

**THE LA MADRE MOUNTAIN ROCKSLIDE, CLARK COUNTY,
NEVADA—EVIDENCE FOR RECENT PAST GROUND SHAKING
IN THE LAS VEGAS AREA**

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ABSTRACT

A large, unrecorded rockslide failed catastrophically near the summit of La Madre Mountain (elev. 8,154 feet) located in Clark County, Nevada. The site is located approximately 10 miles northwest of Las Vegas Valley in the nearby Spring Mountains. The slide was a simple plane failure in massively bedded limestone (Bird Springs Formation). The area of failure was investigated to estimate static and seismic stability of the pre-failure conditions and to identify factors that may have contributed to the failure. Static analyses were performed after field work was completed to evaluate the stability of the conditions at the site which may have existed prior to failure. Our analysis indicated that seismic loading was a likely factor in the slope failure. The stability analysis revealed that, prior to the slide, the factor of safety against sliding was 1.25. The critical seismic coefficient at failure was estimated to be 0.114g horizontal acceleration. Carbon 14 dating of any pre-slide trees found in the rock debris and ring counts of trees growing on the slide debris will be conducted. Attenuation relationships for ground acceleration will be estimated for the site but ridge enhanced ground shaking may have been a contributing factor.