Landslides

Landslides are a common hazard on sloping terrain. They can range from slow, downslope creeping of soil, to rapid and dangerous movements of unstable bedrock and water-saturated soil (debris flows) as may be triggered by torrential rainfall or earthquake shaking.

Landslides can range from slow, downslope creeping of soil, to rapid and dangerous movements of unstable bedrock and water-saturated soil (debris flows) as may be triggered by torrential rainfall or earthquake shaking. New or existing landslides can also be influenced by construction activity (such as overloading or undercutting a slope), unusual wetting (such as excess irrigation onto, or natural spring discharge into, a slope), or erosion. The probability of landslide occurrence increases as slope increases.

The State of California has created a series of regulatory maps pursuant to the Seismic Hazard Mapping Act of 1990. These statutory maps designate zones where earthquake shaking might cause two types of ground failure: liquefaction (on flatlands) and earthquake-triggered landslides (on slopes). These seismic hazard maps affect real estate in two principal ways: by requiring a geologic site investigation before a property within a hazard zone is developed, and by requiring disclosure to a prospective buyer of the fact that any portion of a sale property is within an earthquake-triggered landslide or liquefaction zone. The statutory Natural Hazard Disclosure Statement includes a space for making this disclosure.

The statutory landslide hazard maps are intended to show only where landslides may result from seismic shaking – they should not be relied upon to show where landslides could be triggered by rainfall or other causes unrelated to earthquakes.

Finally, cities and counties may be more restrictive than the state in designating and regulating landslide hazard zones. The locally designated zones are typically mapped in the city or county General Plan Safety Element. Not only do these local hazard zones often differ from the state zones, but city and county planners often identify additional and different types of natural hazard zones in order to best regulate land use within their jurisdiction. Most developments in areas with steep slopes require substantial earth movement and cut-and-fill activity, which require careful design to mitigate slope problems and may be strictly regulated by the local jurisdiction.

(Additional sources: California Geological Survey)

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