Historical Perspectives on flooding in Southern California

Alluvial Fan Task Force
Plenary Meeting 1

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Major Points

- Historical information about flooding is limited with records dating back to only the late 1700’s.
- High total rainfall does not always equal flooding.
- Periodic flooding is normal.
- Fires make floods worse.
- Small isolated events floods can cause major damage.
Total yearly rainfall does not always equal major flooding.

* Indicates major flood year.
Periodic Flooding is normal
Southern California Great Floods

- 1825
- 1862
- 1885
- 1916
- 1938
- 1969
- 1980
- 1998
- 2005
FIGURE 3  Flood years and yearly rainfall at Santa Ana since 1769.
A. SAN DIEGO RIVER AT SAN DIEGO, AFTER FLOOD OF JANUARY, 1916.

Showing damage to county and Atchison, Topeka & Santa Fe Railway bridges.
1916 flood, San Bernardino
1938 Flood, Colton
1969, Mojave River
1969 Flood, San Bernardino Valley
1980, Ventura
Fires in watersheds can create flooding conditions

Wildfires, 2003, San Bernardino and San Gabriel Mountains
Small isolated events can cause big problems

1934, La Canada
Van Nuys, 1952
1904, San Bernardino

Notice alluvial fans and natural water ways in the unpopulated valley
2007, San Bernardino

Notice same alluvial fans with much higher population, and burned watershed
Summary

- Historical records indicate that large amounts of rain in a given year do not necessarily trigger flooding.
- Historical records suggest that Southern California has a history of periodic flooding on alluvial fans and downstream alluvial floodplains.
- Historical records reveal that high-velocity, debris-laden flows on alluvial fans are often triggered by a series of storms following wildfires at higher elevations.
- Historical records show that serious flooding can also be triggered by small isolated rain events.
- Flooding on fans can cause major damage to structures not only on fans but also on downstream alluvial floodplains.