

Seismic Shaking

Earthquake shaking causes over 90% of the damage in an earthquake, yet California law does not require real estate disclosure of this paramount hazard. However, a growing number of municipal governments have adopted ground shaking maps in their General Plan Safety Element and consider the seismic shaking hazard when deciding design and construction permit applications.

When movement occurs along a fault, most of the energy generated is released as ground vibrations (seismic waves), which we perceive as earthquake shaking. Ground shaking intensity at a site generally varies with the magnitude of the earthquake, the distance from the fault that ruptured, and the type of bedrock or soil at the property. (The direction in which the fault ruptures may also play a role.)

Most California communities are subject to some level of ground shaking hazard, which may vary from place to place within the community during any given earthquake. Other factors being equal, shaking will be more extreme on soft soils (such as water-saturated silt and clay along a bay margin or loose sandy deposits on a river floodplain) than on solid bedrock, and structures built to modern seismic codes will generally suffer less damage than older structures that have not been retrofitted for seismic safety.

Earthquake shaking causes over 90% of the damage in an earthquake, yet real estate disclosure of this paramount hazard is not required by state law. While California law requires the State Geologist to delineate regulatory earthquake fault zones and earthquake-triggered landslide and liquefaction zones for real estate disclosure, there is no legislative mandate to delineate earthquake shaking

zones for this purpose. However, a growing number of municipal governments have adopted ground shaking maps in their General Plan Safety Element and often consider that hazard when evaluating design and construction plans in a building permit application. Where a Safety Element map shows intense earthquake shaking is expected on a property, a prospective buyer may consider that fact to be material to the purchase decision.

(Additional sources: California Geological Survey)

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