the Indian communities were allocated 309,828 acre-feet annually of Central Arizona Project water. Status of this division follows.

Salt River Pima-Maricopa

A contract to construct the turnout has been awarded. Construction is scheduled to begin in November 1984 with completion expected in March 1985. Additional planning has been delayed because information has not been received from the tribe in order to complete system design. Information needs include: which lands will receive CAP water, and in what quantities; and, should the system include capacity for exchanges?

Gila River

This Community is the only one that has not yet signed a contract for CAP water. Contract negotiations were reopened in 1983 and are progressing. The major issue standing in the way of signing the contract involves the delivery of effluent to the Community in lieu of CAP water. An information program is being conducted to help the Community understand the long term implications of effluent use on their farm lands and groundwater supplies.

Fort McDowell Yavapai-Apache

The Community, with Jobs Bill and other Federal funding obtained through the BIA is rehabilitating its existing agricultural system. The Community has requested that CAP detailed land classification activities be postponed until ongoing development activities are complete. At that time, it is expected that the Community will submit a report to Reclamation in support of CAP funding participation in the system being planned.

Papago-San Xavier and Schuk Toak

These areas of the Papago Reservation were provided a water supply through the Southern Arizona Water Rights Settlement Act of 1982 (Public Law 97-293). This settlement act resolved a water rights controversy that had reached the litigation stage. Under this settlement act, the Bureau of Reclamation is directed to construct facilities to allow the identified water supply to be put to use. This water supply includes CAP water, groundwater, and effluent. The Secretary has contracted for effluent from the City of Tucson. The act precludes the Secretary from constructing a separate delivery facility to deliver the effluent but allows for exchanges. The Act allows the Papago Tribe to conduct the on-reservation planning work through Reclamation under the Indian Self-Determination and Education Assistance Act (Public Law 93-638). Reclamation is presently working out the process and contract details so the Papagos can conduct these studys. Two memorandums of understanding are presently awaiting approval by the Department of the Interior that will specify the roles of the tribe, the BIA, and Reclamation in implementing the provisions of the Act. The contract establishing the trust fund and the contract releasing all other claims to water by the Papagos were signed in 1983.

Ak-Chin

The Ak-Chin Water Rights Settlement Act (Public Law 95-328) established the water rights of the Community. The water supply for the Community will be provided through the CAP. The Santa Rosa Canal is planned to deliver water from the CAP aqueduct to the Community. It will also deliver CAP water to non-Indian agricultural districts and to the Chui Chu area of the Papago Reservation. Construction of the canal is scheduled to begin in April 1985, with water deliveries to Ak-Chin beginning in 1988. On reservation development is being conducted by the Community through grants, loans, and CAP funding. The Community will receive the CAP funding through a Public Law 93-638 contract.

Papago-Chui Chu

CAP water will be delivered to this Community through the Santa Rosa Canal. Discussions are presently ongoing to develop the plan for CAP agricultural use.

Yavapai Prescott,Camp Verde,Tonto Apache,and San Carlos Apache

CAP water deliveries to the Yavapai Prescott,Camp Verde,and Tonto Apache Indian Communities will be via exchanges on the Verde River. The Yavapai Prescott Indian Community and the City of Prescott will use a joint system. A report has been submitted for the Prescott system,but NEPA compliance has not been accomplished. Planning has not yet been initiated for either the Camp Verde system or the Tonto Apache.

CAP water deliveries to the San Carlos Apache Community will be via an exchange on the Gila River. Exchange options are being evaluated as part of Reclamation's Upper Gila Water Supply Study.

Pascua Yaqui

Preliminary contacts have been made with the Community and it is anticipated that CAP water deliveries will be made through the City of Tucson water distribution system.

NON-INDIAN DISTRIBUTION SYSTEMS

The Colorado River Basin Project Act authorized the construction of water distribution and drainage facilities for non-Indian lands to obtain optimum water development and use through improved efficiencies. The Act required that the costs of these facilities be fully repaid through contracts with individual entities. Construction of these facilities was originally envisioned through the Distribution System Loans Act. Seven loan applications involving nine irrigation districts were received under this Act.

In June 1981, Reclamation announced that, in accordance with the President's economic program, no loan funds would be available in the near future. One suggested alternative was for Reclamation to construct non-Indian distribution systems under a 9(d) repayment contract. In July 1982, this alternative was expanded to allow for substantial contributions from the water user entities. In December 1982, P.L. 97-373 was enacted amending the original authorization to provide for price indexing and to require that a minimum of 20 percent of the cost of distribution facilities be contributed by non-Federal interests.

Significant progress has been made in using the repayment contract process in lieu of the loan process. Currently, four of the ten entities that have signed Memorandums of Understanding with Reclamation for distribution systems have signed repayment contracts. Three definite plan reports and seven addendums to loan application reports have been submitted, and five additional entities have indicated an interest in using the repayment contract process. Other potential water service subcontractors may elect to use private or municipal funding sources to finance distribution system construction.

The total cost of non-Indian distribution systems is estimated at about $327 million in October 1984 price levels. This will require Federal appropriations of about $261.6 million. Through fiscal year 1984, $14.5 million has been made available for construction of non-India distribution systems.

CENTRAL ARIZONA PROJECT
STATUS OF NON-INDIAN DISTRIBUTION SYSTEMS PROGRAM

ter User Entities pressing Interest Repayment Contract rocess	Loan Application Report Submitted	MOU Executed	Addendum or Definite Plan Report Submitted	Planning Report Approved	Repayment Contract Executed	Proposed Date of Initial Construction
Harquahala Valley I.D.	x	x	x	x	x	April 1984
Tonopah I.D.	x	x	X			
McMicken I.D.			x			
Queen Creek I.D.	x	x	X			
Chandler Heights Citrus I.D.	x	x	X			
San Tan I. &D.D.	x					
New Magma I. & D.D.	x	x	x	x	x	January 1985
San Carlos I. & D.D.		x				
Hohokam I. & D.D.	x	x	X			
. Maricopa-Stanfield I. &	x	x	x	x	x	April 1985
. Central Arizona I. & D.D	x	x	x	x	x	April 1985
. Cortaro-Marana I.D.						
Avra Valley I. & D.D.						

UPPER GILA WATER SUPPLY STUDY

The UGWSS is the investigation of Hooker Dam and other alternatives on the Gila River in New Mexico and Arizona. The objective of the study is to develop a water supply of 18,000 acre-feet per year for New Mexico. This would be accomplished by capturing Gila River water for use in New Mexico, and supplying downstream users of Gila River water with CAP water in exchange. The study is being accomplished jointly with the Corps of Engineers, which is studying alternatives for flood protection along the same reach of the Gila River.

Several alternatives for providing water to New Mexico and other CAP water users are still being investigated. Emphasis is being placed on developing a model of the Gila River which can be used to develop an operation which will not cause injury to downstream water rights holders. The model is presently beginning a series of technical and public reviews.

A report containing a recommendation on the agency's proposed action is scheduled to be completed in January 1985. A report on potential flood control plans along the Gila River, primarily in Arizona, will be produced jointly and issued by the Corps of Engineers in September 1984.

MIDDLE GILA RIVER STUDY

The Middle Gila River Study is the investigation of Buttes Dam and other alternatives on the Gila River in Arizona. The objective is to develop additional CAP water and to provide for sediment control, recreation, flood control, hydropower, and wildlife enhancement. Several alternatives were identified for developing water and controlling sediment. Initial studies eliminated most of the alternatives. Buttes Dam (for both purposes) and a settling basin (for sediment control only) are still being investigated. No Federal action is still a potential alternative.

A report recommending an agency proposed action is scheduled for release in October 1984.

RECENT DEPARTMENTAL DECISIONS

INDIAN WATER ALLOCATION	DECEMBER 1980
REGULATORY STORAGE DIVISION DECISION ON PROPOSED ACTION	NOVEMBER 1981
SOUTHERN ARIZONA WATER RIGHTS SETTLEMENT ACT	OCTOBER 1982
NON-INDIAN DISTRIBUTION SYSTEMS INDEXING LEGISLATION 20% COST SHARING	DECEMBER 1982
TUCSON AQUEDUCT - PHASE A RECORD OF DECISION	FEBRUARY 1983
NON-INDIAN WATER ALLOCATION	MARCH 1983
VALIDATION OF MASTER CONTRACT	JUNE 1983

PENDING DEPARTMENTAL DECISIONS

REGULATORY STORAGE DIVISION RECORD OF DECISION	AFTER 3/26/84
SAFETY OF DAMS MODIFICATION REPORT TO CONGRESS	FALL 1984
DAM SAFETY LEGISLATION	PENDING
WATER SERVICE CONTRACTING	ONGOING
AK-CHIN SETTLEMENT ACT PERMANENT SOURCE OF WATER	PENDING
INDIAN IRRIGATION SYSTEMS 12 RESERVATION AREAS	ONGOING
HOOVER UP-RATING LEGISLATION	PENDING
TUCSON AQUEDUCT - PHASE B FILE FINAL EIS	AUGUST 1985
NEW MEXICO FACILITIES	1987
BUTTES DAM	1987

CENTRAL ARIZONA PROJECT
AND RELATED SOD FACILITIES