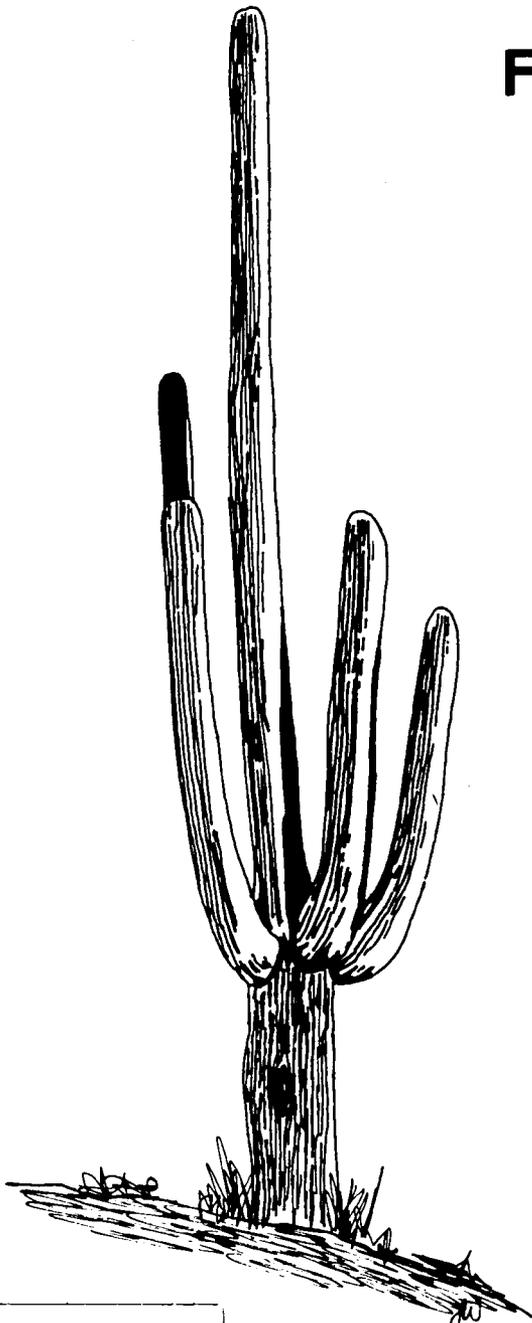


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ANNUAL REPORT

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



JULY 1, 1979
to
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

ANNUAL REPORT

July 1, 1979, through June 30, 1980

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

BACKGROUND

The Flood Control District of Maricopa County was established in 1959 as a Special Flood Control District pursuant to Arizona Revised Statutes as a municipal corporation and a political subdivision of the State of Arizona for the purpose of providing flood protection for metropolitan, urban and agricultural areas in Maricopa County.

Federal flood control projects are planned, designed and constructed by either the U. S. Army Corps of Engineers or by the Soil Conservation Service. It is the responsibility of the Flood Control District, as the local sponsor, to provide all rights-of-way, to relocate all facilities such as roads, bridges and utilities; to relocate people; and to inspect and maintain the structures after completion. In addition, the Flood Control District participates in the planning and construction of local flood control projects.

The Flood Control District provides technical assistance to the County in checking for conformance with floodplain regulations to protect new homeowners from living within a potential flood hazard area. The Flood Control District has also maintained the coordination necessary to make unincorporated areas of Maricopa County eligible for the Federal Flood Insurance Program.

BOARD OF DIRECTORS

Hawley Atkinson, Chairman, July 1, 1979, to January 7, 1980
George Campbell
Tom Freestone
Fred Koory, Jr., Chairman, January 7, 1980, through June 30, 1980
Ed Pastor
Rhea Woodall, Clerk of the Board

CITIZENS' FLOOD CONTROL ADVISORY BOARD

H. Lynn Anderson, Chairman, July 1, 1979, through November 14, 1979
Henry E. Brodersen, July 1, 1979, through November 14, 1979
Elijah Cardon
John E. Miller, Jr., Vice Chairman, November 15, 1979, through June 30, 1980
Paul E. Perry, Vice Chairman, July 1, 1979, through November 14, 1979
Chairman, November 15, 1979, through June 30, 1980
Charles A. (Bill) Sykes, November 16, 1979, through June 30, 1980
J. E. Attebery, Phoenix City Engineer
Reid Teeples, Salt River Project

Larry J. Richmond, General Counsel
Herbert P. Donald, Chief Engineer and General Manager, July 1, 1979,
through January 1, 1980
William D. Mathews, Chief Engineer and General Manager, January 1, 1980,
through June 30, 1980

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

ANNUAL REPORT FY 1979-1980

Accomplishments

Fiscal Year 1979-1980 was a very successful year for the Flood Control District. Cave Buttes Dam was completed by the Corps of Engineers and became operational. Cave Creek had been a notorious destroyer of property. Now that danger is a thing of the past. Cave Buttes Dam has taken Cave Creek out of the newspaper reports of areas of concern.

Spook Hill Floodwater Retarding Structure and Floodway were completed and became operational. This is the first segment of a series of structures to be built by the Soil Conservation Service in the Buckhorn-Mesa Watershed.

Another major project to be completed was the Inlet of Indian Bend Wash. Although there are segments still to be completed by the Corps of Engineers, Indian Bend Wash is no longer considered a major threat to the lives and property of the residents of Scottsdale.

The State Legislature raised the Flood Control Tax Levy ceiling to \$.50 per \$100 of assessed valuation. It is expected that the Board of Supervisors will take advantage of the increased ceiling and will raise the Tax Levy.

The Flood Insurance Rate Map for the Unincorporated Area of Maricopa County was adopted by the Floodplain Board on July 1, 1979, and became effective July 2. This moved Maricopa County into the regular phase of the National Flood Insurance Program and added over 200 miles of delineated floodplains and 2000 acres of areas of shallow flooding to the County's maps. The Flood Control District was instrumental in this effort.

Real-time data acquisition began for the emergency flood warning system. A Hydrometeorologic Technician began work in October 1979. Telemetered rain gauges were installed at mountaintop microwave facilities. The acquisition process began for the communications and computer hardware for the system. The Technician began taking over maintenance of rain and stream gauges that had been maintained by the U. S. Geological Survey for many years.

In March 1980, part of the Operations and Maintenance Branch began working out of the Chandler-Germann facilities. The satellite operation has resulted in fuel savings for both the Flood Control District and the individual employees and in increased on-the-job productivity due to travel reduction. Additional savings were realized by having the Operations and Maintenance Branch work four, ten-hour days each week.

MAJOR PROJECT ACTIVITIES

Corps of Engineers Projects

The Federal Flood Control Act of 1965 authorized an extensive flood control plan for the Phoenix Metropolitan area. The first phase of this plan is Indian Bend Wash. Indian Bend Wash runs in the north-south direction through the City of Scottsdale and a small part of Tempe. The Outlet was completed in 1977 and the Inlet was completed in 1980. The Interceptor Channel is expected to be under construction by the fall of 1980. The Collector and Side Channels system will be constructed in mid-1982.

The second phase of this flood control plan (known as Phase B) is a series of five dams and a diversion channel. Dreamy Draw Dam, in the Phoenix North Mountains, was completed in 1973. Cave Buttes Dam, on Cave Creek, was completed in early 1980. Adobe Dam will be constructed on Skunk Creek north of Bell Road. All rights-of-way for the dam and reservoir have been acquired. Some additional rights-of-way below the spillway and along the channelization area are in the final process of acquisition. It is expected that construction will begin in the fall of 1980. New River Dam will be constructed on New River above Jomax Road. The one large private parcel was acquired in 1978. It is anticipated that construction will begin in 1983.

The Arizona Canal Diversion Channel will run from near 40th Street to Skunk Creek north of the Arizona Canal. Some undeveloped property has been acquired to preclude development. Changes in design from a trapezoidal to a rectangular channel in several sections will reduce the total right-of-way requirements. It is anticipated that construction will begin in 1985.

Soil Conservation Service Projects

Soil Conservation Service projects are funded under the provisions of Public Law 566.

Harquahala Valley Watershed. This watershed is in the northwestern part of Maricopa County and is highly valuable agricultural lands. Features of the project include:

The Saddleback Floodwater Retarding Structure and Diversion Channel are on the eastern, or downstream, side of the Valley. All rights-of-way have been acquired and all relocations have been completed. It is anticipated that construction will begin in the fall of 1980.

The Harquahala Floodwater Retarding Structure and Floodway on the northerly side of the Valley are to be built by the Soil Conservation Service and the Water and Power Resources Service in conjunction with construction of the Central Arizona Project Aqueduct. All private land necessary for the FRS has been acquired. Construction is expected in 1981.

The Centennial Levee is on the southwesterly side of the Valley. Preliminary planning is continuing on this feature.

Buckhorn-Mesa Watershed. This watershed is in eastern Maricopa County and extends into Pinal County. The structures will protect several municipalities and valuable irrigated farm lands. Spook Hill Floodwater Retarding Structure and Floodway were completed in 1980. Acquisition of rights-of-way valued at \$663,000, was started for the Signal Butte Floodway. Plans have been completed for the three bridges at Crismon Road, Brown-Ellsworth Roads and Signal Butte Road. Preliminary planning is continuing on the other features of the project.

RWCD Floodway. This Floodway will begin slightly north of Brown Road and outlet into the Gila River, a distance of 22.5 miles. Bids were opened for Reach 1 in June 1980 and construction should begin shortly. Reaches 1 and 2 are entirely within the Gila River Indian Community and the land rights were made available to the Flood Control District at no cost.

Buckeye Watershed. These three structures are located north of Buckeye and were completed in 1975. Inspection showed deterioration caused by dissication. The Soil Conservation Service will begin repair work in the summer of 1980.

Local Projects

Paradise Valley, Scottsdale, Phoenix Study (PVSP). To be eligible for the Alternate State Assistance Program, the Flood Control District has contracted with the Natelson Company to provide a benefit-cost study, including the portion in the City of Phoenix. The various segments will be built by the municipality in which they are located, and operation and maintenance will be provided by that municipality.

Salt-Gila Clearing. Work began to reclear a 300 foot-wide channel from Gillespie Dam to Powers Butte. High water forced the contractor to move out of the area when the work was 70% complete. The contract was later terminated because the flooding had changed the course of the river to the point where further clearing was not practical.

In June, a contract was awarded to clear a 1000 foot-wide channel between 91st and 123rd Avenues. Further clearing to Gillespie Dam is dependent on an Environmental Assessment required by the U. S. Fish and Wildlife Service. A contract was also awarded for an analysis of Gillespie Dam.

The State Legislature appropriated \$1.1 million to be matched for projects on the Salt-Gila River.

48th Street Drain. The City of Tempe awarded a construction contract to build a roadway bridge at Lindsey Drive, two pedestrian bridges, two canal flumes for the San Francisco Canal, and channel lining and a rock gabion settling basin.

FLOOD CONTROL DISTRICT EXPENDITURES

FY 1979-1980

Adobe Dam	\$2,138,557.36
Cave Buttes Dam	145,575.98
Arizona Canal Diversion Channel	814,069.65
Indian Bend Wash	1,617,852.38
Harquahala Watershed	723,480.90
Spook Hill FRS and Floodway	193,668.77
Signal Butte Floodway	306,184.03
RWCD Floodway	705,004.05
Salt Gila Clearing and Channelization	42,005.22
Town of Paradise Valley (Cost Sharing)	63,114.94
Operation and Maintenance of Structures	272,518.73
Insurance	117,562.37
Technical Assistance of Maricopa County (\$16,704.37 reimbursed)	45,225.40
Flood Warning, Data Collection (\$27,459.29 reimbursed)	67,881.92
Other	<u>469,261.65</u>
Total	\$7,721,963.35

FLOOD OF 1980
February 14 to 22, 1980

The flood in February 1980 was the worst flood in Maricopa County since the flood in 1891. Flows peaked at 170,000 cfs on the Salt River and 66,000 cfs on the Agua Fria.

During the night of February 15-16, releases on the Salt-Verde River system rose rapidly. Based on potential flows of up to 200,000 cfs at Granite Reef, Flood Control District personnel delineated floodplain areas to be evacuated and provided this information to County Civil Defense and Emergency Services who then implemented the evacuation plan. District personnel also designated critical points of concern along the Salt and Gila Rivers, including potential breakout locations and areas susceptible to erosion and bridge damage.

On the Agua Fria River, severe flooding conditions were also encountered. With releases from Waddell Dam at 44,000 cfs on February 15, the District recommended that people in low lying areas such as El Mirage, Hound Dog Acres and Rose Garden Lane be notified of impending hazard, and many people were evacuated. On February 19, releases reached 66,000 cfs with even higher releases possible. On that basis, we established evacuation limits for flows of 90,000 cfs. This information was used by Civil Defense officials in making recommendations to unincorporated and incorporated areas along the banks of the Agua Fria River.

During this same period, flows in the New River were very heavy, necessitating the evacuation of a portion of the community of New River.

Flows in the Hassayampa through the Town of Wickenburg caused evacuation of low lying areas and these flows contributed to damages in the Arlington Valley areas along the Gila River.

The Gila River above the confluence of the Salt River provided relatively minor flows estimated at a high of 10,000 cfs. No flood releases were made from Coolidge Dam although San Carlos Reservoir filled almost to capacity.

Flood Control District structures had a dramatic affect on attenuating floodwaters, a prime example being Cave Buttes Dam which had just been completed. This Dam virtually prevented all damages. The spillway elevation is 98 feet above the outlet and the structure filled to a maximum height of about 43 feet. The peak inflow into Cave Buttes Dam Reservoir was at least 7,200 cfs and the maximum outflow was 324 cfs, all of which flowed harmlessly into the Arizona Canal which had been lowered by the Salt River Project to avoid flooding. Without this attenuation of the peak, the flows from Cave Creek would have spilled out of the Arizona Canal into central Phoenix causing considerable damage, similar to that which occurred in March and December 1978 and in many previous floods such as 1967 when Christown was under water.

The Spook Hill Floodwater Retarding Structure was completed in November 1979 and had water stored to a height of three feet.

Sunset and Sunnycove Floodwater Retarding Structures in Wickenburg had water stored to a height of about four feet. West of the Phoenix area, floodwaters were retained by the Buckeye structures, White Tanks 3 and 4 and McMicken Dam.

Indian Bend Wash received flows of about 1,200 cfs spilled from the Arizona Canal in the recently completed Inlet works. That spill, combined with inflow of Indian Bend Wash watershed, caused inundation of portions of the Greenbelt area. The flows in Indian Bend Wash were entirely contained in the Wash and no damages were sustained except minor erosion damage to the Greenbelt area.

Our structures in Pinal County collected some minor flows which were ultimately discharged into Powerline Floodway.

During this flood emergency, Flood Control District personnel were involved in surveillance of critical stream and rain gauges as well as surveillance of flooding conditions. Representatives were provided to the Emergency Operations Center. This resulted in about 1,000 employee hours at a cost of approximately \$12,000.