

# **Destruction from Earthquakes**

## **Chapter 8.3**

# I. Seismic Vibrations

The amount of damage to buildings depends on 3 factors:

1. Intensity and duration (amount of time) of the shaking
2. The type and condition of the soil beneath the building
3. Structural design

# A. Building Design

- Buildings and bridges that are more flexible are less likely to be damaged.

Chile Suspension Bridge

Bay Bridge Collapse

Bay Bridge Innovations

## B. Liquefaction

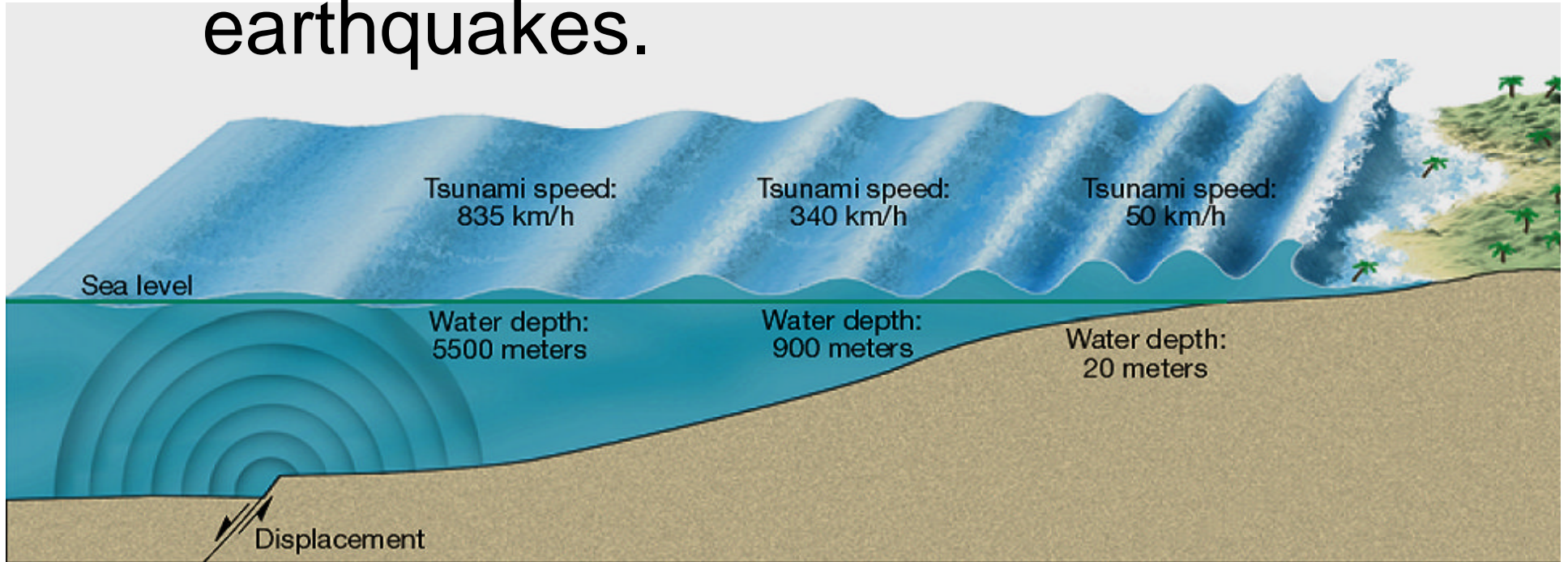
- Wet, unconsolidated soils turns to quicksand.



# Tsunamis

Caused by

1. Vertical displacement of the ocean floor.
2. Underwater landslides triggered by earthquakes.



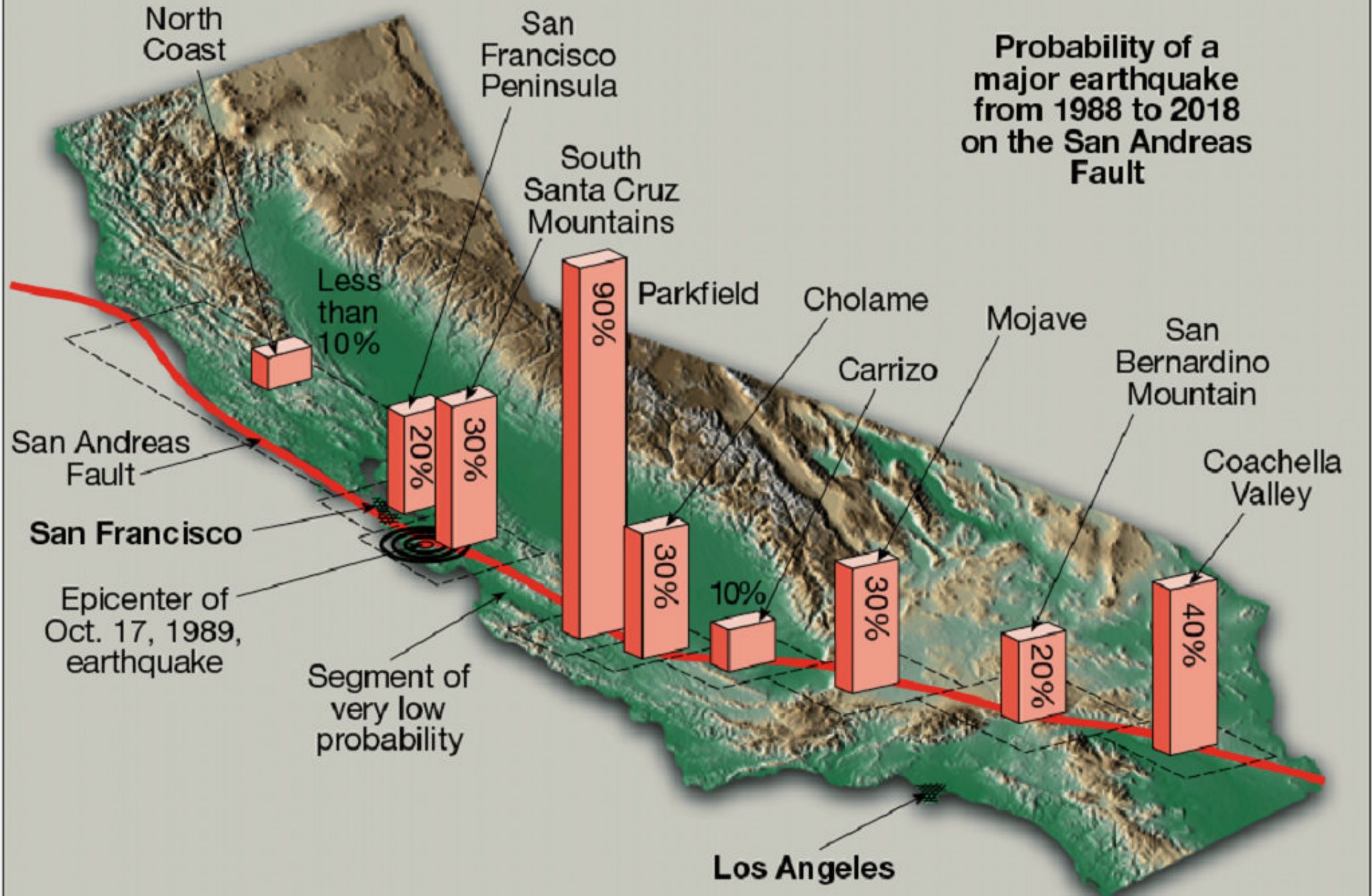


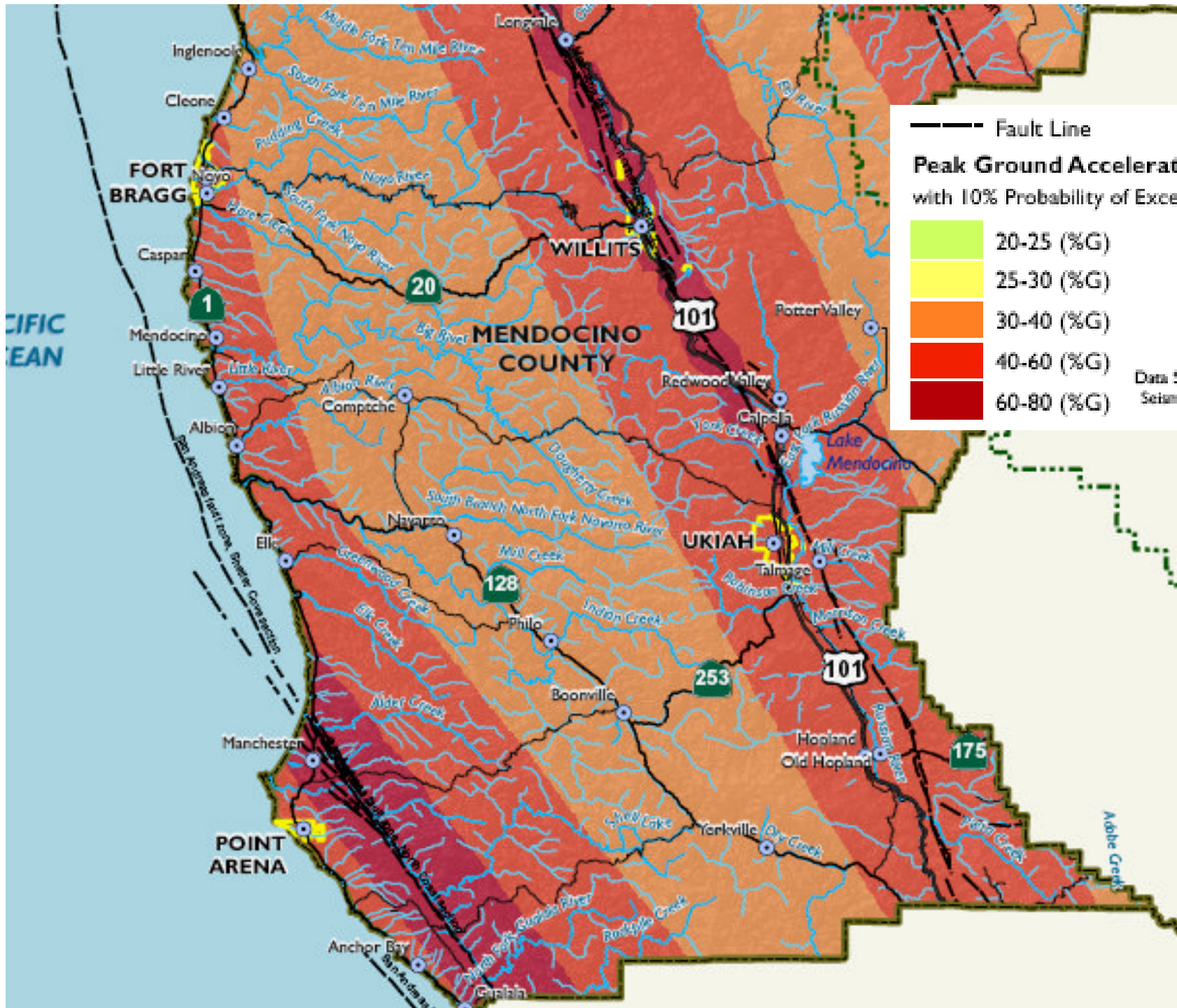
# Other Dangers

- **Landslides**
- **Ground subsidence (sinking)**
- **Sinkholes**



# Probability of a major earthquake from 1988 to 2018 on the San Andreas Fault





--- Fault Line

**Peak Ground Acceleration (%G)**  
with 10% Probability of Exceedance in 50 Years



Data Source: USGS National Seismic Hazard Maps 2002