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Herbert P. Donald

FLOOD CONTROL DISTRICT
OF
MARICOPA COUNTY

ANNUAL REPORT

JULY 1, 1975 — JUNE 30, 1976

Herbert P. Donald

003.101

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SECTION I

INTRODUCTION

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

ANNUAL REPORT

Introduction

This Annual Report is the first such report to be prepared by the Flood Control District, and, therefore, a limited amount of background and historical information is included in this section.

The Flood Control District of Maricopa County was organized on August 3, 1959, pursuant to Arizona Revised Statutes 45-2352 et seq. It was established for the purpose of acquiring, constructing, improving, extending, maintaining and operating flood control facilities to control the waters of rivers and streams, and other surface waters and flood waters to prevent the flooding of property and the endangering of lives of people.

Authorities granted to the Flood Control District by the enabling legislation provided for the District to be a public political taxing subdivision of the State and a municipal corporation to the extent of the powers and privileges conferred by the legislation or granted generally to municipal corporations by the Constitution and Statutes of the State of Arizona.

The District is governed by the board of supervisors, who shall be deemed to be the Board of Directors. The Board of Directors is authorized to exercise all powers and duties as are ordinarily exercised by the governing body of a political subdivision. The Board of Directors may adopt regulations and bylaws for the operation of the District as it seems fit and, in general, do and perform all things which it may consider necessary in the interest of the District.

The original State Statutes authorized a 2¢ per \$100 property evaluation Flood Control Tax to create a Flood Control District. The District was empowered to issue and sell bonds to provide funds for construction of flood control projects. On March 8, 1966, an election was held which would authorize the sale of flood control bonds amounting to \$22,679,000. The primary purpose of the bond election was to provide local funds to support Federal flood control projects previously authorized by Congress. This election failed by a wide margin. On May 4, 1972, ARS 45-2364 C authorized an increase in the Flood Control Tax to 20¢ per \$100 property evaluation. This Flood Control Tax was levied by the Board of Supervisors of Maricopa County the following year. The State Flood Control Assistance Program was established on April 9, 1973, ARS 45-2701, et seq. This Program provided for State financial assistance for a period of 15 years and authorized the State to contribute one half of local costs for Federal flood control projects. Stated below are the amount of funds requested and appropriated since the Assistance Program was authorized:

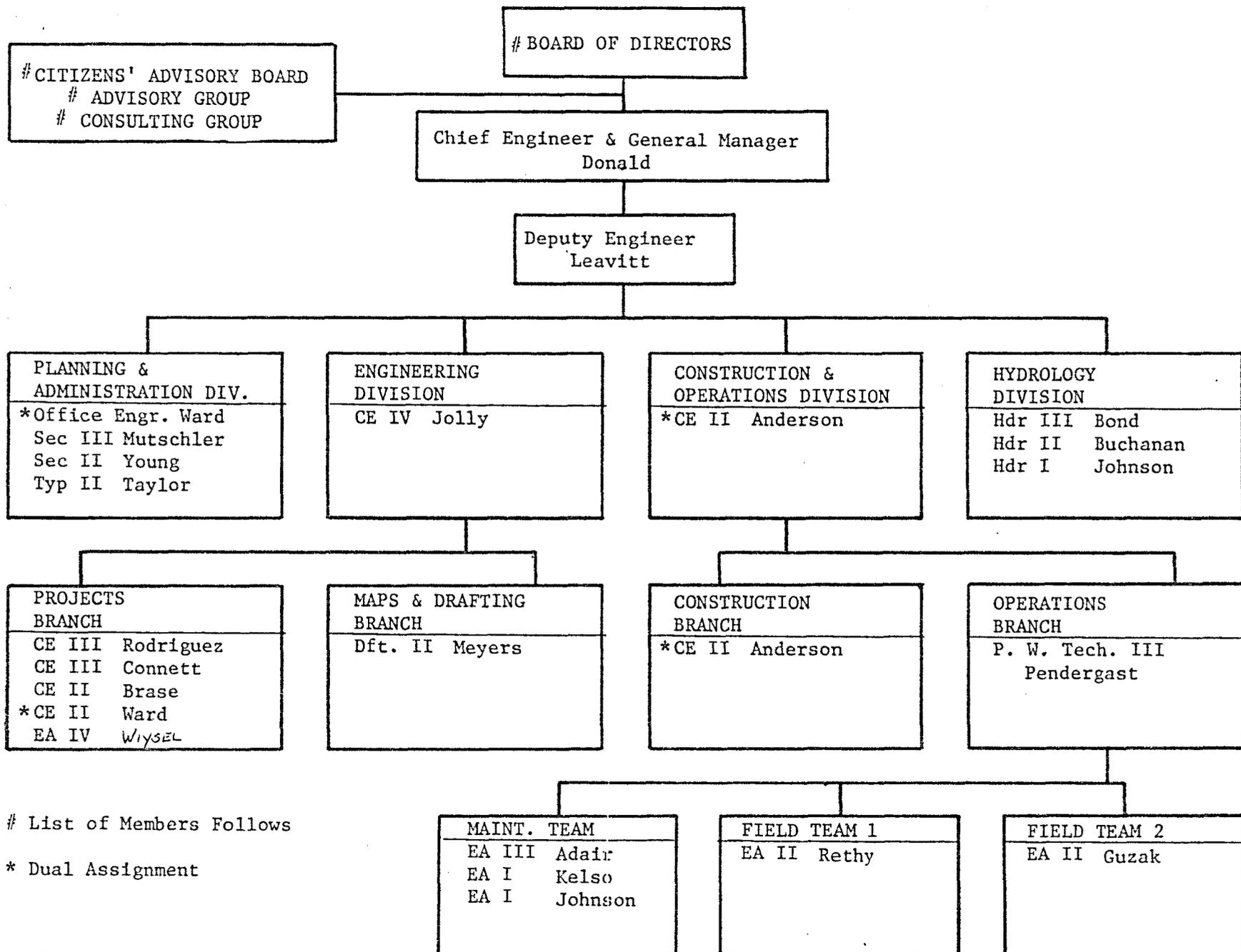
<u>Year</u>	<u>Amount Requested</u>	<u>Amount Appropriated</u>
1973	\$2,450,000	\$2,450,000
1974	2,475,000	895,000
1975	3,688,000	176,000
1976	<u>4,700,000</u>	<u>600,000</u>
Total	13,313,000	4,121,000

Federal flood control projects are planned, designed and constructed by either the U. S. Army Corps of Engineers or the Soil Conservation Service, U. S. Department of Agriculture. It is the responsibility of the Flood Control District to provide funds for the acquisition of all rights-of-way necessary for the project and to relocate all facilities such as roads, bridges, utilities, irrigation systems, etc. In addition the Flood Control District has established a Local Projects Flood Control Program by which the District participates equally with municipalities or other governmental agencies in the planning and construction of non-Federal flood control projects.

Information concerning major activities of the Flood Control District during the period July 1, 1975, through June 30, 1976, is included in this Report.

SECTION II

ORGANIZATION CHART



List of Members Follows

* Dual Assignment

Board of Directors of the Flood Control District

Bob Stark, Chairman, July 1, 1975, to January 5, 1976
Henry Haws, Chairman, July 5, 1976, through June 30, 1976
Eldon Rudd ^{JANUARY}
Bob Corbin
Joe Eddie Lopez

Citizens' Advisory Board

H. Lynn Anderson, Chairman, July 1, 1975, to November 20, 1975
Donald K. Chambers, Chairman, November 20, 1975, through June 30, 1976
Wilbur Weigold
Henry E. Brodersen
Hugh Nichols (Term expired November 15, 1975)
Elijah A. Cardon (Replaced Hugh Nichols)
James E. Attebery, Phoenix City Engineer
Reid Teeple, Salt River Project

Larry J. Richmond, Legal Counsel

CITIZENS' ADVISORY BOARD

Advisory Group*

Mr. Robert A. Murphy, American Society of Civil Engineers
Mr. David McDowell, Arizona Conservation Council
Mr. John Carr, Arizona Game and Fish Department
Mr. Robert E. Yount, Arizona State Land Department
Mr. Roger Baker, Arizona Public Service Company
Mr. William D. Mathews, Arizona Water Commission
Mr. John H. Tanner, Arizona Rock Products Association
Mr. Roger Evans, Bureau of Indian Affairs
Mr. Guy E. Baier, Bureau of Land Management
Mr. George Thompson, Chamber of Commerce, Mesa
Mr. Walter D. White, Hohokam Resource Conservation and Development Project
Mr. Marvin Larson, Home Builders Association of Central Arizona
Mr. Edwin K. Delph, John Jacobs Properties
Mrs. Marjorie Wallace, League of Women Voters
Mr. Harold Hauf, Valley Forward Association
Mr. Harold Trago, Arizona Wildlife Federation
Mr. James Soudriette, Phoenix Metropolitan Chamber of Commerce

Consulting Group*

Mr. Jerald Johnson, Avondale
Mr. Ken Fooks, Chandler
Mr. Cecil Skaggs, El Mirage
Mayor Willis A. Williams, Gila Bend
Mr. Lynn R. Stuart, Gilbert
Mr. Harold Goodman, Glendale
Mr. Alvin E. Thrasher, Goodyear
Mr. Charles Luster, Mesa
Mr. Charles H. Atkinson, Paradise Valley
Mr. Oscar R. Recker, Peoria
Mr. George Iannella, Scottsdale
Mayor George Cumbie, Surprise
Mr. Grover Serenbetz, Tempe
Mr. Jack Phillips, Tolleson
Mr. Vernon Troy, Wickenburg
Mayor Frank L. Brown, Youngtown

* Membership as of June 30, 1976

SECTION III

PROJECT ACTIVITIES DURING FY 75-76

PROJECT ACTIVITIES

A. Buckeye Watershed

Phase II of the Buckeye Watershed Protection Project was formally accepted as being complete on September 2, 1975. The low bidder for this project, M. M. Sundt Construction Company of Tucson, Arizona, commenced work on Phase II on July 27, 1974. Their contract called for construction of two earthfill floodwater retarding structures, with interconnecting floodways, which when complete would augment the existing 6½ mile earthen structure completed under Phase I.

The completed project, consisting of Phases I and II, was designed to detain and release to the Hassayampa River the 100-year storm runoff from 58,896 acres of land. In doing so, valuable agricultural land, a 14 mile segment of I-10, and the Town of Buckeye, Arizona would be provided flood protection.

Total construction cost of the Buckeye Watershed Protection Project was \$3,647,400, with the Soil Conservation Service, USDA paying \$3,544,000 and the Flood Control District of Maricopa County funding the remaining \$103,400. Project right of way was acquired by the Arizona Department of Transportation. Flood easements were granted to the Flood Control District. The project was constructed under the authority of the Watershed Protection and Flood Prevention Act, Public Law 566, 83rd Congress.

B. Wickenburg Watershed

A contract for construction of two earthfill floodwater retarding structures at Wickenburg, Arizona was awarded to M. M. Sundt Construction Company of Tucson, Arizona on March 23, 1976.

The scope of the contract consists of building earthen flood retarding structures across Sunset Wash and Sunnycove Wash with an underground interconnecting concrete pipeline to release the detained floodwaters to the Hassayampa River. When these structures are completed, floodwater and sediment damage to residential properties along Sunset and Sunnycove Washes will be greatly alleviated.

The construction cost of the project, \$776,700, is being funded by the Soil Conservation Service, USDA under authority of the Watershed Protection and Flood Prevention Act, Public Law 566, 83rd Congress. The Flood Control District of Maricopa County provided approximately \$160,000 for project right of way and relocation of utilities. Estimated completion date for the project is September 15, 1976.

C. Harquahala Valley

Activity on the Harquahala Valley Project centered around preparation and circulation of the Environmental Impact Statement and Supplemental Watershed Workplan. During the past year several copies of these documents were sent to various public and governmental agencies for review and comment. As of June 1976, no significant adverse comments have been received in opposition to the project.

The most significant concern over the future of the project at the present time is whether or not the Flood Control District of Maricopa County will be able to provide the \$1,500,000 needed for right of way acquisition and relocation of utilities. As of June 1976, local funding for this project was very uncertain.

Local support for the project is continuing as evidenced by the fact that the Flood Control District commenced work in June 1976 to acquire "Right of Entry" permits for survey and subsurface exploration on private, state and federal lands located within the proposed project construction boundaries. Present plans call for completion of survey and geology work by March 1977.

Planning for the Harquahala Valley Project is being carried out by the Soil Conservation Service with the assistance of the Arizona Water Commission under authority of the Watershed Protection and Flood Prevention Act, Public Law 566, 83rd Congress.

D. Buckhorn Mesa Watershed

1. Spook Hill Flood Retarding Structure

Considerable progress was made on this project during FY 75-76. Except for 10 parcels of land owned by United Development Corporation, all private property for the project has been acquired. Negotiations for the 10 remaining parcels is underway and should be completed by September 1976. Acquisition of federal and state land is proceeding on schedule and should not delay construction.

In October 1975 mining claims were unexpectedly found which had been filed in the Tonto National Forest. With the help of the National Forest Service, attempts are being made to have these claims relinquished.

Also, in October 1975, preliminary design plans for the Spook Hill structure were received from the Soil Conservation Service. The plans were reviewed by several agencies and numerous meetings were held to discuss various aspects of the project. The Flood Control District worked closely with the Maricopa County Highway Department to coordinate design and construction of ramps over the dam at McKellips Road, McDowell Road, and Brown Road.

The Soil Conservation Service expects to have final plans completed and the final Environmental Impact Statement filed by August 1976 so construction can be underway by early 1977.

One aspect of major concern was landscaping. The Soil Conservation Service contracted with a landscape architect, A. Wayne Smith and Associates, to provide a landscaping plan for the structure. This firm submitted a preliminary proposal which was circulated among several agencies for review and will be incorporated into a final landscaping plan.

An interesting observation was made by the Fish and Wildlife Service in October 1975 when a pair of Yuma Clapper Rails were discovered nesting in a marshy area of the Salt River just upstream of the Granite Reef Dam. Concern was expressed that floodwaters from the Spook Hill structure might eventually accumulate enough sediment in this marshy area to destroy the birds' nesting sites. This problem was resolved by designing a sediment basin at the floodway outlet.

2. Signal Butte Floodway

A review of the floodway alignment proposed by the Soil Conservation Service disclosed several right of way problems. Numerous private properties would be bisected by the project imposing considerable hardships on the owners and subjecting the Flood Control District to paying substantial severance damages when acquiring the property.

As a result of this problem some alternate alignments have been proposed and are currently under study by the Soil Conservation Service.

E. RWCD Floodway

Progress on this project has not advanced as rapidly as expected during the past fiscal year. In October 1975 the Fish and Wildlife Service declared several hundred acres of wildlife habitat in the Gila River Indian Reservation would be lost if the project were constructed. After several meetings with interested agencies, a mitigation plan was developed that would allow the project to proceed.

Another significant obstacle was cleared during the past year when an agreement was reached with the Pima Indian Agency to firmly establish project right of way and spoil disposal areas through the reservation boundaries.

Tentative time schedules project the preliminary Environmental Impact Statement to be out for review in September 1976 in order that a November 1977 construction start can be achieved. Present plans call for the Floodway to be built in six phases with each phase taking about a year to complete.

The coming year will find the Flood Control District acquiring the remaining right of way for the project and designing and constructing bridges to span the floodway at its intersection with county roads. The Arizona Department of Transportation will design and construct bridges over the floodway for State Highways 87 and 93. Railroad bridges will be financed out of federal funds.

F. Lower Queen Creek

The Arizona Water Commission is currently assisting the Soil Conservation Service with this project by making a feasibility study and formulating a preliminary work plan. This study and work plan should be complete by December 1976.

G. Indian Bend Wash

1. Outlet Channel

The Outlet Channel extends from one quarter mile north of McKellips Road in a southwesterly direction to the point where the Scottsdale Road Bridge crosses the Salt River Channel. The Corps of Engineers completed the construction plans and specifications for the Outlet Channel and related structures during the first half of the fiscal year. The Flood Control District secured all of the necessary right of way for this construction during approximately the same period. Construction of the low flow bridges for the McKellips Road and Princess Drive wash crossings was completed in August 1975 by the Flood Control District's contractor at a total cost of \$357,035. Approximately 83% of the cost of the two bridges was paid from FY 1976 funds. The District has spent \$1,341,048, of its FY 1976 funds for right of way, consulting engineer services, bridge construction, and utility system relocation and protection to enable the Corps of Engineers to construct the Channel. The contract for the Channel construction was let on January 9, 1976, by the Corps of Engineers to Lee Construction Company of California for \$3,030,054. The notice to proceed was given on January 26, 1976, and groundbreaking was on February 2, 1976.

2. Greenbelt Floodway

The Greenbelt Floodway extends from McDonald Drive through Scottsdale in a southerly direction to one quarter mile north of McKellips Road. This area is being developed by Scottsdale but the Flood Control District is sharing in the cost for certain flood control requirements and features. During FY 1976 the District paid the City of Scottsdale \$117,443.63 for its share in the cost of constructing the following:

McDowell Road Bridge approaches and inlet
McDonald Drive Bridge and channelization

Water main relocation
Thomas Road Bridge and its approaches, inlet and outlet

3. Inlet Channel

The main channel of the Inlet will extend from Indian Bend Road to McDonald Drive with a siphon for the Arizona Canal which crosses the channel alignment. In addition, there will also be an Interceptor Channel on the north side of the Arizona Canal from Pima Road to the main channel; and there will be a side channel system to carry floodwaters from the area on the west side of the Arizona Canal between the main channel and 68th Street to the wash by means of storm drains on McDonald Drive, Chaparral Road, and Camelback Road. During the second half of FY 1976 preliminary title information for the proposed construction area was secured and negotiations were made for a consulting engineer to prepare the necessary land rights maps. During this period the Corps of Engineers worked toward its final design for the Inlet Channel and other features to be constructed.

H. Upper Indian Bend Wash (City of Phoenix)

Tanner Brothers Construction Company was awarded the contract for the construction of the Shea Boulevard Bridge across the Indian Bend Wash on December 8, 1975. The low bid was \$430,640. Construction began in January 1976. Work continued off and on throughout FY 75-76 improving and maintaining the Indian Bend Wash low flow and main channel area along the City of Phoenix portion of Indian Bend Wash. The portions of Indian Bend Wash lying within private developments are being improved as developments progress in these areas. The Flood Control District was not directly involved in this project.

I. Cave Buttes Dam

Right of way acquisition of private land continued at an active pace with only eight parcels remaining to be acquired. However, problems still exist in reaching an agreement with the State Land Department on the acquisition of flowage easements on State Trust Lands located within the project boundaries. Agreement was reached with the State Land Department on the purchase of State Trust Lands in fee title; the District will make payment for this land based on a valuation established by the State's appraiser. Another right of way issue that remains to be resolved is the disposition of mining claims that have been filed on land required for the project.

Discussions with the Corps of Engineers during the past year indicate the Corps feels the Old Cave Creek Dam, constructed in 1923, could be left in place after the Cave Buttes structure was complete. The concrete arch design of the old dam is rather unique and certainly has historical significance.

J. Adobe Dam

As indicated by the large sum of money expended on this project during the past 12 months, right of way acquisition was continuing at an active pace. The status of acquiring State Trust Lands is identical to that existing for the Cave Buttes project.

At the end of June 1976, the Corps of Engineers was nearing completion on their cost estimates for the one dam versus two dam concept.

K. New River Dam

No activity took place on this project during FY 75-76.

L. Arizona Canal Diversion Channel

Due to the high priorities assigned to Cave Buttes and Adobe Dams, very little activity took place during the past year on the Arizona Canal Diversion Channel. Only one parcel of right of way was acquired.

M. Flowage Easements, Skunk Creek, New and Agua Fria Rivers

No activity took place to acquire flowage easements during FY 75-76.

N. Salt River Channel

An earth lined channel with a design capacity of 35,000 cfs was constructed in the Salt River under the new Scottsdale Road Bridge west to Mill Avenue. The contractor, M. M. Sundt Construction Company of Tucson, Arizona, commenced construction on July 14, 1975, and finished the job 45 days later on August 28, 1975. Engineering and design services were provided by the consulting firm of Hoffman-Miller Engineers, Inc., Phoenix, Arizona.

O. Champion Flood Prevention Project (Old 43rd Avenue Drain)

In January 1974, the City of Phoenix requested assistance from the Flood Control District in establishing a flood control project in the area of southwest Phoenix. In November 1975, the Flood Control District proposed that this project become a Hohokam Resource Conservation and Development Project and invited the City of Phoenix, Salt River Project and the Agua Fria-New River Natural Resource Conservation District to join the District as cosponsors of the project. Agreement was reached between sponsors and work was begun on a proposal to the Hohokam Resource Conservation and Development Project during April 1976. At this time the "Champion Flood Prevention Resource Conservation and Development Measure" proposal is ready for submission to the Hohokam Resource Conservation and Development Measures Review Committee for consideration and adoption as an official Resource Conservation and Development Measure.

P. Local Projects

1. City of Phoenix

The District has agreed to the extent funds are available, to assist the City of Phoenix in funding their flood control program. Although the District made no monetary reimbursements to Phoenix during the past fiscal year, inspections were made by District personnel on the following projects:

- a. Detention Dams 2A and 2B. Two earthfill dams located at Thunderbird and 7th Street. Construction was started in August 1975 and completed in April 1976.
- b. Old Cross Cut Canal along 47th Street between Washington and Oak Street. An earthlined channel 1.8 miles long with five concrete drop structures along the overall length with baffled discharge aprons for stilling of flow to provide suitable channel gradient. Construction was started in November 1975 and completed in June 1976.
- c. Sweetwater Channel. A concrete and gabion lined channel along Sweetwater Avenue between 15th Avenue and Cave Creek. Channel is 1.1 miles long with one concrete drop structure.

2. City of Mesa

The Flood Control District reimbursed the City of Mesa \$322,000 during the past fiscal year for right of way acquisition and incidental construction and engineering fees related to the following projects:

- a. Center Street Basin
- b. Tempe Canal Drainage Channel from Southern Avenue to proposed freeway.
- c. Detention basin and floodway channel along Tempe Canal from proposed freeway to the Western Canal.
- d. Extension Road Basin.

3. Town of Gila Bend

In order to eliminate a flooding problem to a portion of Gila Bend located along the Sand Tank Wash, the Flood Control District agreed to assist the Town in financing improvements that would eliminate the flooding. The problem was alleviated with the installation of a drainage pipe through a levee along the wash. This pipe has a one way flap valve that allows water to discharge from behind the levee into the wash but will close when the water level in the wash rises above the valve. The District reimbursed the Town \$1,931 which was 50% of the installation cost of this item. Some additional earthwork on the levee along Sand Tank Wash remains to be done as part of the cooperative agreement between the District and the Town.

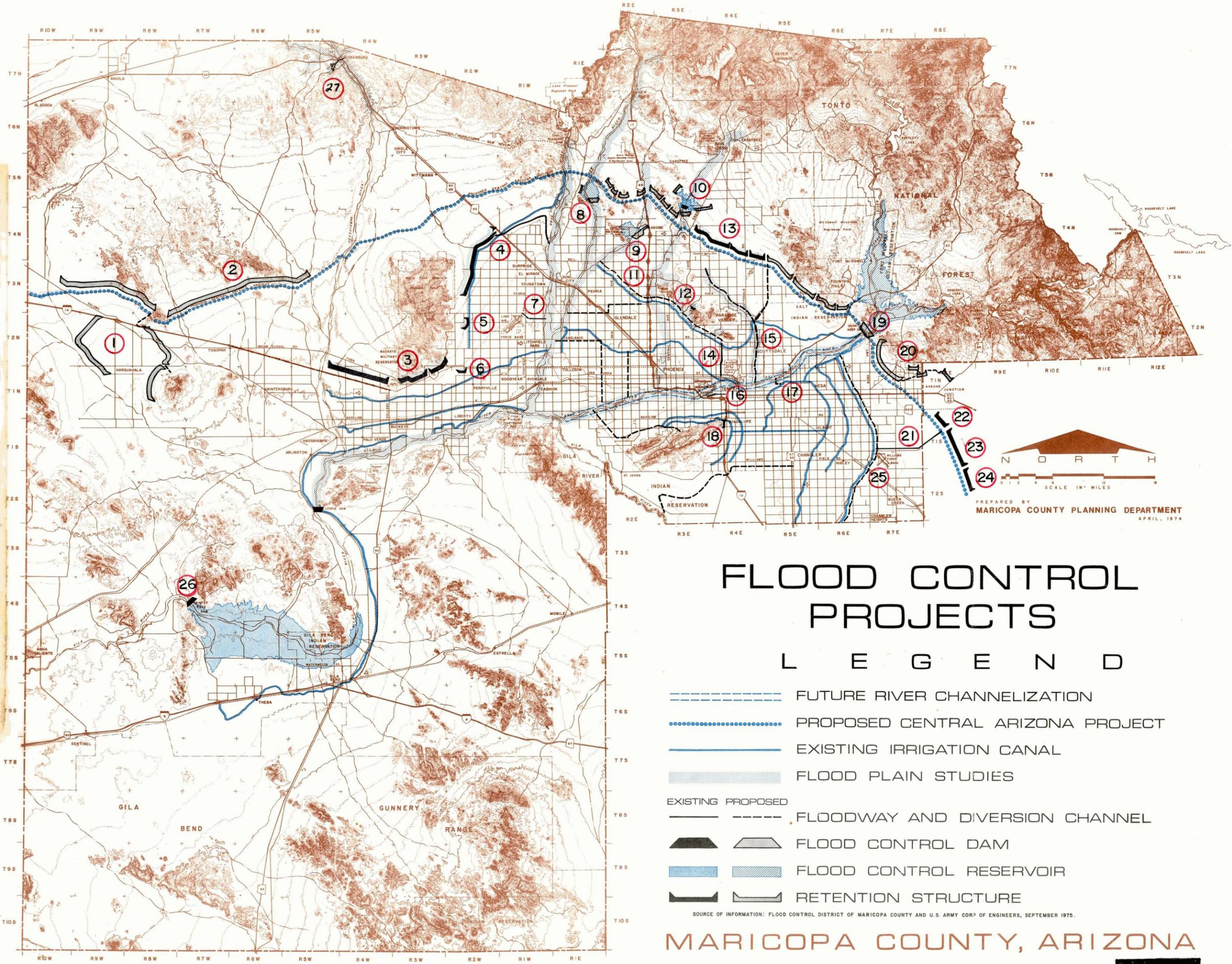
SECTION IV

PROJECT LOCATION MAP AND EXPENDITURES

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EXPENDITURES BY PROJECT

<u>Project</u>	<u>Expenditures FY 75 - 76</u>	<u>Total Expenditures To June 30, 1976</u>	<u>Estimated Expenditures to Complete Project</u>
Sunset/Sunnycove F.R.S.	\$ 15,900	\$ 91,400	\$ 58,000
Harquahala Valley Watershed	900	900	1,498,200
Spook Hill F.R.S.	41,200	861,900	1,252,658
Signal Butte Floodway	5,000	5,000	4,278,100
RWCD Floodway	8,900	1,624,900	3,145,100
Lower Queen Creek Watershed	200	6,200	Unknown
Lower Indian Bend Wash	1,459,300	3,090,100	2,014,300
Cave Buttes Dam	85,600	899,701	2,453,300
Adobe Dam	798,400	1,402,390	5,031,200
Arizona Canal Diversion Channel	9,200	155,200	37,873,100
Salt River Channel	657,000	863,800	0



- LEGEND**
- 1. Harquahala Valley Watershed Project
 - * 2. Tonopah Watershed Project
 - 3. Buckeye Watershed Project
 - 4. McMicken Dam
 - 5. White Tanks Dam #3
 - 6. White Tanks Dam #4
 - 7. Dysart-Agua Fria Drain
 - 8. New River Dam
 - 9. Adobe Dam
 - 10. Cave Buttes Dam
 - 11. Arizona Canal Diversion Channel
 - 12. Dreamy Draw Dam
 - * 13. Paradise Valley Structures
 - 14. Old Cross Cut Canal
 - 15. Indian Bend Wash Floodway
 - 16. 48th Street Drain
 - 17. Alma School Drain
 - 18. Guadalupe Watershed Project
 - 19. Orme Dam
 - 20. Buckhorn Mesa Watershed Project
 - 21. Powerline Floodway
 - 22. Powerline Dam
 - 23. Vineyard Road Dam
 - 24. Rittenhouse Dam
 - 25. RWCD Floodway
 - 26. Painted Rock Dam
 - 27. Wickenburg Watershed Project
 - * Bureau of Reclamation Projects

- FLOOD CONTROL PROJECTS LEGEND**
- FUTURE RIVER CHANNELIZATION
 - PROPOSED CENTRAL ARIZONA PROJECT
 - EXISTING IRRIGATION CANAL
 - ▨ FLOOD PLAIN STUDIES
 - EXISTING FLOODWAY AND DIVERSION CHANNEL
 - - - PROPOSED FLOODWAY AND DIVERSION CHANNEL
 - ▬ FLOOD CONTROL DAM
 - ▭ FLOOD CONTROL RESERVOIR
 - ▭ RETENTION STRUCTURE
- SOURCE OF INFORMATION: FLOOD CONTROL DISTRICT OF MARICOPA COUNTY AND U.S. ARMY CORP. OF ENGINEERS, SEPTEMBER 1975.

PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
 APRIL, 1974

MARICOPA COUNTY, ARIZONA

SECTION V

CONSTRUCTION AND OPERATIONS ACTIVITIES

CONSTRUCTION AND OPERATIONS ACTIVITIES

- A. List of Major Items of Equipment - At the end of FY 75-76, the Construction and Operations Division had the following major items of equipment on hand:
1. Two 1974 Chevrolet 4 wheel drive pickup trucks
 2. One 1976 Chevrolet 4 wheel drive pickup truck
 3. One 1975 Chevrolet 2½ ton dump truck
 4. Gasoline powered concrete mixer - one sack capacity
 5. 400 gallon portable steel water tank
 6. Gasoline powered centrifugal water pump
 7. Gasoline powered 14" chain saw
- B. Major Project Activities - In addition to the routine maintenance of completed flood control structures, the following projects were given special attention during the past fiscal year.
1. Powerline Floodway - The Powerline Floodway was completed by the Soil Conservation Service in May of 1968 and consists of 6½ miles of a large concrete lined channel. The channel lining has deteriorated as evidenced by the large concrete spalls that have appeared at the expansion joints. Some longitudinal and transverse cracks are also beginning to appear in the concrete lining. The appearance of these failures has been continual since its completion. During the past 12 months a program was initiated to determine the cause of this problem and alleviate it. The concrete liner was cut in about four places to form new expansion joints which were filled with different materials such as asphalt impregnated felt, polyurethane caulking and various other elastic type caulking materials. These new joints will be kept under observation to see which type filler material gives the best performance. Based upon the results of these tests, an extensive program will be undertaken to modify and repair the entire length of the concrete channel. Also a program was initiated to stimulate the Soil Conservation Service to take an active interest in possible reconstruction and repair of the channel. The programs will continue into the next fiscal year.
 2. Alma School Drain - The facility was originally constructed by the Salt River Project and is now maintained by the Flood

Control District. This channel is used as a floodway to carry waste irrigation water, surface runoff and storm runoff from the City of Mesa storm drain system into the Salt River. During the past year the Flood Control District had the lined portion of this channel cleaned of silt and vegetative growth while the unlined portion was similarly cleaned and reshaped.

3. 48th Street Drain - This facility was originally constructed by the Salt River Project and is now maintained by the Flood Control District. This channel is used primarily to convey to the Salt River storm water discharged from the City of Tempe storm drain system. During the past year this channel was cleaned of vegetative growth throughout its length from 48th Street to the Salt River.
4. Dreamy Draw Dam - Vandalism initiated the following construction at Dreamy Draw Dam. A six inch reinforced concrete wall was constructed around the existing instrument building and a new steel entrance door was installed. Vandalism also required the repair of the recording instruments within the building. In addition, some riprap pads were constructed along the east edge of the emergency spillway using one foot diameter boulders and concrete grout.

SECTION VI

FLOODPLAIN REGULATIONS AND DELINEATIONS

FLOODPLAIN REGULATIONS AND DELINEATIONS

The Flood Control District of Maricopa County first became involved in establishing Floodplain Regulations in 1961. It was not until February 25, 1974, that the Board of Supervisors of Maricopa County adopted the Floodplain Regulations for the Unincorporated Area of Maricopa County.

The floodplain delineations adopted by the Board under the 1974 Regulations were all from floodplain information studies made by the United States Army Corps of Engineers. The studies delineated the 50 and 100 year flood events. Table "A" lists the delineations and pertinent information regarding them.

On July 14, 1975, the current Floodplain Regulations were adopted by the Floodplain Board (Board of Supervisors) which superseded the 1974 Regulations. The 1975 Regulation is a two district regulation and is more closely aligned with State legislation and the National Flood Insurance Program.

There are two types of floodplain delineations which have been adopted under the existing Regulation. The Two District Delineation provides a delineation of both the Floodway District and the Floodway Fringe District. This type of delineation is needed in conjunction with the Floodplain Regulations to insure fair and adequate control over development in floodplains.

The other type of delineation is referred to as the Interim Delineation. It is a delineation of the Regulatory Floodplain (100-year) made from the most reliable source available for which a delineation of the Floodway District is not available. The Interim Delineations will be replaced by Two District Delineations as they become available.

The delineations which have been adopted were derived from studies made by the Army Corps of Engineers, the United States Geological Survey, the Flood Control District of Maricopa County and local engineering consulting firms. Table "B" is a list of the delineations which have been adopted and regulated to under the 1975 Floodplain Regulations for the Unincorporated Area of Maricopa County, Arizona. These delineations were in effect as of June 30, 1976.

The Floodplain Board has adopted a total of 175 river miles of delineated floodplain as of June 30, 1976. The Interim Delineations account for 103.2 miles of the floodplain, while the other 71.8 miles of floodplains are Two District Delineations. In addition, the Board has adopted delineations of reservoir or ponding areas for ten structures within the Unincorporated Area of Maricopa County.

TABLE "A"

<u>WATERWAY</u>	<u>GENERAL LOCATION</u>	<u>RIVER MILES</u>	<u>DATE OF ADOPTION</u>
Cave Creek	Cave Creek Reservoir to 1 mile east of School House Road	7.8	February 25, 1974
Mexican Wash	Confluence with Rowler Wash to $\frac{1}{4}$ mile west of 72nd Street	.7	February 25, 1974
New River	Greenway Road to Community of New River	27.0	February 25, 1974
Rowler Wash	Confluence with Cave Creek to 72nd Street	2.3	February 25, 1974
Skunk Creek	Beardsley Road to Black Canyon Highway	5.1	February 25, 1974

TABLE "B"

<u>WATERWAYS OF STRUCTURES</u>	<u>GENERAL LOCATION</u>	<u>RIVER MILES</u>	<u>DATE OF ADOPTION</u>
Agua Fria River	Confluence with Gila River to ½ mile north of Pinnacle Peak Road	24.3	November 3, 1976
Agua Fria River*	½ mile north of Pinnacle Peak Road to Lake Pleasant	9.8	July 14, 1975
Buckeye Structures	Parallel I-10 on the north from ½ mile east of Turner Road to Hassayampa River		July 14, 1975
Cave Creek Reservoir	Two miles northwest of Pinnacle Peak and Cave Creek Road		July 14, 1975
Cave Creek Wash	Bell Road to Beardsley Road	2.0	July 14, 1975
Cave Creek Wash*	Cave Creek Reservoir to one mile east of School House Road	7.8	July 14, 1975
Gila River*	107th Avenue to center Sec. 27, T1S, R5W	27.0	July 14, 1975
Granite Reef Detention Dike	Cave Creek Road to Scottsdale Road		July 14, 1975
Guadalupe Flood Retarding Structure	South of Baseline Road and along west side of I-10		July 14, 1975
Hassayampa River*	Yavapai County line to south section line of Sec. 10, T6N, R4W	14.8	July 14, 1975
Lake Pleasant	Carl Pleasant Dam to County line		July 14, 1975
Mexican Wash*	Confluence with Rowler Wash to ¼ mile west of 72nd Street	.7	July 14, 1975
New River	Confluence with Agua Fria River to ¼ mile north of Pinnacle Peak Road	14.5	January 5, 1976
New River*	¼ mile north of Pinnacle Peak Road to north section line of Sec. 12, T7N, R2E	22.0	July 14, 1975

<u>WATERWAYS OF STRUCTURES</u>	<u>GENERAL LOCATION</u>	<u>RIVER MILES</u>	<u>DATE OF ADOPTION</u>
Painted Rock Reservoir	East along the Gila River north-west of Gila Bend		July 14, 1975
Rowler Wash*	Confluence with Cave Creek to 72nd Street	2.3	July 14, 1975
RWCD Canal	Brown Road to Baseline Road		July 14, 1975
Salt River*	Confluence with Gila River to 27th Avenue	10.5	July 14, 1975
Salt River*	Scottsdale Road to Price Road	2.0	September 29, 1975
Salt River	Price Road to center of Sec. 29, T2N, R6E	9.0	July 14, 1975
Scatter Wash	Skunk Creek Confluence to Black Canyon Highway	4.0	January 5, 1976
Skunk Creek	New River Confluence to Carefree Highway	18.0	January 5, 1976
Sols Wash*	Hassayampa River to Sec. 32, T8N, R4W	4.5	July 14, 1975
Trilby Wash Detention Basin	Extension of Peoria Avenue to Cotton Lane and Grand Ave.		July 14, 1975
Wickenburg Area Washes*	Flying "E" Wash and Powder House Wash	1.8	July 14, 1975
White Tank Detention Basin #3	Southwest Beardsley Canal and Glendale Avenue		July 14, 1975
White Tank Detention Basin #4	Northwest of Van Buren and Jackrabbit Road		July 14, 1975

* Interim Delineations

SECTION VII

NATIONAL FLOOD INSURANCE PROGRAM

NATIONAL FLOOD INSURANCE PROGRAM

Maricopa County's participation in the National Flood Insurance Program began on December 31, 1970 as a result of the Federal Insurance Administrator's approval of a request made by the Board of Supervisors that Maricopa County be declared eligible for flood insurance as authorized by the National Flood Insurance Act of 1968. In order to bring about this approval, the Board of Supervisors passed a resolution dated November 9, 1970 which stated, in part, that the County would adopt land use and control measures designed to reduce exposure to flood losses and that the County would take such other official action as may be reasonably necessary to carry out the objectives of the program. The Flood Control District of Maricopa County was delegated the responsibility, authority, and means to implement the commitments of this resolution.

Admission into the program was under emergency provisions, meaning that the entire unincorporated area of the County was designated as having special flood hazards. The County will remain in this status until a publication of a Flood Hazard Boundary Map (FHBM) which would roughly outline areas of special flood hazard. The next step would normally be the publication of a Flood Insurance Rate Map (FIRM) at which time the County would move from the Emergency Program to the Regular Program. The FIRM is a more detailed version of the FHBM in which areas have been delineated into zones of varying flood hazard. A preliminary FHBM and FIRM for the County have recently been reviewed by this office and by the Los Angeles District, United States Army Corps of Engineers, the authors of the original 1973 Flood Insurance Study on which the maps are based. Both the FHBM and FIRM are presently being revised by Dames and Moore Engineers of Bethesda, Maryland in light of this review and are due to be released concurrently in the near future.

Since admission into the National Flood Insurance Program, Maricopa County has adopted subdivision regulations, zoning ordinances and a system of building permit review which are consistent with criteria set forth by the Federal Insurance Administration (FIA). The District has submitted annual reports to the FIA assuring that it has adopted these land use and control measures and in this way has maintained County eligibility under the program.

A Flood Insurance Study for Maricopa County was undertaken in mid-1976 by the local office of Harris-Toups Corporation under contract with the FIA. The study will take two to three years to complete and will cover 14 communities in Maricopa County as well as selected major washes, creeks, and rivers. A total of 94.3 river miles will be studied using a detailed method and another 146.3 river miles will be studied using an approximate method. Portions of the Salt and Gila Rivers currently having interim delineations will be studied using the detailed method with the result

being an accurate and up-to-date two district floodplain delineation. The Flood Control District has been working with Harris-Toups and the FIA in establishing priorities for the study and in providing technical information necessary to fulfill the requirements of the contract.

SECTION VIII

TABULATED DATA ON COMPLETED STRUCTURES

STRUCTURE	DRAINAGE AREA	STORAGE CAPACITY	SURFACE AREA FLOODWATER POOL	VOLUME OF FILL	MAXIMUM HEIGHT OF DAM	LENGTH OF STRUCTURE	TIME TO DISCHARGE	LOCAL COST	FEDERAL COST	STRUCTURE COMPLETED
Powerline F.R.S.	49.6 sq. mi.	4019 ac. ft.	456 ac.	880,000 c.y.	35 ft.	3.9 mi.	30 days	\$ 4,800	\$ 377,300	1967
Vineyard Road F.R.S.	53.4 sq. mi.	4122 ac. ft.	837 ac.	1,154,400 c.y.	20 ft.	4.5 mi.	30 days	\$ 54,900	\$ 512,000	1968
Rittenhouse F.R.S.	49.6 sq. mi.	3875 ac. ft.	660 ac.	798,800 c.y.	21 ft.	3.0 mi.	30 days	\$ 28,800	\$ 400,000	1969
Guadalupe F.R.S.	1191 ac.	273 ac. ft.	30.4 ac.	175,000 c.y.	32 ft.	1.0 mi.	10 days	\$160,500	\$ 498,000	1975
White Tanks Dam #3	24.1 sq. mi.	2655 ac. ft.	384 ac.	375,000 c.y.	30 ft.	7667 ft.	80 hrs	\$218,287	\$ 199,088	1954
White Tanks Dam #4	10.3 sq. mi.	1036 ac. ft.	221 ac.	175,000 c.y.	20 ft.	6839 ft.	118 hrs			1954
Buckeye F.R.S. Sites 1,2, & 3	58,896 ac.	8000 ac. ft.	2845 ac.	4,100,000 c.y.	33 ft.	16 mi.	10 days	\$103,400	\$3,544,000	1975
McMicken Dam	223 sq. mi.	30,500 ac. ft.	2300 ac.	2,400,000 c.y.	38 ft.	9.4 mi.	4.5 days	\$180,000	\$2,000,000	1956
Dreamy Draw	1.3 sq. mi.	317 ac. ft.	26.7 ac.	83,500 c.y.	50 ft.	1400 ft.	19.5 hrs	\$ 25,000	\$ 388,870	1973
Sunset F.R.S.	384.0 ac.	55 ac. ft.	8.6 ac.	67,800 c.y.	30.5 ft.	500 ft.	7.6 days	\$150,000	\$ 776,700	1976
Sunnycove F.R.S.	864.0 ac.	218.7 ac. ft.	18.0 ac.	111,500 c.y.	50.5 ft.	700 ft.	17 days			1976
Powerline Floodway	LENGTH	AVERAGE BOTTOM WIDTH	AVERAGE CHANNEL DEPTH	VOLUME OF EXCAVATION	VOLUME OF CONCRETE	LOCAL COST	FEDERAL COST		STRUCTURE COMPLETED	
	8.7 mi.	7'	5'	285,800 c.y.	15,534 cy	\$64,000	\$871,000		1968	