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## **ESTIMATING THE POTENTIAL FISSURE HAZARD FOR PAHRUMP VALLEY, NEVADA**

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### **ABSTRACT**

A simple method was developed to help define the risk for fissuring within Las Vegas Valley, Nevada (Werle et al, 1998). This method evaluates and weighs several site aspects and conditions related to the formation of fissures in the valley. These include: 1) shallow groundwater conditions (depth to), 2) near surface soil conditions at the site, 3) distance to the nearest fault and high capacity pumping well(s), 4) location within land subsidence bowl(s) in the valley, 5) presence of intervening faults and the center of each subsidence bowl, and 6) orientation of nearest fault(s) with center of subsidence bowl.

The development of new fissures within Las Vegas Valley has been for the most part stemmed through a groundwater recharge program that has generally halted further water level declines in the valley. Not so in neighboring Pahrump Valley to the west where rampant growth has fostered increasing groundwater demand and water level declines leading to the formation of new fissures including damaging fissures in that valley. Las Vegas and Pahrump Valley are very similar geologically and therefore the simple method calibrated and used for Las Vegas Valley may be directly applicable to the Pahrump area for predicting the fissure hazard there. We have used Geographic Information System (GIS) applications evaluate areas within the Pahrump Valley for the potential for fissure development. ARCGIS 8.3 using Spatial Analyst software was used for these purposes.