



CHAPTER 3 -- THE LAND USE PLAN: RESOURCES AND DEVELOPMENT ISSUES AND POLICIES

3.4 HAZARDS MANAGEMENT

[Policies](#)

Coastal Act Requirements

Six major hazards are critical in the coastal zone: Tsunami seismic activity, landsliding, shoreline and bluff erosion, flooding, and fire. The Coastal Act's mandate is to reduce potential risks and to avoid substantial alteration of natural landforms. Coastal Act policies which apply to management of environmental hazards include:

Section 30253. New development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section 30235. Revetments, breakwaters, groins, harbor channels, seawalls, cliff-retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish-kills should be phased out or upgraded where feasible.

Section 30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

Definitions

Geologic hazards are defined by the LCP Manual to include the following:

- seismic hazard areas delineated on fault maps as subject to potential surface rupture, on soil maps indicating materials particularly prone to shaking or liquefaction, and in local and regional seismic safety plans;



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- tsunami (seismic sea wave) runup areas identified on U.S. Army Corps of Engineers 100-year recurrence maps, by other scientific or historic studies, and other known areas of tsunami risk;
- landslide hazard areas delineated on slope stability maps and in local and regional geologic or safety plans;
- beach areas subject to erosion; and
- other geologic hazards such as expansive soils and subsidence areas.

Flood hazard areas are defined by the California Coastal Commission as those areas subject to inundation by a 100-year flood as mapped by the U.S. Department of Housing and Urban Development.

Fire hazard areas. The LCP Manual recommends identification of fire hazard areas using the California Division of Forestry's Fire Hazard Severity Classification System which considers weather, fuel loading, and steepness of slope the most important criteria for classifying fire hazards into three categories: moderate, high, or extreme hazard. All heavily wooded areas and brush areas with slopes steeper than 61 percent are considered to be high fire hazards.

Hazards Issues

Seismic Activity. The coastal zone is seismically active and vulnerable to earthquake hazards which include surface rupture, ground shaking, liquefaction and differential settlement, and tsunami inundation. The San Andreas fault parallels the coast offshore from the Humboldt County line to Manchester where it heads inland continuing southeasterly from the coastal zone. Further to the east are the Hayward, Rodgers Creek and Maacama faults. Both the San Andreas and Maacama faults are capable of producing strong earthquakes in the coastal zone. Traces of fault ruptures have been noted along the San Andreas fault near Point Arena and Manchester; these areas should be regarded as hazardous and unsuitable for construction. Notable historical events on faults crossing the coastal zone include the 1906 movement measuring, at its epicenter in Marin County, 8.3 on the Richter scale, and several earthquakes on the Maacama fault with a magnitude range of 4.5 - 5.5 during the past 50 years.

The Mendocino coast sustained damage totalling \$1.5 million from a tsunami generated by the 1964 Alaskan earthquake. The entire exposed coast of Mendocino County is subject to tsunami impact; particularly vulnerable areas include the area between Ten Mile River and Pudding Creek, Noyo Harbor, Albion and Manchester Beach to Iverson Point, including Point Arena. The only secure means of protection from tsunami inundation is avoidance of construction in susceptible areas.

Landsliding. The main factors contributing to landslides are loose or weakly consolidated rock or soils, steep slopes, and water. Human influences include septic tank systems, excessive irrigation, and poorly constructed or incorrectly graded cuts and fills. The potential for landslides is high in most of the coastal zone; slides most frequently occur along road cuts, steep valleys and stream canyons, and along coastal cliffs. They are particularly common in the San Andreas fault zone along the Garcia and Gualala Rivers.



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Erosion. Beach erosion by wind and waves and bluff erosion by waves, surface runoff, and landslides are continuing occurrences. These processes cause coastal retreat, although their impact varies in different areas. Beaches protect dunes and bluffs, so the reduction of beach area increases the erosion rate of the dunes or bluffs. Runoff and human activities also can increase the rate of cliff retreat. Local geology rather than the littoral processes determine the amount of potential erosion. Building setbacks necessary to protect development along the coast should be based on the specific characteristics of the site.

The only existing shoreline structure on the Mendocino coast that alters natural shoreline processes is the breakwater at the mouth of Noyo Harbor. The U.S. Army Corps of Engineers presently is studying the feasibility of building two additional breakwaters at Noyo Cove to protect the cove's entrance and to diminish wave and surge action.

Flooding. Heavy winter rains cause flooding nearly every year in the larger coastal watersheds; more serious flooding could be expected from the 100-year event. Flooding is of greatest concern in developed areas, such as those near the Noyo and Albion Rivers. The flood hazard areas designated on the Land Use Maps fall within the 100-year flood zone boundaries as mapped by the Federal Emergency Management Administration (FEMA). Property owners who believe they are adversely affected by inaccuracies in flood hazard mapping may file a written appeal.

Fire. During the summer, the terrace grasslands dry out, becoming susceptible to fire and potentially jeopardizing forests and residential development.