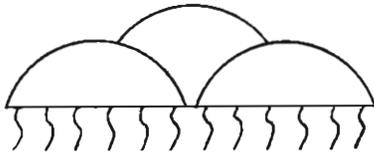


AMAFCA



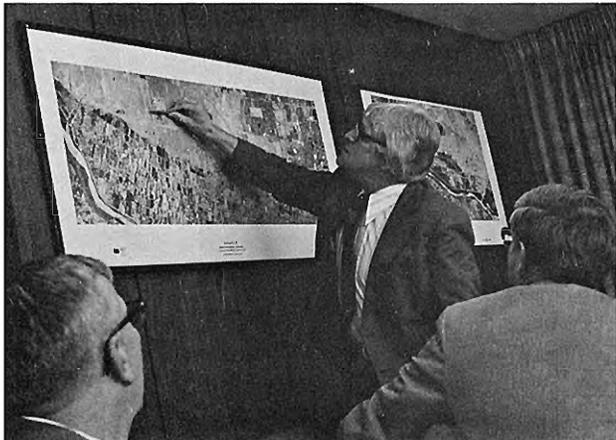
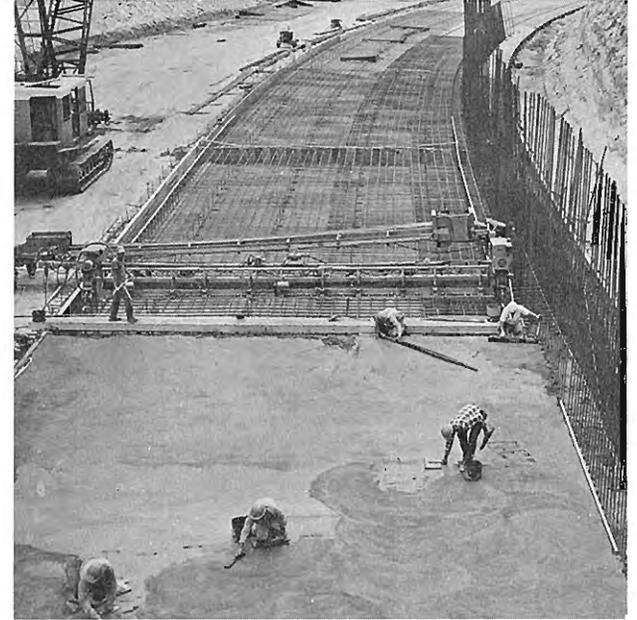
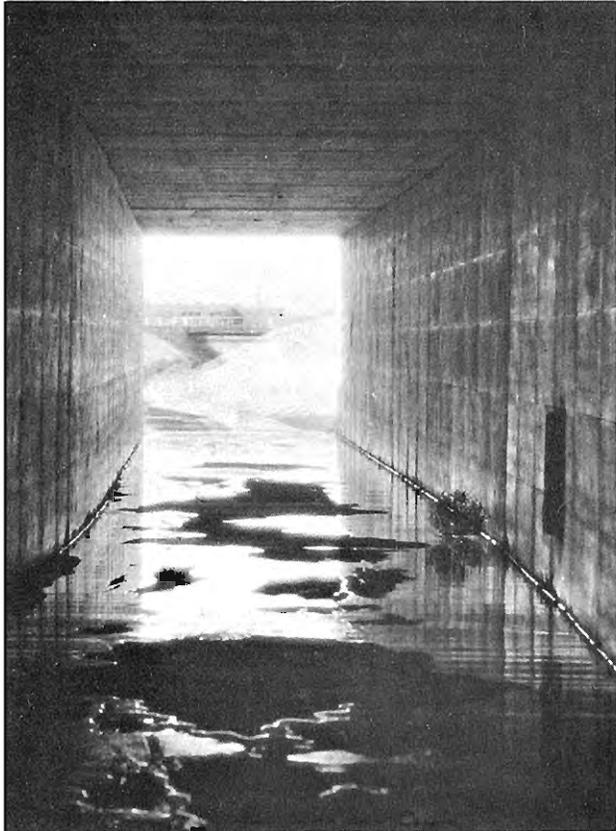
Albuquerque Metropolitan Arroyo Flood Control Authority



Location
2112 Girard Boulevard N.E.
Albuquerque, New Mexico

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Past, Present and Future

July 1974

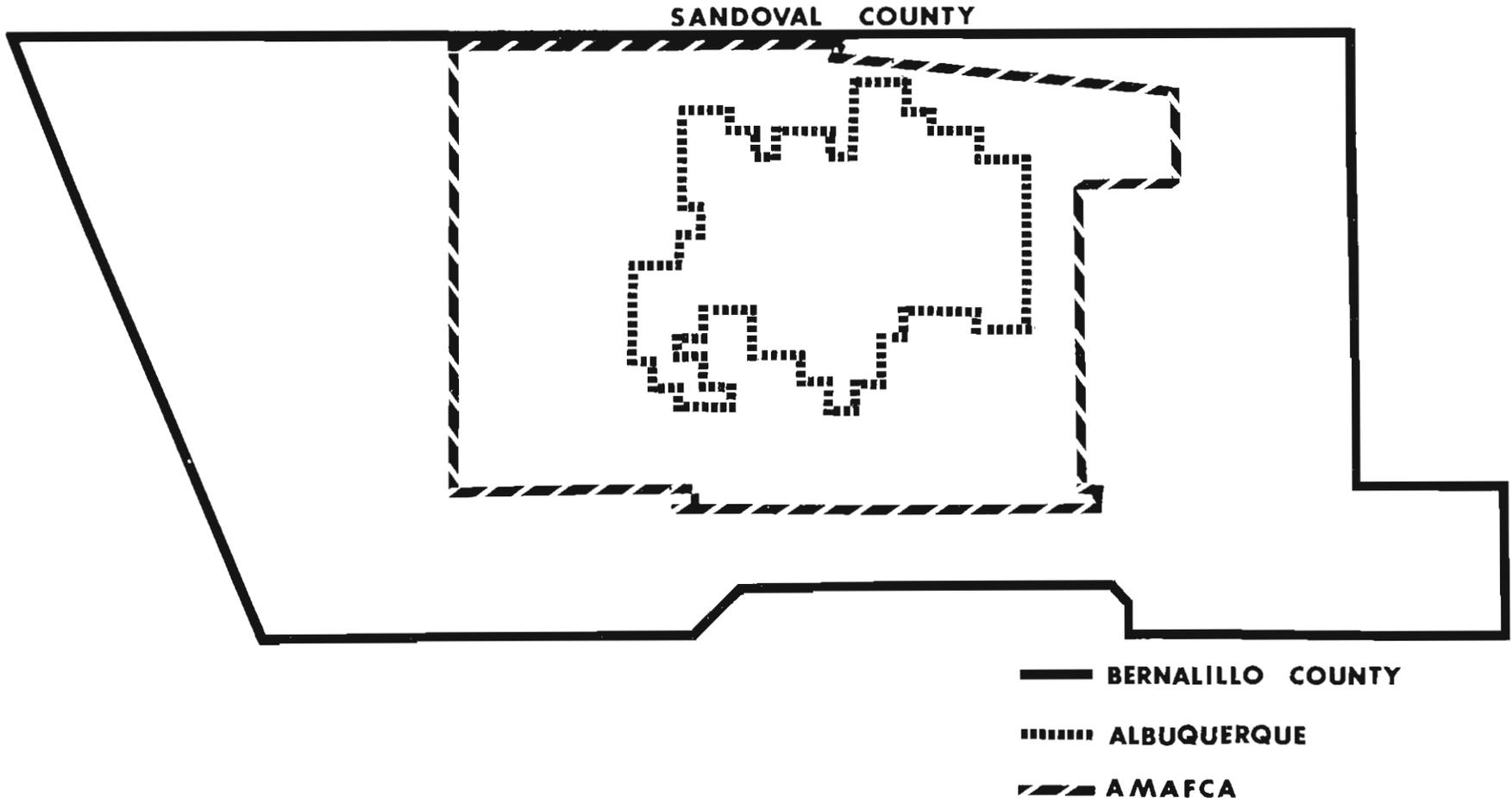
As more and more citizens of the community are coming into contact with the activities of the Albuquerque Metropolitan Arroyo Flood Control Authority, the Board of Directors has sensed a need to prepare a report to the public which would explain why the Authority was created, the things that have been accomplished with taxpayers dollars, its present activities and its objectives for the future. In addition to the text, it is hoped that the accompanying photographs will serve as reminders of past failures to provide adequate flood protection and the need for continuing vigilance on the part of all public and private interests to prevent repetition of past mistakes.

The Authority is studying many developed areas of the community which require flood protection to determine where projects may be most urgently needed. By a combination of regulation and detailed engineering studies and master plans, it is requiring those areas that are now developing to be so designed as to leave room for the passage of flood waters without endangering life and property.

In areas which are not yet developed, as well as in fully built-up sections, there are flood problems that are beyond private means and can be solved only at public expense. The Authority is presently engaged in estimating the costs of required future public construction and in analyzing the ability of the community to bear these costs.



Bernard H. Swinburne
President of Board of Directors



The Authority

The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) is a local governmental subdivision created in 1963 to protect persons and property from flash floods. Its district includes the City of Albuquerque and neighboring areas in Bernalillo County. The Authority collects property taxes to construct and maintain flood control facilities.

Its offices are located at 2112 Girard Boulevard Northeast, in Albuquerque.

Its Accomplishments

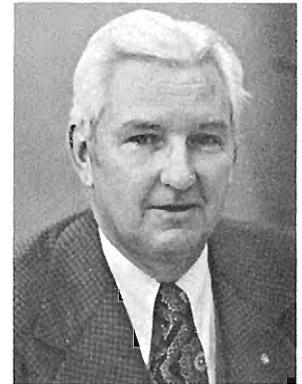
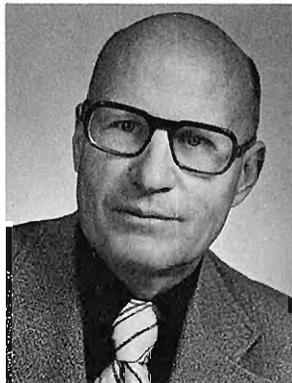
The Authority's efforts in its first ten years were concentrated on the construction of the North and South diversion channels, popularly called the "Twin Ditches". In addition the Embudo Arroyo Canal has been completed and another project is under way near the Calabacillas Arroyo on the West Mesa.

It is now enforcing regulations to prevent building in flood prone areas and making detailed engineering studies of flood problems on the West and Northeast mesas.

Board of Directors

The Authority is governed by a five-member Board of Directors. They are elected for overlapping six year terms, meet at least once a month and receive no compensation for their services.

The first Directors, shown below, were Reginald J. Garcia, Marvin C. May, W.C. Scrivner, Bernard H. Swinburne, and Mrs. Frances M. McCoy. The present Directors are Bernard H. Swinburne, Fred Luthy, Jr., Richard Clough, Frances M. McCoy and William Hereford.





History

In the past, heavy summer rain falling on the mesas collected in the arroyos and discharged through the valley area of Albuquerque into the Rio Grande. As the city expanded from its original valley location on to the mesas, the removal of natural vegetation and the construction of rooftops and pavement increased the amount of storm runoff into the valley. At the same time silt deposits caused by the annual spring runoff in the Rio Grande gradually raised the riverbed through the valley.

By the middle of the 1950's the combination of these processes left the valley, including downtown Albuquerque, lower than the riverbed so that the arroyo waters could no longer flow naturally into the river. This caused increasing amounts of flood damage to valley property.

After a series of floods in the early fifties which caused considerable damage in the heights and valley areas the Army Corps of Engineers was asked to make a study of the problem. The Army Engineers proposed construction of two diversion channels on the east mesa, one north and one south, to collect arroyo flood waters and divert them from the valley area directly into the river.

In 1955 Congress authorized federal funds for the construction of these diversion channels provided that a local government assumed certain responsibilities. Those responsibilities were payment of part of the construction cost, purchase of channel right-of-way, construction of highway bridges and relocation of utility lines.

The Sandia Conservancy District was formed to act as such a local government which would assume these responsibilities. However the method of collecting taxes adopted met such intense opposition from property owners that it was dissolved by court order in 1961.

In order to preserve the Federal grant and to overcome the objections of property owners, the City and County Commissions requested the Legislature to establish a different type of local governmental subdivision and to give it the power to collect the necessary funds through more equitable taxation. This request was met by the unanimous adoption by the Legislature of the "Arroyo Flood Control Act of 1963", which created the AMAFCA.

Immediately after the passage of the act Governor Campbell appointed a five-member Board of Directors to function until the first election. Soon after their appointment, the Board conducted public hearings at which the Government's construction plans were explained and comment sought from the public.

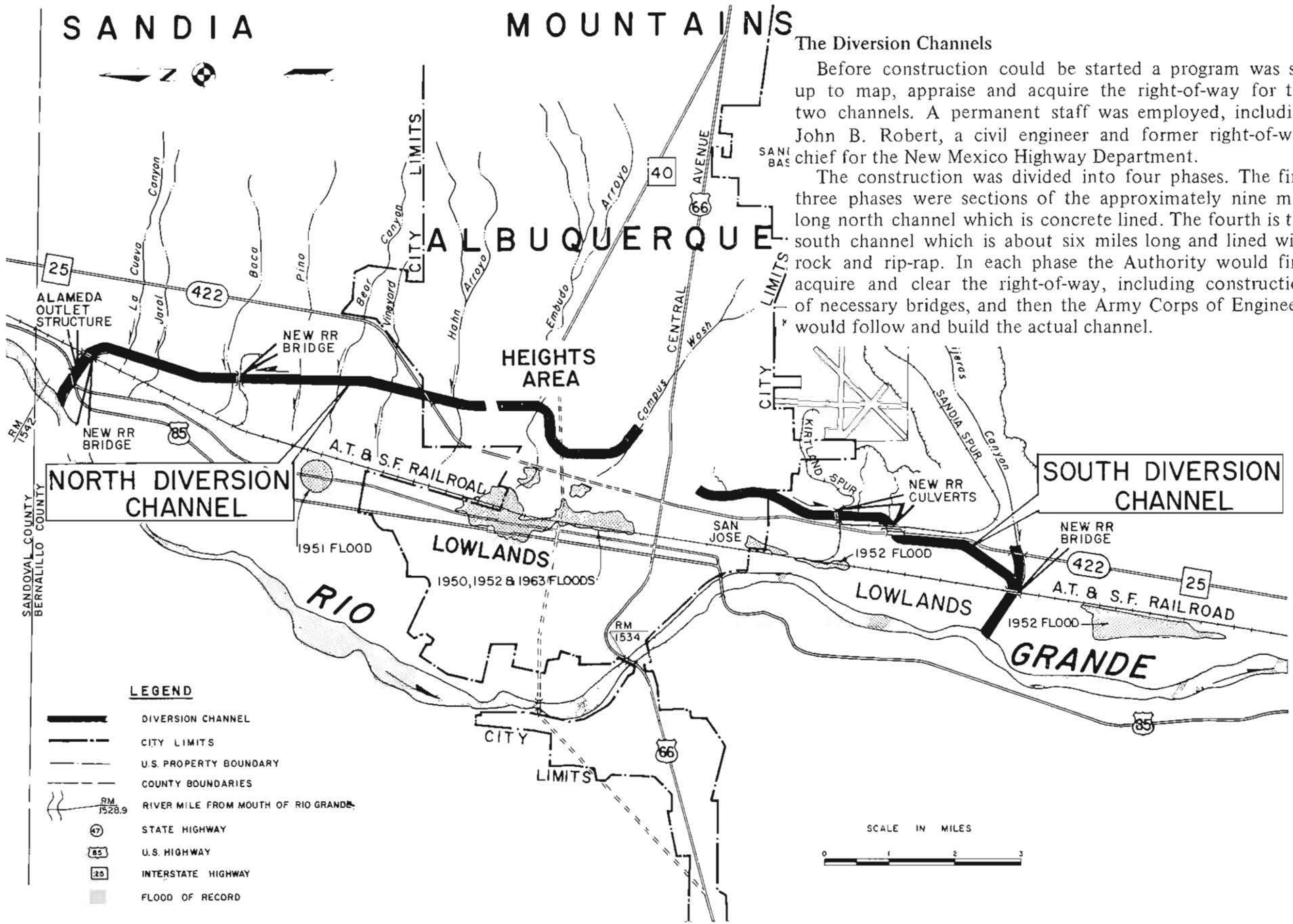
After making some changes in the proposed routing of the channels to avoid buildings and other obstacles and after estimating anticipated local costs, the Board approved the federal plan and called a special election for August 1963.

The voters were requested to permit the Authority to borrow \$9.5 million for the payment of the local share of costs, and for the election of a Board of Directors. The proposed debt would be repaid over a period of years through an increase in property taxes.

The voters overwhelmingly approved the \$9.5 million bond issue and elected the five original directors. In November 1966 a supplemental \$3.5 million bond issue was also approved.

Shortly after the first election the Authority entered into contract with the Government which implemented the federal grant and required the Authority to proceed to acquire right-of-way for the Twin Ditches.

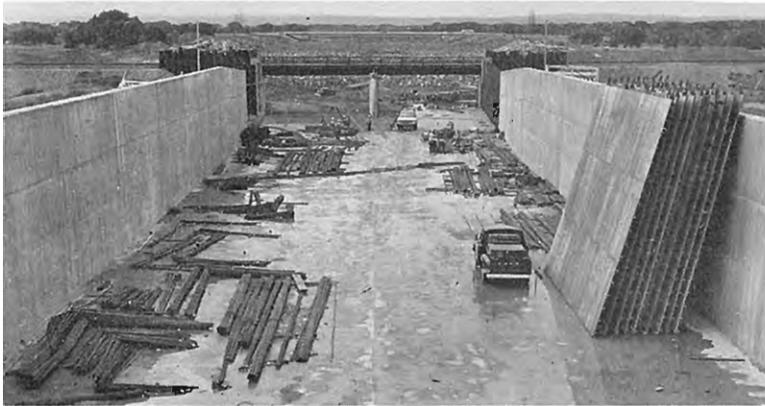




The Diversion Channels

Before construction could be started a program was set up to map, appraise and acquire the right-of-way for the two channels. A permanent staff was employed, including John B. Robert, a civil engineer and former right-of-way chief for the New Mexico Highway Department.

The construction was divided into four phases. The first three phases were sections of the approximately nine mile long north channel which is concrete lined. The fourth is the south channel which is about six miles long and lined with rock and rip-rap. In each phase the Authority would first acquire and clear the right-of-way, including construction of necessary bridges, and then the Army Corps of Engineers would follow and build the actual channel.



North Diversion Channel

The first phase was the channel outlet in the Alameda area. This segment is about one mile long and extends from Edith Boulevard to the Rio Grande.

Phase two began at Montgomery Boulevard and the I-25 Interchange and extended to the outlet. This section gave protection to the north valley from runoff of numerous arroyos, including the Hahn Arroyo.

The third phase, completed in 1969, extended to Lomas Boulevard on the University of New Mexico Campus near the Bernalillo County Medical Center.

As an addition to the Army Corps of Engineers project, the Authority concrete lined a portion of the Embudo Arroyo between Carlisle Blvd. and the north diversion channel.

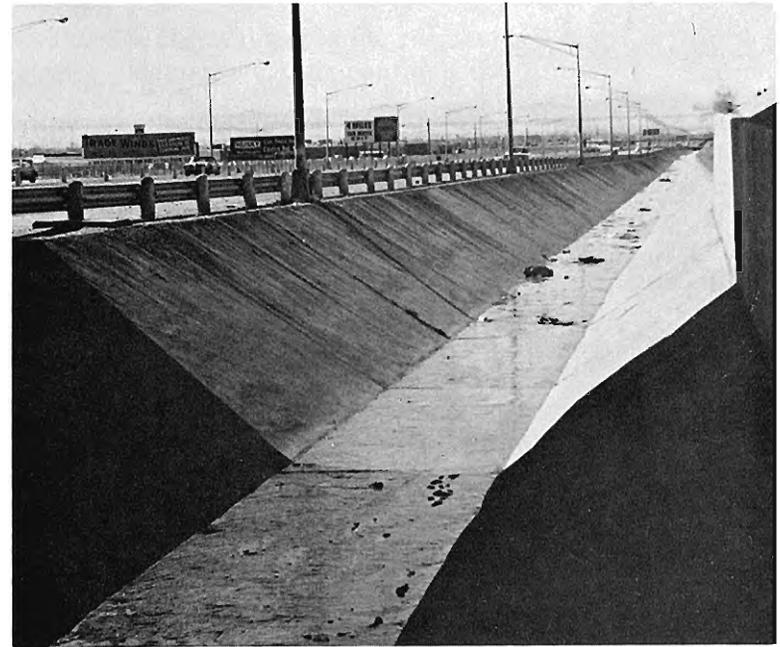
The total cost of the North Diversion channel was \$20,317,000 of which the local tax-payers contributed \$8,284,000. It is designed to carry about 44,000 cubic feet of water per second. As a comparison the Rio Grande in the heavy 1973 runoff was carrying 8,500 cubic feet per second through Albuquerque.

South Diversion Channel

Phase four, the south diversion channel wasn't completed until 1972 because of a freeze in federal funds that lasted several years. The channel begins at Stadium Boulevard on the University of New Mexico campus and runs south along the freeway to Tijeras Arroyo and then extends west to the Rio Grande.

The total cost was \$8,302,000 of which the local taxpayers contributed \$3,126,000.





Embudo Arroyo Channel

Upon completion of the north diversion channel there remained an unlined portion of the Embudo Arroyo extending between Carlisle Boulevard at the west and a discharge tunnel east of the Washington overpass on I-40.

In cooperation with the city public works department this segment of the Embudo Arroyo was rerouted and placed in a concrete channel, partly underground, and an extensive earth moving and street construction to eliminate flooding problems was performed. This project was completed in 1972 at a total cost of \$1,520,000 of which \$1,147,000 was paid by the Authority.

Drainage Regulation

It became apparent during the recent construction boom that the failure of governmental jurisdictions to impose uniform flood protection standards upon developers was resulting in frequent filling and encroaching upon arroyos.

At public hearings held in 1972 the Board proposed a drainage regulation applying to all land owners within the Authority. After receiving numerous constructive recommendations from civil engineers representing various private and public interests such a regulation was adopted in July 1972.

Now a developer is required to employ an engineer who is skilled in solving flood problems to review his development plans and to certify that they will not increase flood damage downstream or on the property itself. Each plan and engineer's report is then reviewed by AMAFCA before construction starts.



Preventive Master Planning

In newly developing areas some arroyos are so large and unpredictable that drainage regulation is not a complete answer and the cost of providing flood protection is beyond the means of private developers. Failure to provide such protection at public expense could result in leaving large useless areas close to existing municipal utilities and services.

In a major effort to strike a proper balance between these competing public and private interests as well as to devise the most cost effective program for long term community management of major drainage ways, the Authority is having detailed engineering studies prepared by consulting engineers for the entire West Mesa and the east mesa north of Montgomery Blvd. After these studies are completed the Board will adopt a master drainage management plan for each basin in these areas. It will serve as a planning tool and provide a means of guiding and controlling development within each basin so that new development does not obstruct major drainage channels or occupy flood prone areas.

While drainage regulation enforcement should reduce the cost to the taxpayer of building flood control works in areas which are beginning to develop, it will not correct serious problems in areas already fully developed. Examples of where houses have been built too close to natural waterways are the Rose Acres subdivision near South Coors Blvd., the Winrock Shopping Center and recently completed subdivisions near Eubank and Tramway Blvds.



Correction of Existing Problems

A review of past practices in this community and elsewhere has led the Board to the conclusion that an ounce of prevention is worth a pound of cure. That is by the enforcement of the drainage regulation, the preparation of detailed engineering studies and master drainage planning before development starts, the costs of acquiring right-of-way through built up sections can be avoided and the construction of expensive concrete structures can be greatly reduced.

The City has requested the Authority to review existing problems in fully developed areas and to undertake, in cooperation with the City and other local governmental jurisdictions the responsibility of constructing those portions of proposed flood control works that are most urgently needed. This construction would be financed in a large part by the issuance, after voter approval, of additional general obligation bonds. The construction program would be coordinated with continued enforcement of the drainage regulation.

Multiple Use

The Board has directed the engineers presently performing master planning work to continue the Authority's multiple use policy. This policy requires flood control right-of-way to also be used, where practicable, for other public uses. Examples are electrical transmission lines along the diversion channels and recreational facilities, such as parks, baseball diamonds and golf courses in ponding basins.

Some of the proposals under consideration are the construction of a golf course in a natural lake bed on the West Mesa and riding trails, nature paths and bicycle ways along arroyos.



CREDITS:

Suzanne Zuris

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United States Army Corps of Engineers

Albuquerque Journal