

RIVERSIDE COUNTY FLOOD CONTROL  
AND WATER CONSERVATION DISTRICT

Riverside, California

SALT CREEK

MASTER DRAINAGE PLAN

ZONE 4

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DAVID P. ZAPPE  
General Manager-Chief Engineer

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## Section I - Purpose

This Master Drainage Plan addresses the current and future drainage needs for an 8.2 mile reach of Salt Creek extending southwesterly from Cawston Avenue in the City of Hemet, to a point west of the community of Winchester near the intersection of Olive Avenue and Lindenberger Road. The Salt Creek Channel plan presented herein will serve as a long term guide for design and construction of the ultimate flood control channel facility. When completed, the channel will alleviate regional flooding along Salt Creek and will provide an outlet for local drainage facilities.

## Section II - Scope

The overall tributary drainage area covered by this plan is approximately 89 square miles in size. Relatively steep foothills border along the south, east and northwest of the watershed, surrounding a relatively flat valley floor (see Figure 1).

The scope of this Master Drainage Plan includes:

1. Determination of the quantity and points of concentration of storm runoff along the channel.
2. Investigation of alternative channel sections.
3. Preparation of supporting cost estimates.

## Section III - General Discussion

The Salt Creek watershed addressed herein encompasses nearly all of the land area within the City of Hemet, and many square miles of surrounding unincorporated territory of Riverside County. It is comprised of two primary sub-watersheds.

Stormwater emanating from the largely undeveloped southeastern sub-watershed drains into the upstream end of an existing, fully improved reach of Salt Creek Channel near Lyon Avenue. This improved reach ends at Cawston Avenue, and Salt Creek is unchannelized downstream to Patterson Avenue where Salt Creek confluences with Hemet Channel. Stormwater discharging from the northeastern sub-watershed, which is primarily the developed area of Hemet, is collected and conveyed to the District's existing interim Salt Creek Channel at Patterson Avenue via the Hemet Channel tributary. The combined Salt Creek flows continue westerly through the Winchester area in the interim channel, to the District's existing ultimate-capacity Salt Creek Channel near the intersection of Olive Avenue and Lindenberger Road. The upstream

terminus of this existing ultimate channel facility defines the downstream limit of the Master Drainage Plan study area. Salt Creek runoff eventually drains into the Railroad Canyon Reservoir in the City of Canyon Lake, approximately 5.5 miles downstream.

Hemet Channel, in the vicinity of Salt Creek Channel, is an unlined interim channel facility having limited conveyance capacity. It must eventually be improved to ultimate design standards, but it is not a part of this project. The ultimate Hemet Channel facility has been addressed as part of the District's "Master Drainage Plan for the Hemet Area (Addendum)" report, dated July 1977.

An overall, comprehensive "Salt Creek Master Plan", prepared under the direction of the District in 1974, along with subsequent District studies prepared in conjunction with alternative alignment proposals recommended by others, formed the basis for the recommendations and conclusions set forth in this Master Drainage Plan report. The recommended project is consistent with the existing segments of Salt Creek Channel which are constructed to ultimate design standards.

This particular Master Drainage Plan was prompted by the ongoing growth and development in lands adjacent to Salt Creek, and by the need to formalize funding for the Salt Creek Channel component of the major Newport Road Realignment project now being headed by the Metropolitan Water District of Southern California. This regional road relocation project is a critical element of Metropolitan's overall Eastside Reservoir project and requires resolution of existing Salt Creek flooding problems in order to ensure an all-weather corridor. The channel is being constructed in joint effort involving Metropolitan, the District, the County of Riverside and the City of Hemet.

#### Section IV - Criteria

The Salt Creek Channel is proposed to convey 100-year frequency storm runoff. The maximum practical freeboard from existing ground has been considered in order to best facilitate side drainage.

#### Section V - Hydrology

Hydrology for the Salt Creek Channel proposed herein is from a report entitled "Flood Plain Information, Salt Creek, Hemet to Railroad Canyon Reservoir, Riverside County, California", dated June 1971, as prepared by U. S. Army Corps of Engineers. The 100-year frequency peak flow rates for Salt Creek in cubic feet per second (cfs) used in this study are as follows:

9,200 cfs - Cawston Avenue to Hemet Channel confluence

11,700 cfs - Hemet Channel confluence to Olive Avenue/  
Lindenberger Road

#### Section VI - Existing Drainage Facilities

Presently, Salt Creek Channel is fully improved to 100-year design standards between Lyon Avenue and Cawston Avenue in the City of Hemet (see Figure 2). This uppermost segment was constructed in separate phases by and for the benefit of adjacent major developments. It is a "soft bottom" channel with concrete slope protection on both sides, and is currently owned, operated and maintained by the City of Hemet.

An interim Salt Creek Channel facility, constructed and maintained by the District, exists between Patterson Avenue and a point just downstream of Olive Avenue westerly of Lindenberger Road.

Downstream of Olive and Lindenberger, Salt Creek Channel has been constructed to full 100-year design capacity to Newport Road, which covers most of the remaining distance to Railroad Canyon Reservoir. A part of this full capacity reach is incorporated in the Lusk Development's golf course at Menifee.

Three improved Salt Creek road crossings exist within the specific reach addressed by this report. Triple-cell 14' wide X 8' high reinforced concrete box (RCB) facilities are located at both Lindenberger Road and at Rice Road, and a double-cell 14' wide X 10' high RCB is located at Winchester Road (Highway 79). Neither of these road crossing structures is sized to convey the entire 100-year design discharge rates.

#### Section VII - Recommended Drainage Improvements

The recommended improvements include the construction of an unlined channel, to extend from the existing channel segment at Cawston Avenue westerly approximately 8.2 miles to a point of connection with the existing channel facility near Olive Avenue and Lindenberger Road. The proposed channel section has a bottom width of 230', a depth that varies from 8' to 12', and sideslopes generally set at 14:1 (14' horizontal to 1' vertical). This configuration, along with the very mild channel profile gradient, provides the opportunity for compatible recreation, park, greenbelt and/or open space joint-usage. A typical channel section is shown on Figure No. 3.

Also included in this plan is the upgrading of the existing road crossings at Lindenberger, Rice and Winchester Roads to full 100-year conveyance capacity. To accomplish this, 12 - 14' wide X 8' high RCB cells are proposed to be added to the existing crossings at both Lindenberger and Rice Roads, and 13 - 14' wide X 10' high RCB cells are

proposed to be added to the existing crossing at Winchester Road.

#### Section VIII - Alternative Studies

Numerous alternatives were developed and analyzed as part of the previous studies discussed in Section III herein. These alternatives addressed a variety of channel alignments, profile grades and cross section configurations. Rock, concrete and unlined sideslopes were all considered. Hydraulic and economic feasibility as well as community and environmental values formed the basis for final evaluation of the various alternatives.

The Master Drainage Plan proposed herein provides a composite of the best features of all of the alternatives studied. The plan presents the most practical and economical solution for the control of major flood flows along Salt Creek consistent with the planning goals of both Riverside County and the City of Hemet.

#### Section IX - Estimated Costs

Cost estimates were based on current construction costs as researched by the District, and the summaries are shown on Table I below. Channel maintenance costs and irrigation, landscaping, installation and maintenance costs associated with potential recreational/joint use of Salt Creek Channel are not included in the cost estimates.

TABLE I  
Master Drainage Plan for Salt Creek Channel

Cost Summary

<u>Facility</u>	<u>Construction Cost*</u>	<u>Right of Way</u>	<u>Total</u>
Salt Creek Channel	\$ 6,072,000	\$ 4,868,000	\$10,940,000
Lindenberger Road Crossing	828,000	-0-	828,000
Rice Road Crossing	828,000	-0-	828,000
Winchester Road Crossing	<u>885,000</u>	<u>-0-</u>	<u>885,000</u>
TOTAL	\$8,613,000	\$4,868,000	\$13,481,000

\*Includes 31% for Engineering, Administration and Contingencies.

Section X - Conclusions

Based on the studies and investigations made for this report, it is concluded that:

1. The Salt Creek area has suffered flooding problems in the past and the damages incurred are expected to increase as the area continues to urbanize.
2. A drainage system is required to safely convey storm runoff through the study area to the existing Salt Creek Channel downstream of Olive Avenue.
3. The total cost of the recommended improvements, including right of way, engineering, contingencies, and administration is estimated to be \$13,481,000.

Section XI - Recommendations

It is recommended that:

1. The Salt Creek Master Drainage Plan as set forth herein be adopted by the Riverside County Flood Control and Water Conservation District Board of Supervisors.
2. The Salt Creek Master Drainage Plan be used as a guide for all future developments in the study area and that such developments be required to conform to the plan to the extent possible.
3. The right of way required for the plan be protected from encroachment.

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