

MARIN COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

PRELIMINARY REPORT
ON
STINSON BEACH FLOOD CONTROL ZONE #5
MASTER FLOOD PROTECTION PLAN

With the advice of the Flood Control Zone #5 Advisory Board, the Board of Supervisors of the Marin County Flood Control and Water Conservation District, in July, 1970, authorized development of a master flood control plan for the Eskoot Creek flood plain.

The staff of the Flood Control Section of the Marin County Department of Public Works has studied the flooding problems and possible solutions thereto and herein summarize their findings. Hydrological and hydraulic calculations, together with field observations, discussions with residents, comments from maintenance personnel, and past meetings of the Advisory Board have contributed to this effort.

This preliminary report is to be read in conjunction with staff presentations for the April, 1971, Advisory Board meeting.

CAUSES OF FLOODING:

Factors which contribute to flooding and flood damages along Eskoot Creek are as follows:

- a) Storm water runoff;
- b) Tides and winds which periodically combine to yield very high waters in Bolinas Lagoon;
- c) Inadequate channel capacity;
- d) Large amounts of upstream sedimentation;
- e) Floating debris;
- f) Inherently low-lying land with the improvements subject to flooding thereon;
- g) Combinations of the above items.

POSSIBLE SOLUTIONS FOR MASTER PLAN DEVELOPMENT:

The following possible plans entail legal, technical, environmental and economical considerations which deserve review by both the Advisory Board and the Board of Supervisors prior to selection of any one plan. The

costs to the flood control zone for each plan are rough estimates based on a present worth method (i.e., assuming funds to be available for immediate total plan implementation). This cost basis allows for comparison of alternates. Refer also to the last section of this report concerning flood damages.

Plan "A": This plan consists of the following:

1. A bypass channel through the State Park which would direct approximately one-half of the flood flow from Eskoot Creek directly to the Pacific Ocean. The existing creek would then be adequate to handle the remaining water.
2. A levee system along the lower reaches of Eskoot Creek to block intruding high tide waters which come from Bolinas Lagoon.
3. Pumping facilities behind the levees to serve the low-lying areas during times of coincident high tides and rains.
4. Selective channel modifications to Eskoot Creek above the bypass inlet.
5. Maintenance of facilities and development controls as required.

The estimated cost to implement Plan "A" is \$800,000.

Plan "B": This plan consists of the following:

1. Channel widening, deepening, and modifications on Eskoot Creek to handle full flood flows.
2. A levee and pumping system as in Plan "A".
3. Same as Item 5 in Plan "A".

The estimated cost to implement Plan "B" is \$1,055,000.

Plan "C": This plan consists of the following:

1. A bypass channel through the park as in Plan "A".
2. Flood Plain Zoning together with attendant development controls, and maintenance.

Under this procedure, Eskoot Creek could be left in its natural state and all surrounding features (roads, land, housing, etc.) eventually would be raised to a level which would be safe from tidal flooding. Raising of surrounding features would not be a responsibility of the flood control zone.

The estimated cost to implement Plan "C" is \$224,000.

Plan "D": This plan consists of flood plain zoning alone. It would require raising of all land and improvements within the flood plain while reserving a floodway over and adjacent to the existing alignment of Eskoot Creek. As in plan "C" raising of surrounding features would not be a responsibility of the flood control zone. Maintenance of facilities would be as required.

The estimated cost to implement Plan "D" is \$198,000.

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Variations and modifications of the above plans are possible and considerations of alternates should be given during final plan preparation.

ESTIMATED FLOOD DAMAGES:

This is a very difficult cost to estimate due to indeterminate values relating to possible loss of life, inconvenience of residents, land depreciation (or relatively slow appreciation), etc. However, should a flood plan not be enacted it is estimated that average annual flood damage related to roads, bridges, dwellings, etc. would be in the range of \$15,000 to \$30,000 per year. The present worth basis of this range (for comparison with the various plans) using a 5% interest rate yields \$300,000 to \$600,000.