

# New liquefaction hazard maps of Santa Clara Valley, Northern California

January 27 2009

---



San Andreas Fault M 7.8 Scenario

New hazard maps for communities from San Jose to Palo Alto in Northern California delineate the probability of earthquake-induced liquefaction, based on three scenarios: a magnitude 7.8 on the San Andreas Fault comparable to the 1906 event, a magnitude 6.7 on the Hayward Fault comparable to the 1868 event, and a magnitude 6.9 on the Calaveras Calaveras Fault.

The probability of liquefaction is highest at approximately 33 to 37 percent in some areas along major creeks for the San Andreas Fault scenario when the water table is relatively shallow, according to the report published by the February issue of the *Bulletin of the Seismological Society of America (BSSA)*.

Until now, scientists have offered only qualitative maps of the liquefaction hazard in the Santa Clara Valley. Liquefaction is a physical process that takes place during some earthquakes, causing loose soil to act like water rather than a solid. The liquefied sand or soil may flow and the ground may move and crack, causing damage to surface structures and underground utilities, as it did in the valley during both the 1868 and 1906 earthquakes.

These probabilistic maps detail the degree of hazard within broader hazard zones and thereby provide a perspective on the actual risk to the user.

The high resolution maps can be found at [earthquake.usgs.gov/regional/nca/liquefaction/](https://earthquake.usgs.gov/regional/nca/liquefaction/) .

Reference: "Scenario Liquefaction Hazard Maps of Santa Clara Valley, Northern California," by Thomas L. Holzer, Thomas E. Noce and Michael J. Bennett of the U.S. Geological Survey in Menlo Park, CA.

Source: Seismological Society of America

Citation: New liquefaction hazard maps of Santa Clara Valley, Northern California (2009, January 27) retrieved 26 April 2024 from <https://phys.org/news/2009-01-liquefaction-hazard-santa-clara-valley.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.