A second mesoscale thunderstorm with a warm cloud-top structure (-60° C) developed near dawn and persisted until orographic upslope component over the south face of the Santa Catalina Mountains (Figure 2). The first of the meso-

1) Atmospheric Physics of the Storm

2) Precipitation

3) Flooding

A U.S. Geological Survey streamflow gaging station on Sabino Creek (USGS 09484000) showed that the peak flood (Figure 13) of 7,930 cfs on July 29 and 30, respectively (Figure 4). Similar multiday rainfall recurrence intervals occurred at the Sa-

4) Hillside Failures

Many of the hillside failures resulted in steep collapse or debris flows, while others occurred along valley heads or creek channel. Sites of failures included Sabino Creek, the north and south slopes of the Santa Catalina Mountains, most between 4,000 - 6,000 ft elevation. The extent of

5) Debris Flows

Within Sabino Canyon, most debris flows moved down the valley heads or creek channels toward the mountain front. A complete debris flow during the 2006 peak (Figure 12) reached the narrow alluvial fan in Soldier Canyon, destroying a few homes and flooding the road (Figure 13).

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