

Maps showing historic flooding in the San Fernando Valley, California

1934 to 1956

by

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Menlo Park, California

This report presents maps of field observations of flooding to depict the number of times areas within the San Fernando Valley were inundated during major storms in the years 1934-1956. The flood data are compiled on seven U.S.G.S. 1:24000 7.5' topographic maps. The text describes the sources of the data, the methods used in the compilation, and some limitations concerning the data and its interpretation. This report provides public access to these basic data and as closely as possible duplicates the original set of data which is deteriorating with age. Interpretive studies prepared for the U.S.G.S. Earthquake Hazards Reduction Program incorporate these data and other corroborative information to help identify areas underlain by very recent alluvial deposits.

We obtained the flood data from files of the Los Angeles County Flood Control District (LACFCD). From 1934 to 1956, during or soon after major storms, LACFCD workers mapped and partly described flooded areas to gather basic data essential to design storm drainage networks. Table 1 lists approximate dates of storms and credits LACFCD workers for the areas they mapped. The base maps are U.S.G.S. 1:24000 6' topographic maps of Los Angeles County; the areas flooded are color-coded using crayon or pencil according to the year in which the inundation occurred. The original LACFCD maps sometimes include notes of observations written by the workers.

To compile the flood data, we traced the "flood units" shown on the LACFCD maps onto a set of 6' quadrangles and copied the field notes for reference. In transferring these data to modern 7.5' topographic maps, (figure 1 cross-indexes the 6' and 7.5' quadrangles) we show the number of instances an area was flooded from 1934-1956, rather than the year each area was observed to have flooded. The patterns of flooding are such that a number of areas have been inundated repeatedly, though not all in the same years.

Presenting these data to show the number of times an area flooded rather than the specific year a flood occurred identifies the youngest parts of the basin; superimposing recurring flood patterns effectively reduces the localized storm effects. Moreover, this presentation of the data is simplified and therefore easier to read.

The condition of the original data set required some interpretation. We believe persons using these maps should be aware of the changes we have instigated. For example, on some of the original LACFCD maps the colored pencil lines and shading have faded and it is difficult to determine the mapped boundaries of flooded areas, an especially acute problem on the Zelzah 6' quadrangle for the years 1943 and 1944. Therefore flooded areas shown on our maps may be minimum areas, if the original colored lines were too faint to be seen during the transfer to our maps. Another difficulty with the colored pencil was that colors were sometimes difficult to discriminate in areas showing repeated inundation. The blend of overlapped colors sometimes posed a problem in identifying the specific years of flooding. In general, we were able to determine the number of times an areas was flooded, which is how we present the data.

There was a lack of consistency among workers from year to year, particularly concerning the use of map symbols, that required us to make some assumptions in order to compile the maps. For example, not all workers identified the patterns and symbols they used to depict the flooded areas. Thus we followed the convention of patterns and symbols identified by some workers whenever the same or similar patterns and symbols were used without an explanation by other workers. Also, adjoining quadrangles mapped by different workers show artificial boundaries imposed on the flood patterns by the edges of the 6' quadrangles, which we make no attempt to rectify.

These maps show the areal extent of flooding as mapped by LACFCD workers. Patterns of runoff depend on many factors which vary with time, including the intensity and duration of rainfall, antecedent precipitation, the condition of the ground surface and the path of the storm. The data we present are a cumulative result of all these variables; to identify the effect of each component is outside the scope of this report.

We consider areas inundated repeatedly during the years of record to be geomorphically active and likely to contain the most recent sediments in the San Fernando Valley. This interpretation is corroborated by interpretation of aerial photographs taken soon after storms which clearly show evidence of scouring and deposition in locations corresponding to areas shown as inundated by LACFCD workers.

Man's successful efforts to mitigate flood hazards may be apparent as the size of the areas flooded decreases from the 1930's to the 1950's. Additional effects of structures on the patterns of flooding include channelized runoff along streets, and fan-shaped splays where water has breached channels, drains, and man-made levees such as railroad embankments. We emphasize that these maps present data on flooding as observed in the past and should not be used to predict areas of potential inundation, especially in view of drainage modifications made by federal, state, county and city flood control agencies.

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TABLE 1. LACFCD field workers and approximate dates of storms in the San Fernando Valley, by 6' quadrangle.

6' quadrangle	Year	Approximate dates of storms	Field <sup>2</sup> worker	Dates mapped <sup>3</sup>
Burbank	1934	Jan 1	C. E. Bollinger	
	1941	Feb-Mar	Bollinger	
	1952	Jan 15-18	Blakely	
	1954	Feb 13	Luce	
Chatsworth	1934	Jan 1	Luce	
	1943	Jan 1	Luce	
		Jan 21-23		
	1944	Feb	Luce	
Dry Canyon	1938	Feb 7-Mar 2	C.E. Bollinger	3/2
	1941	Feb-Mar	Bollinger	
	1943	Jan 1	Bollinger	1/22 to 1/23
		Jan 21-23		
	1952	Jan 15-18	Blakely	
	1954	Feb 13	Luce	
Glendale	1934	Jan 1	Bollinger	
	1938	Feb 7-Mar 2	Bollinger	March
	1941	Feb-Mar	Bollinger	
	1952	Jan 15-18	Blakely	
	1954	Feb 13	Luce	
	1956	Jan 25-26	(no credit given)	
Pacoima	1934	Jan 1	J. W. Luce	
	1938	Feb 7-Mar 2	Luce & Miller	3/5 to 3/8
	1941	Feb-Mar	Luce	
	1943	Jan 1	Luce	
		Jan 21-23		
	1956	Jan 25-26	J. W. Luce	
Reseda	1934	Jan 1	C. E. Bollinger, Prickoff & Luce	March
	1938	Feb 7-Mar 2	C. E. Bollinger	3/15
	1941	Feb-Mar	Bollinger	
	1943	Jan 1	Bollinger	
		Jan 21-23		
	1946	Dec 25-26	(no credit given)	
	1952	Jan 15-18	Blakely	
	1954	Feb 13	Luce	

Sunland	1934	Jan 1	John W. Luce	3/4 and 4/4
	1938	Feb 7-Mar 2	Luce	
	1943	Jan 1	Luce	
		Jan 21-23		
	1944	Feb	Luce & Turner	
	1952	Jan 15-18	Blakely	
	1956	Jan 25-26	District 7-Hyde	1/25
Sylmar	1934	Jan 1	Luce	
	1938	Feb 7-Mar 2	Luce	
	1941	Feb-Mar	Luce	
	1943	Jan 1	Luce	
		Jan 21-23		
	1944	Feb	Luce & Turner	
Van Nuys	1934	Jan 1	Luce	
	1938	Feb 7-Mar 2	Luce	Feb-Mar
				Bollinger
	1941	Feb-Mar	Bollinger	
	1952	Jan 15-18	Blakely	
	1954	Feb 13	Luce	
	1956	Jan 25-26	Blakely	
Zelzah	1934	Jan 1	Luce	
	1938	Feb 7-Mar 2	Luce by Miller	
	1941	Feb-Mar	Luce	
	1943	Jan 1	Luce	
		Jan 21-23		
	1944	Feb	Luce & Turner	
	1952	Jan 15-18	Blakely	
1956	Jan 25-26	District 7-Hyde		

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<sup>1</sup>As noted in LACFCD records

<sup>2</sup>Most workers identified by last name only

<sup>3</sup>Not available for most workers

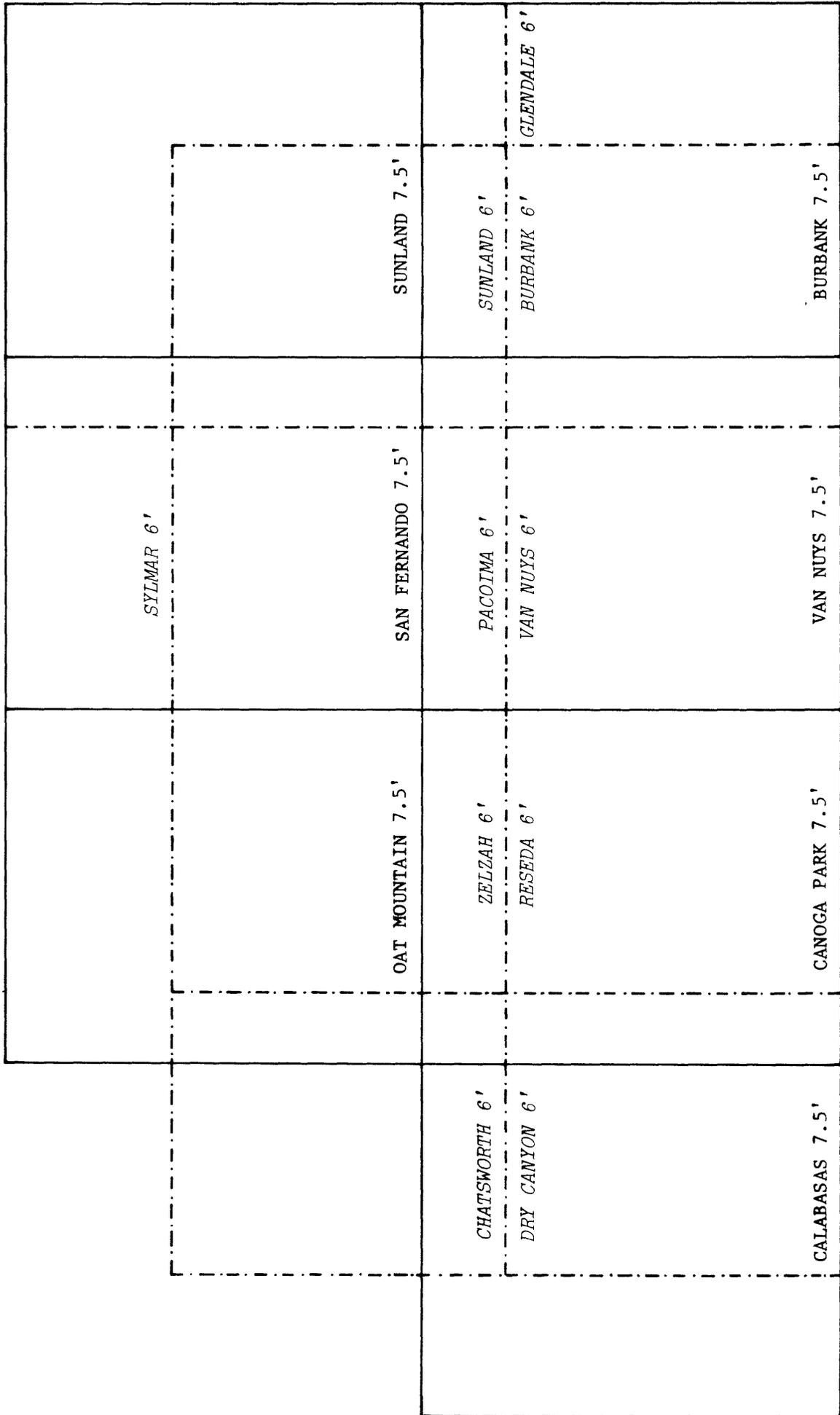


FIGURE 1. Cross-index of 6' and 7.5' quadrangles, San Fernando valley.