MARIN COUNTY
LOCAL COASTAL PROGRAM
UNIT 2 - *Amended*

Environmental Hazards

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M A R I N C O U N T Y

L O C A L C O A S T A L P R O G R A M

U N I T II

Amended

ADOPTED BY MARIN COUNTY BOARD OF SUPERVISORS

December 9, 1980

CERTIFIED BY STATE COASTAL COMMISSION

April 1, 1981

The following document is the current amended version of the 1981 Marin County LCP Unit II, which reflects all policy text amendments approved by the California Coastal Commission from 1982 to 2004. Following each amended policy is a note that provides the details of the Resolution(s)/Ordinance(s) passed by the Marin County Board of Supervisors that proposed and adopted each text amendment, as well as the corresponding action(s) of the California Coastal Commission. All information contained herein is current as of April 16, 2010, and is the most accurate portrayal of the amended LCP Policies to the best knowledge of the Marin County Community Development Agency at this time.

THE COASTAL ZONE IN UNIT II

Marin's Unit II coastal zone is approximately 70 miles in length and generally extends 1000 yards inland from the mean high tide line of the sea. In significant coastal resource areas, it extends inland to the first major ridgeline paralleling the sea or five miles inland from the mean high tide line, whichever is less.

The major natural feature in Unit II is Tomales Bay, a long narrow bay separating the Point Reyes peninsula from the coastal zone on the mainland. Two very distinct landscapes are found on either side of the Bay: the east side is characterized by open, rolling grasslands, while the west side consists of the densely wooded, steep terrain of the Inverness Ridge. The predominant land use in Unit II is agriculture, primarily grazing and dairying. Extensive areas are also owned and managed by the state and federal governments as public parkland, including Tomales Bay State Park, the Golden Gate National Recreation Area, and Point Reyes National Seashore. Urban development is generally confined to six small coastal village areas: Olema, Point Reyes Station, Inverness Ridge, Marshall and nearby shoreline hamlets, Tomales, and Dillon Beach.

SHORELINE STRUCTURES

COASTAL ACT POLICIES

Coastal Act policies on the construction of groins, breakwaters, piers, and other shoreline structures are contained in Section 30235. This section limits the purposes for which such structures can be built. In addition, the Secretary for Resources has established more detailed policies for use by departments within the Resources Agency (including the Coastal Commission) when reviewing shoreline protective projects. The full text of Section 30235 is given in Appendix A.

PLANNING ISSUES

There are two categories of shoreline structures: protective works and piers. Protective works, as the term implies, are used to protect a harbor or beach from the force of the waves. Piers can be used for a variety of recreational or commercial purposes.

Both types of shoreline structures, but particularly protective works, can significantly interfere with the movement and supply of sand along the coast. Improperly placed groins, jetties, or seawalls can reduce sand deposition, increase the rate of sand loss and change its distribution, upsetting the equilibrium of the shore. Marine structures can change current patterns and alter the configuration of the sea bottom offshore. In addition, shoreline structures can impair access to and along the coast, damage sensitive habitats, and degrade the visual qualities of the coast.

In contrast to these adverse effects, several benefits may be gained by the construction of piers or other structures which serve coastal dependent uses. Piers offer moorings for recreational boats, serve the commercial fishing industry, and

provide access to and over the water for fishing, viewing, and birdwatching. In weighing these benefits against the potential adverse impacts of shoreline structures, the number, location, and purposes of those structures must be evaluated.

Currently, there are approximately 50 piers on Tomales Bay. Some piers serve coastal dependent uses, such as commercial fishing, while the majority are attached to single-family dwellings. Of the 50 piers, 5 provide for public access and 3 allow limited public use, i.e., 16% of the total allow some public use. The remaining 42 piers (84% of the total) are private. The existing piers on Tomales Bay have affected the scenic quality of the shoreline and, in some places, interfere with public access to and along the shoreline. The piers, however, do serve local residents and visitors and contribute to the distinctive fishing village character of the Tomales Bay area.

Recognizing the intent of the Coastal Act, the County recommends limiting the number of new piers constructed and directing further development to existing built-up areas. The purposes for which shoreline protective works are built should be limited and, if possible, multiple use of piers should occur. These various actions would help to protect the scenic qualities of the Bay, minimize interference with public access along *the* shoreline, and minimize impacts on the marine environment. Marin County has a tidelands ordinance which requires a permit for the construction of any pier or protective work on tidelands. The ordinance specifies that environmental, scenic, public trust, and public safety issues shall be considered in permit review. However, the ordinance does not distinguish among or in any way limit the purposes for which shoreline structures are to be used. Distinctions of this kind need to be added so that the ordinance reflects Coastal Act policies.

SHORELINE STRUCTURES

LCP POLICIES ON SHORELINE STRUCTURES:

1. General policy. The County discourages the proliferation of shoreline structures in the Unit II coastal zone due to their visual impacts, obstruction of public access, interference with natural shoreline processes and water circulation, and effects on marine habitats and water quality. In some cases, however, the County recognizes that the construction of protective works or piers may be necessary or desirable. When' piers are allowed, multiple public and private, commercial and recreational uses shall be accommodated, if feasible, to maximize the use of these structures and minimize the need for further construction. Coastal permits for all shoreline structures will be evaluated based on the criteria listed in the policies below.

2. Shoreline protective works. The construction or reconstruction of revetments, breakwaters, groins, seawalls, or other artificial structures for coastal erosion control shall be allowed only if each of the following criteria is met:

   a. The structure is required to serve a coastal-dependent use, a coastal-related use in a developed area, or to protect existing development or public beaches.

   b. No other non-structural alternative is practical or preferable.

   c. The condition causing the problem is site specific and not attributable to a general erosion trend, or the project reduces the need for a number of

individual projects and solves a regional erosion problem.

d. It can be shown that a structure(s) will successfully mitigate the effects of shoreline erosion and will not adversely affect adjacent or other sections of the shoreline.

e. The structure will not be located in wetlands or other significant resource or habitat area, and will not cause significant adverse impacts to fish or wildlife.

f. There will be no reduction in public access, use, and enjoyment of the natural shoreline environment, and construction of a structure will preserve or provide access to related public recreational lands or facilities.

g. The structure will not restrict navigation, mariculture, or other coastal use and will not create a hazard in the area in which it is built.

Before approval is given for the construction or reconstruction of any protective shoreline structure, the applicant for the project shall submit a report from a registered geologist, professional civil engineer, or certified engineering geologist verifying that the structure is necessary for coastal erosion control and explaining how it will perform its intended function. Such a report shall not be required for emergency permit applications; however, the application shall specifically establish why the need for protective structures was not foreseen.

3. Piers and similar recreational or commercial structures. These structures shall be limited to sites located within existing developed areas or parks. New piers shall be permitted only if each of the following criteria is met:

   a. The structure will be used to serve a coastal-dependent use or will preserve or provide access to related public recreational lands or facilities.

   b. The structure will not be located in wetlands or other significant resource or habitat area and will not, individually or cumulatively, cause significant adverse impacts on fish or wildlife.

   c. The structure will not interfere with public access, use, and enjoyment of the natural shoreline environment.

   d. The structure will not restrict navigation, mariculture, or other coastal use and will not create a hazard in the area in which it is built.

   e. There is no pier with public access within 1/2 mile, or use of a nearby pier would not be feasible due to its size, location, or configuration.

   The reconstruction of existing piers shall be permitted provided that the pier is of the same size and in the same location as the original pier. Enlargements-or changes in design or location shall be evaluated based on criteria (a) through (e) above.

4. Public access requirement. Public access to new piers or similar. recreational or commercial structures shall be required unless it can be demonstrated that such access would interfere with commercial fishing or similar operations on the pier or be hazardous to public safety. A public access easement from the first public road across the applicant's property to the pier shall be required as a condition of coastal permit approval.

5. Design standards for all shoreline structures. The design and construction of any shoreline structure shall:

   a. Make it as visually unobtrusive as possible;

   b. Respect natural landforms to the greatest degree possible;

   c. Include mitigation measures to offset any impacts on fish and wildlife resources caused by the project;

   d. Minimize the impairment and movement of sand supply and the circulation of coastal waters; and

   e. Address the geologic hazards presented by construction in or near Alquist-Priolo earthquake hazard zones.

NEW DEVELOPMENT AND LAND USE

COASTAL ACT POLICIES

All of the policies in Chapter 3 of the Coastal Act apply to the issue of new

development and land use. [including] hazards (Section 30253)...

HAZARDS

Section 30253 of the Coastal Act provides in part that new development be sited and designed to minimize risks in geologic, flood, or fire hazard areas or in areas where the danger of cliff or bluff erosion exists. The Act also prohibits the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

The major geologic hazard in the Unit II coastal zone is a potential earthquake along the San Andreas fault. This fault runs northwest to southeast through the center of Tomales Bay, north to within 1/2 mile of Dillon Beach and south through the Olema Valley. The epicenter of the great 1906 earthquake was located along the fault, very near the town of Olema. Geologists have estimated that earthquakes of magnitude 7 or greater, with horizontal displacements on the order of 10 feet, can be expected to occur on the Tomales. Bay section of the fault every 75 to 300 years. Such earthquakes can be expected to cause extensive ground shaking, ground breaking, lurching, landslides, and faulting in the upland areas of Unit 11, and severe liquefaction along the shoreline of Tomales Bay.

The California Division of Mines and Geology has mapped earthquake hazard zones throughout the State, pursuant to the Alquist-Priolo Special Studies Zones Act of 1972. The earthquake hazard zone in Unit II includes most of the water area of Tomales Bay, Tom's and Sand Points to the north, and parts of Millerton and Tomasini Points to the south. South of Inverness, the earthquake zone extends onto the shore and includes areas on both sides of Sir Francis Drake Boulevard, small parts of Inverness Park, and all lands between Inverness Park and Point Reyes Station, as well as the town of Olema. The State Mining and Geology Board has adopted policies on earthquake hazard zones which prohibit new structures for human occupancy on or within 50 feet of an active fault trace, recommend more stringent guidelines for critical community structures such as hospitals, and require a geologic report to accompany an application for a development permit within a special studies zone. The County has adopted special procedures for reviewing development projects within earthquake zones, in keeping with the policies of the State Mining and Geology Board and the requirements of the Alquist-Priolo Act.

Erosion of beaches and bluffs constitutes the second major hazard in the Unit II coastal zone. Seawalls and riprap have been placed in some locations around Tomales Bay to prevent beach erosion, such as in the Marshall area, and at least one application has been made to the Coastal Commission for a permit to construct a groin. The Coastal Act policy on hazards provides that new development avoid the need for such protective structures, especially if the development is not coastal-dependent. LCP policies on shoreline protective works are given on page 132.

Bluff erosion is a significant hazard in the area north of Dillon Beach to the Estero de San Antonio, including the Oceana Marin subdivision. This area has been described by Clyde Wahrhaftig in his Report on the Geology of the Coast Between Dillon Beach and Estero San Antonio, Marin County, California, 1970, as follows:

> The coast of Marin County north of Dillon Beach is underlain largely by unstable masses of relatively impermeable crushed sandstone and shale, and is subject to very active landsliding. Retreat of the bluff top at the head of the landslides may average a foot or more a year, and cannot practically be controlled by riprapping at the base of the bluff. Soils

formed from this material have a high content of swelling clays and will present serious foundation problems aside from the landslides. A perennially high water table in this impermeable material is suggested by numerous seeps, springs, and patches of tules on the upland above the bluff, and would seriously interfere with underground sewage disposal such as by septic tanks and drain fields. In addition, the effluent water from such sewage-disposal procedures would probably intensify landslide activity.

The coast north of Dillon Beach has also been identified by the State as an area *where* existing homes are endangered by bluff erosion and future development would be, seriously threatened: A report issued by the State department of Navigation and ocean Development in 1977, Assessment and Atlas of Shoreline Erosion Along the California Coast, categorized this section of coast as "critical" for erosion and bluff hazards. Erosion hazards in Oceana Marin have also been recognized by the Regional Coastal Commission in its development standards for the subdivision. Site-specific recommendations by a soils engineer have been required in the past for new single-family homes, in order to address the hazards of building on steep slopes, landslides, slumping, bluff and wave erosion hazards.

Based on Coastal Act policies, bluff and cliff developments must be sited and designed to ensure stability and structural integrity for their expected economic lifespans while minimizing the alteration of natural landforms. The County Building Department presently reviews foundation plans and the Land Development Department reviews drainage, grading, and site plans. Both reviews are made on a case-by-case basis. LCP policies on hazards for Unit II support this procedure and establish general standards for development on bluffs and in other hazardous areas. The LCP also rezones the undeveloped land between the Oceana Marin subdivision and Estero de San Antonio from A-2 to APZ-60, in recognition of its development constraints due to eroding coastal bluffs in the area, visual impacts, water quality impacts on the Estero de San Antonio, and agricultural character.

NEW DEVELOPMENT AND LAND USE

LCP POLICIES ON NEW DEVELOPMENT AND LAND USE:

5. Hazards
   a. An applicant for development in an area potentially subject to geologic or other hazards as mapped by the County, including Alquist-Priolo earthquake hazards zones, areas subject to tsunami runup, landslides, liquefaction, beach or bluff erosion, steep slopes averaging greater than 35%, or flood hazard areas, shall be required to demonstrate that the area of construction is stable for development, the development will not create a hazard or diminish the stability of the area, and the development will not require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. The applicant may be required to file a report by a qualified professional evaluating the geologic conditions of the site and the effect of the development. In addition, as a condition of coastal permit approval, the applicant shall be required to sign a waiver of liability exempting the County from liability for any personal or property damage caused by natural hazards on such properties.

   b. In coastal bluff areas, new structures shall be set back a sufficient distance from the bluff edge to ensure with reasonable certainty that they are not threatened by bluff retreat within their expected economic lifespans C50

years). The County shall determine the required setback based on information submitted by the applicant, staff investigation, and a geologic report which may_ be required. The setbacks will be of sufficient distance to eliminate the need for shoreline protective works.

c. Development of any kind beyond the required bluff-top setback shall be constructed to ensure that all surface and subsurface drainage shall not contribute to the erosion of the bluff face or the stability of the bluff itself. Surface water shall be directed away from the top of the bluff or handled in a manner which prevents damage to the bluff by surface and percolating water.

d. New development shall be sited and designed so that no protective shoreline structures (e.g. seawalls, groins, breakwaters) are or will be necessary to protect the building from erosion or storm damage during its expected economic lifespan (50 years). The applicant may be required to submit a professional geologic report demonstrating that the project conforms to this policy.

e. The County encourages PG&E to utilize materials for overhead utility lines which minimize fire hazards to surrounding areas.

c) Design Review Guidelines. In addition to all other standards for development review in the Coastal Program, the following special Design Review Guidelines shall apply to the processing of all development applications in Paradise Ranch Estates:

1. Predevelopment Geotechnical Engineering Studies. Individual engineering studies will be required for building lots within the Class 3 and Class 4 slope stability zones as mapped in Wagner and Smith, Slope Stability of the Tomales Bay Study Area, 1977, to evaluate slope stability and to engineer foundations and structures to provide for proper grading, siting, structural stability and seismic design. These provisions are required by the LCP and Inverness Ridge Communities Plan, as well.

APPENDIX B
Definitions

SOURCE: CALIFORNIA COASTAL ACT

30101
Coastal-dependent development or use means any development or use which requires a site on, or adjacent to, the sea to be able to function at all.

30101.3
Coastal-related development means any use that is dependent on a coastal-dependent development or use.

30106.
Development means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of, any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line.

30107
Energy facility means any public or private processing, producing, generating, storing, transmitting, or recovering facility for electricity, natural gas, petroleum, coal or other source of energy.

30107.5
Environmentally sensitive area means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

30108.2

Fill means earth or any other substance or material, including pilings-placed for the purposes of erecting structures thereon, placed in a submerged area

30114.

Public works means the following:

(a) All production, storage, transmission, and recovery facilities for water, sewerage, telephone, and other similar utilities owned or operated by any public agency or by any utility subject to the jurisdiction of the Public Utilities Commission, except for energy facilities.

(b) All public transportation facilities, including streets, roads, highways, public parking lots and structures, ports, harbors, airports, railroads, and-mass transit facilities and stations, bridges,_ trolley wires, and other related facilities. For the purposes of this division, neither the Ports of Hueneme, Long Beach, Los Angeles, nor San Diego Unified Port District nor any of the developments within these ports shall be considered public works.

(c) All publicly financed recreational facilities, all projects of the State Coastal Conservancy, and any development by a special district.

(d) All community college facilities.

30121

Wetland means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

SOURCE: DRAFT STATEWIDE INTERPRETIVE GUIDELINES ON WETLANDS AND OTHER WET AREAS, CALIFORNIA COASTAL COMMISSION, UPDATED TO November 17, 1980.

Wetlands.

Usually wetlands can be easily identified but in some cases, due to the highly variable conditions along the California coast, distinguishing wetland boundaries may be difficult. In such cases, the Coastal Commission will rely in part on the presence of hydrophytes (plants typically found in wet habitats) and/or the presence of hydric soils (wet soils). When there is doubt as to whether a particular area can be considered a wetland under the Coastal Act, or when it is not clear where a wetland boundary is located, the permit applicant will be required to submit a map identifying wetland areas within 500 feet of the proposed development using technical criteria supplied by the Commission.

Estuaries.

For the purposes of these guidelines, an "estuary" is a coastal water body usually semi-enclosed by land, but has open, partially obstructed, or intermittent exchange with the ocean and in which ocean water is at least occasionally diluted by fresh water runoff from the land. The salinity may be periodically increased above the open ocean by evaporation. In general, the boundary between "wetland" and "estuary" is the line of extreme low water.

Streams and Rivers.

For the purposes of these guidelines a "stream" or "river" is a perennial or intermittent watercourse mapped by the United States Geological Survey on the most current 7.5 minute quadrangle series, or identified in a local coastal program,

Lakes.

For the purposes of these guidelines, "lakes" are confined, perennial water bodies mapped by the United States Geologic Survey on the most current 7.5 minute quadrangle series, or identified in a local coastal program.

Open Coastal Waters and Coastal Waters.

For the purposes of these guidelines, "open coastal waters" or "coastal waters" refer to the open ocean overlying the continental shelf and its associated coastline. Salinities exceed 30 parts per thousand with little or no dilution except opposite mouths of estuaries.

Furthermore, for the purposes of these guidelines, some portions of open coastal waters, generally areas without especially significant plant or animal life, may not be environmentally sensitive habitat areas. Environmentally sensitive habitat areas within open coastal waters may include Areas of Special Biological Significance as identified by the State Water Resources Control Board, habitats of rare or endangered species, near-shore reefs, and kelp beds.

Riparian Habitats.

For the purposes of these guidelines, a "riparian habitat" is an area of riparian vegetation. This vegetation is an association of plant species which grow adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other bodies of fresh water.

NOTE: The technical background material for these guidelines and a more thorough explanation of wet habitats and their definition may be obtained from the California Coastal Commission.