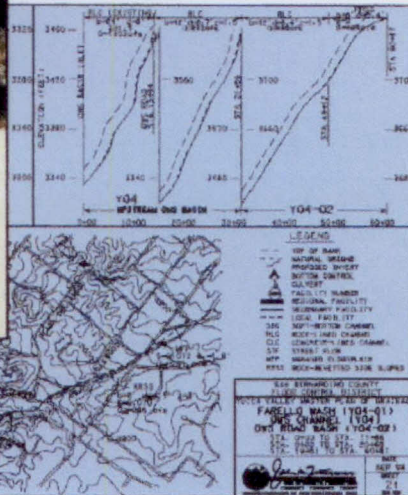


TOWN OF YUCCA VALLEY MASTER PLAN OF DRAINAGE

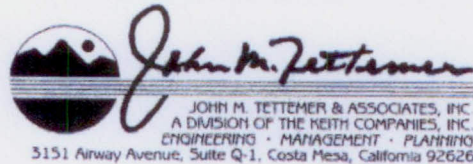
FINAL REPORT



June 1999

Prepared For:
The San Bernardino County
Flood Control District

Prepared By:
Max Vahid, President
Alan A. Swanson, Senior Vice President
John M. Tettemer, Consultant



YUCCA VALLEY MASTER PLAN OF DRAINAGE

FINAL REPORT

February 1999
Revised April 1999
Revised June 1999

Prepared for:

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EXECUTIVE SUMMARY

Background

With the incorporation of the Town of Yucca Valley (Town), and with the continued growth in the area, there has been increased interest in community planning. An important element in the planning and development of the Town is the definition of needed flood control improvements and the management of floodplains. In response to the need for flood control planning and floodplain management, the Master Plan of Drainage (MPD) within the Town of Yucca Valley has been prepared. The development of the Master Plan was directed and financed by the San Bernardino County Flood Control District (District) in accordance with Contract Number 93-622. The limits of the study area are shown on Figure 1.

The preparation of the Master Plan was divided into two phases. The objective of Phase I was to develop a policy report and conceptual Master Plan (Policy Report). This report established the policies and concepts to be applied in preparing the detailed MPD based on published Town goals and objectives. The conceptual Master Plan described in the Policy Report incorporated those policies and concepts and considered input received from the District, the California Department of Fish and Game (CDFG), U. S. Army Corps of Engineers (USACOE), Town staff, the Yucca Valley General Plan Advisory Committee (GPAC), the Hi-Desert Water Agency and the Mojave Water Agency. Consensus was reached among the parties concerning the Master Plan concept which would be the basis for development of the detailed MPD. The report was published in February 1995, and was approved by the District and accepted by the Town Council shortly thereafter. A copy of the report entitled "Yucca Valley Master Plan of Drainage, Policy Report and Conceptual Master Plan" is included in Appendix A.

Following adoption of the Policy Report, the Phase II studies were initiated. These studies included detailed hydrologic, hydraulic and facility sizing calculations for the regional, secondary, and local drainage systems, the preparation of plan and profile drawings showing the proposed facilities, and the development of preliminary engineering and construction cost estimates.

Study Results

Master Plan drainage facilities were developed and sized for both non- detained and detained conditions. For the detained condition, detention basin sites were identified, basin concepts developed and flood routing studies performed to determine flood peak reduction benefits, i.e., reduction of regional system facility sizes downstream of the basins.

Cost estimates were prepared for both the non-detained and detained conditions. A summary report documenting the criteria, methodology, unit cost data, and total system costs was prepared and previously approved by the District. A copy of the report entitled "Yucca Valley Master Plan of Drainage, Cost Estimate Summary Report " is included in Appendix A.

The results of the cost estimating study were as follows:

<u>Type of Flood Control System</u>	<u>Estimated Engineering And Construction Cost</u>
Non-Detained Flood Control System	\$121,303,000
Detained Flood Control System	\$ 102,016,000

Based on the results of the cost study, the use of detention produces the most economical Master Plan of drainage for the Town of Yucca Valley.

Study Recommendations

Based on the adopted Policy Report, and following the completion of detailed hydrologic and hydraulic studies, it is recommended that the District and the Town of Yucca Valley:

1. Accept the Master Plan of Drainage presented in this report as the guideline for future planning, design, and construction of regional, secondary, and local drainage facilities within the Town of Yucca Valley. The Master Plan facilities, including detention basin facilities, are shown on Figure 2. Detailed Plan and Profile drawings showing facility sizing, type of conveyance, and peak discharge are shown on Figures 5 through 36. Detention Basin Conceptual drawings are shown on Figures 37 through 42.

2. Encourage the planning, design, and construction of channel improvements and detention basins which:
 - a) utilize rock for streambed and bank stabilization in order to preserve, to maximum extent practical, the natural desert environment of Yucca Valley.
 - b) provide for infiltration of storm water to enhance ground water recharge, particularly within recommended detention basin sites.
 - c) provide for wildlife corridors within improved channels and along floodplain managed drainage courses, wherever appropriate.
 - d) provide for recreational use, such as riding and hiking trails, wherever such use is appropriate, considering flood protection needs and public safety issues.

3. Work together to formulate Town ordinances that appropriately regulate development in areas designated for floodplain management which will assure public safety and adequate flood protection of property.

A recommended priority list for implementation of the Master Plan facilities is presented in Section VII of this report.