INFORMATION PAMPHLET

# General Design Conference

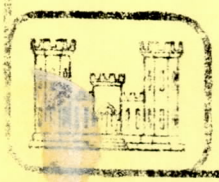
# on

# Arizona Canal Diversion Channel

## New River and Phoenix City Streams, Arizona

MAY 1980

EXTRACT



U. S. Army Corps of Engineers
Los Angeles District

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## ARIZONA CANAL DIVERSION CHANNEL

### Flood Control Plan

3.01 The Arizona Canal diversion channel (see plates 2 thru 7), as described in the Phase I design memorandum, would be just upstream from and nearly parallel to the Arizona Canal. Where possible, the alinement would be such that the left wall or side slope of the channel would be at the north right-of-way line of the canal. The diversion channel would extend from Cudia City Wash near 40th Street at the upstream end to Skunk Creek, a distance of about 17.3 miles. A paved maintenance road would be provided along the north side of the channel. An unpaved maintenance road would be provided along the south side of the channel within the canal right-of-way. At the upstream end, a rectangular concrete channel, extending from about 700 feet west of 40th Street to Dreamy Draw near 12th Street (4.6 miles in length), would have a bottom width ranging from 21.5 to 25.0 feet; from Dreamy Draw to Cave Creek near the Black Canyon Highway (3.5 miles in length), a rectangular concrete channel would have a bottom width ranging from 50 to 60 feet and a depth ranging from 22.5 to 24.5 feet; from Cave Creek to about Cactus Road (4.8 miles in length), a trapezoidal concrete-lined channel would have a bottom width ranging from 60 to 245 feet, a depth ranging from 21 to 23 feet and side slopes of 1 vertical on 2 horizontal; and from Cactus Road to Skunk Creek (4.4 miles in length), a trapezoidal earth-section would have a bottom width of 245 feet, a depth ranging from 19 to 22.5 feet and side slopes of 1 vertical on 5 horizontal. The design capacity of the diversion channel (100-year frequency flood) would range from 6,800 cfs at Cudia City Wash near 40th Street to 36,000 cfs at the Skunk Creek confluence.

3.02 The channel would be entrenched for its entire length to allow side inflow to enter over the channel walls. In local areas where ponding would occur, pipe inlets, with automatic drainage gates when required to prevent back-flow, would be provided. A side channel spillway would be required at Cudia City Wash and at Dreamy Draw and a confluence structure would be required at Cave Creek. Inlet structures would also be required at other major washes such as the 10th Street Wash, the Myrtle Avenue Wash, and Little Dreamy Draw. A safety fence would be provided along the channel walls.

3.03 The Arizona Canal would be relocated to the south at several locations to avoid major developments, such as the Arizona Biltmore Hotel east of 24th Street and the Squaw Peak Filtration plant west of 24th Street. The canal would also be realined near 59th Avenue to eliminate undersirable curves and to miss an existing subdivision. Four new bridges over the Arizona Canal would be required, two at the Arizona Biltmore Hotel, and one each at 59th Avenue and Thunderbird Road. In all instances where the canal is relocated, the Salt River Project requires that the canal be lined with 3-5/8 inches of concrete on the invert and 1-1/2 inches of gunite on the side slopes.

3.04 West of Central Avenue, the channel passes through the Sunnyslope High School athletic field. In accordance with local criteria, schools of this class should have at least 40 acres of land for buildings and grounds. This school presently has 27 acres. An open channel would reduce the area by about 5 acres and would be unacceptable to the school district. Alternatives that were considered included relocation of the canal and channel to the south, acquisition of adjacent property to mitigate the loss of land and relocation of the school to another site, and covering the channel. Relocation of the canal and channel, as well as the acquisition of adjacent property for the school, would require the acquisition of many homes and businesses resulting in additional social impacts. It was determined that to avoid the need of acquiring additional homes and businesses, the channel would be covered at an additional cost between Central Avenue and Dunlap Avenue, a distance of about 2,300 feet. The athletic field would be raised with fill to cover the top slab of the channel. The cost of the cover and fill is considered to be a Federal cost.

3.05 West of Cactus Road, the channel would undergo a transition from a concrete lined trapezoidal channel to an earth-lined channel. The wider channel, which can be developed for recreational uses, is strongly supported by the City of Glendale through which it passes.

3.06 Bridges would be required at all streets and highways that presently cross the canal. Twenty-seven bridges would be required--one each at 32nd Street, 24th Street, Maryland Avenue, Glendale Avenue, 16th Street, 12th Street, Northern Avenue, 7th Street, Central Avenue, Dunlap Avenue, 7th Avenue, 19th Avenue, Metro Parkway, 35th Avenue, Peoria Avenue, 43rd Avenue, 51st Avenue, Cactus Road, 59th Avenue, Thunderbird Road, and 67th Avenue; four at Black Canyon Highway (Interstate 15); and two at the Arizona Biltmore Hotel.

## Recreation Plan

3.07 The recreation plan for the diversion channel is based on the development of a safe, functional, and esthetically pleasing trail system for equestrians, hikers, joggers, and bicyclists. The paved service road on the north side of the channel would be used by hikers, joggers, and bicyclists, while the unpaved service road south of the channel would be used by equestrians. Safety has been a primary consideration in the planning of the trail system. The trails would dip into the channels at major traffic arteries so the recreationists could travel several continuous miles without stopping for automobile traffic. Three half-acre rest areas would be provided along the channel at approximately 5-mile intervals. These landscaped areas would contain watering troughs, hitching posts, bicycle racks, picnic tables, and comfort stations.

3.08 The earth-bottom trapezoidal portion of the diversion channel would be developed as a recreational parkway with activity areas linked by a system of hiking, jogging, bicycling, and equestrian trails. The parkway would be approximately 500 feet wide and 4.4 miles long.

Recreation facilities in the parkway would include a total of 90 picnic sites, a theater-in-the-round that would seat 200 persons, a children's playground, and multiple-use court and athletic fields. Also planned are a 28-target archery course, an equestrian training center, and a natural resource appreciation area. Local interests plan to develop a golf course at the easternmost part of the parkway. Landscaping would be established on the slopes of the parkway and at selected locations along the channel invert.