Staff Note: This is the General Plan/Local Coastal Plan (LCP) Public Safety Element applicable inside the Coastal Zone.

Chapter 6

PUBLIC SAFETY

- **SEISMIC HAZARDS**
- **SLOPE STABILITY**
- **EROSION**
- **FLOOD HAZARDS**
- **FIRE HAZARDS**
- **HAZARDOUS AND TOXIC MATERIALS**
- **HAZARDOUS WASTE MANAGEMENT**
- **ELECTRIC AND MAGNETIC ENERGY**

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CONTENTS

Language identified with (LCP) is not restricted to the Coastal Zone; language which includes the (LCP) initials is part of the Local Coastal Program and applies countywide unless specifically stated that the policy, etc., is limited to the coastal zone.

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AUTHORITY AND PURPOSE

The requirements for a Safety Element are established by State Planning law (Section 65302 g) as follows:

> "A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.
>
> To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision. Each county and city shall submit to the Division of Mines and Geology of the Department of Conservation one copy of the safety element and any technical studies used for developing the safety element."

SUMMARY

The goals, objectives, policies and programs of this chapter are derived from the necessity to protect the community from natural hazards, as well as from hazards produced from the built environment.

The Seismic Hazards section addresses geologic review requirements for development within designated fault zones. The second section addresses policies relating to slope stability. This section includes specific policies on Coastal Bluffs and Beaches as well as general requirements for when geologic review is required. The third section on Erosion is closely related to slope stability and addresses the need for drainage and erosion control plans for all development and sets forth standards for the prevention of erosion and siltation.

The policies of the Flood Hazards section require new development to be located outside of the flood hazard area, wherever possible.

The Fire Hazards section is the last section relating to natural hazards and establishes road standards and development requirements for fire protection.

The section on Hazardous and Toxic materials outlines the objectives and policies which relate to the management of hazardous wastes, and also outlines the County's desire to minimize the use and dissemination into the environment of hazardous and toxic materials generally.

The Hazardous Waste Management section addresses the siting of hazardous waste facilities as required by the Hazardous Waste Management Plan.

An Electric and Magnetic Fields section has been included, which sets forth policies for development near high voltage electric power transmission and distribution lines which could create health hazards.

Substantial background data on these hazards are available in chapter 5, Resources and Hazards, of the General Plan Update Background Report (1991) covering the urban area, and in the Technical Appendix (1991) as well as various specialized studies and planning documents (see references).

GOAL

The overall goals guiding the Public Safety Element are as follows:

Public Health and Safety (LCP): To protect human life, private property and the environment, and to minimize public expenses by preventing inappropriate use and development or location of public facilities and infrastructure in those areas which, by virtue of natural dynamic processes or proximity to other activities, present a potential threat to the public health, safety and general welfare.

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SEISMIC HAZARDS

THE LOMA PRIETA EARTHQUAKE

At 5:04 p.m. on October 17, 1989, a magnitude 7.1 earthquake rocked the Monterey Bay and San Francisco Bay regions. The initial quake lasted only 22 seconds, although in the two weeks that followed, more than 4,000 aftershocks were recorded, with 20 of these greater than magnitude 5 on the on the Richter Scale. The epicenter of the Loma Prieta earthquake was about 10 miles east-northeast of the City of Santa Cruz in the Aptos planning area on the San Andreas fault.

The Loma Prieta earthquake was the largest to strike California since 1906, causing 62 deaths, 3,757 injuries, leaving more than 12,000 people homeless, disrupting transportation, utilities, and communications, and causing more than $6 billion in property damages.

In Santa Cruz County, 674 dwellings, 32 mobile homes and 310 businesses were destroyed in the earthquake. The State Office of Emergency Services estimated that damages to residential buildings was $176 million and $98 million to commercial structures in the County.

As of January 1991, Santa Cruz County had issued 7,460 building permits for reconstruction or repair of earthquake damaged structures and had provided related services to 19,909 members of the public. Replacement of un-reinforced masonry chimneys made up the majority of residential repairs, followed by foundation replacement on older wood frame houses which predated current building codes and lacked basic seismic safety features such as foundation bolts and sufficient structural bracing. Significant damage to streets, water systems, sewer systems and other public infrastructure was related to liquefaction and subsidence. Repair of infrastructure was financed in part by a voter-approved half cent sales tax levied over 6 years in Measure E, and a $33 million bond issue.

An evaluation of the response by the Santa Cruz County Emergency Operations Center concluded that the response to the earthquake was a success, with the OEC being fully operational within 25 minutes of the earthquake. Due to the County's susceptibility to earthquakes and other natural hazards, disaster response planning is an on-going process.

Objective 6.1 Seismic Hazards

(LCP) To reduce the potential for loss of life, injury, and property damage resulting from earthquakes by: regulating the siting and design of development in seismic hazard areas; encouraging open space, agricultural or low-density land use in the fault zones; and increasing public information and awareness of seismic hazards.

Policies

6.1.1 Geologic Review for Development in Designated Fault Zones

(LCP) Require a review of geologic hazards for all discretionary development projects, including the creation of new lots, in designated fault zones. Fault zones designated for review include the Butano, Sargent, Zayante, and Corralitos complexes, as well as the State designated Seismic Review Zones. Required geologic reviews shall examine all potential seismic hazards and may consist of a Geologic Hazards Assessment and a more complete investigation where required. Such assessment shall be prepared by County staff under supervision of the County Geologist, or a certified engineering geologist may conduct this review at the applicant's choice and expense.

6.1.2 Geologic Reports for Development in Alquist-Priolo Zones

(LCP) Require a preliminary geologic report or full engineering geology report for development on parcels within Alquist-Priolo State-designated seismic review zones.

6.1.3 Engineering Geology Report for Public Facilities in Fault Zones

(LCP) Require a full engineering geology report by a certified engineering geologist whenever a significant potential hazard is identified by a Geologic Hazards Assessment or Preliminary Geologic Report, and prior to the approval of any new public facility or critical structure within the designated fault zones.

6.1.4 Site Investigation Regarding Liquefaction Hazard

(LCP) Require site-specific investigation by a certified engineering geologist and/or civil engineer of all development proposals of more than four residential units in areas designated as having a high or very high liquefaction potential. Proposals of four units and under and non-residential projects shall be reviewed for liquefaction hazard through environmental review and/or geologic hazards assessment, and when a significant potential hazard exists a site-specific investigation shall be required.

6.1.5 Location of New Development Away From Potentially Hazardous Areas

(LCP) Require the location and/or clustering of development away from potentially hazardous areas where feasible and condition development permits based on the recommendations of the site's Hazard Assessment or other technical reports.

6.1.6 Siting of New Reservoirs

(LCP) Require a full engineering geologic investigation prior to the construction of new reservoirs, and if an unmitigable hazard exists, relocation of the reservoir.

6.1.7 Dam Safety Act

(LCP) New dams shall be constructed according to high seismic design standards of the Dam Safety Act and as specified by structural engineering studies. Smaller reservoirs will be reviewed for potential seismic hazards as a part of the environmental review process.

6.1.8 Design Standards for New Public Facilities

(LCP) Require all new public facilities and critical structures to be designed to withstand the expected ground shaking during the design earthquake on the San Andreas Fault.

6.1.9 Recordation of Geologic Hazards

(LCP) Require the owner of a parcel in an area of potential geologic hazards to record, with the County Recorder, a Notice of Hazards, and the level of geologic and/or geotechnical investigation conducted as a condition of development approval.

6.1.10 Density Recommendations for Proposed Development

(LCP) Approve the final density of a development proposal only if it is consistent with the recommendations of the technical reports. Deny the location of the proposed development if it is found that the hazards on the site cannot be mitigated to within acceptable risk levels.

6.1.11 Setbacks from Faults

(LCP) Exclude from density calculations for land divisions, land within 50 feet of the edge of the area of fault induced offset and distortion of an active or potentially active fault trace. In addition, all new habitable structures on existing lots of record shall be set back a minimum of fifty (50) feet from the edge of the area of fault induced offset and distortion of an active or potentially active fault trace. This setback may be reduced to a minimum of twenty-five (25) feet based upon paleoseismic studies that include observation trenches. Reduction of the setback may only occur when both the consulting engineering geologist preparing the study and the County Geologist observe the trench and concur that the reduction is appropriate. Critical structures and facilities shall be set back a minimum of one hundred (100) feet from the edge of the area of fault induced offset and distortion of an active or potentially active fault traces. (Revised by Res. 81-99)

6.1.12 Minimum Parcel Size in Fault Zones

(LCP) Outside the Urban Services Line and Rural Services Line, require a minimum parcel of 20 gross acres for the creation of new parcels within state and County designated seismic review zones if proposed building sites lie within the fault zone. Require a minimum parcel of 10 gross acres for the creation of new parcels within the portions of the County designated seismic review zones that are not part of a State Alquist-Priolo Earthquake Fault Zone, and which lie outside the Urban and Rural Services Lines and Coastal Zone, if 25% or more of the parcel perimeter is bounded by parcels 1-acre or less in size. Inside the Urban Services Line and Rural Services Line, allow density consistent with the General Plan and LCP Land Use designation if all structures are to be set back at least 50 feet from fault traces and meet all other conditions of technical reports. *(Amended by Res. 204-2008)*

Programs

a. Periodically update seismic design criteria and the Grading ordinance with the advice of qualified professionals as information becomes available in order to aid buildings and homeowners in constructing safe structures. (Responsibility: Planning Department)

b. Continue to evaluate existing public facilities to determine whether they can maintain structural integrity during the design earthquake (Responsibility: Public Works, Board of Supervisors, California Department of Forestry)

c. Investigate the feasibility of requiring all new structures within fault zones and in areas subject to high or very high liquefaction potential, to be constructed to withstand ground shaking generated up to the design earthquake on the San Andreas fault. (Responsibility: Planning Department, Board of Supervisors)

d. Identify critical structures that were constructed prior to the adoption of current Uniform Building Code earthquake design requirements and strengthen them structurally if possible or phase out their use. (Responsibility: County Office of Emergency Services, Public Works, Board of Supervisors, State of California)

e. Target the following structures to meet UBC Zone 4 seismic safety standards:
(1) Buildings constructed prior to 1955;
Critical facilities:
- Essential facilities: buildings whose use is necessary during an emergency;
- Buildings whose occupancy is involuntary;
- High occupancy buildings.

(Responsibility: Planning Department, Public Works, Board of Supervisors, State of California)

f. Support seismic retrofit programs for residential properties. (Responsibility: Planning Department, Santa Cruz County Housing Authority, Board of Supervisors)

g. Comprehensively map the Geologic Hazard Combining Zone District to include areas having a high, moderate or uncertain surface rupture potential in order to place all existing regulations into one concise ordinance, and to notify future buyers of these policies as they pertain to individual parcels. (Responsibility: Board of Supervisors, Planning Commission, Planning Department)

h. Comprehensively map the Geologic Hazard Combining Zone District to include areas subject to high liquefaction hazard when precise technical information regarding the extent and activity of liquefiable materials is available. (Responsibility: Board of Supervisors, Planning Commission, Planning Department

i. Revise existing seismic hazard maps as new, reliable information becomes available. (Responsibility: Planning Department

j. Evaluate the probable response of community service agencies and emergency facilities to a damaging earthquake, and develop contingency plans for post-disaster emergency operations, including evacuation procedures. (Responsibility: County Office of Emergency Services)

k. Develop public education programs to increase public awareness of seismic and geologic hazards, and to inform the public of proper procedures before, during and after an earthquake that can help to minimize injury and property loss. (Responsibility: Planning Department, County Office of Emergency Services)

Objective 6.2 Slope Stability

(LCP) To reduce safety hazards and property damage caused by landslides and other ground movements affecting land use activities in areas of unstable geologic formations, potentially unstable slopes and adverse soil conditions and coastal bluff retreat.

Policies

6.2.1 Geologic Hazards Development On and Near Slopes

(LCP) Require a geologic hazards assessment of all development, including grading permits, that is potentially affected by slope instability, regardless of the slope gradient on which the development. takes place. Such assessment shall be prepared by County staff under supervision of the County Geologist, or a certified engineering geologist may conduct this review at the applicant's choice and expense.

6.2.2 Engineering Geology Report

(LCP) Require an engineering geology report by a certified engineering geologist and/or a soils engineering report when the hazard assessment identifies potentially unsafe geologic conditions in an area of proposed development.

6.2.3 Conditions for Development and Grading Permits

(LCP) Condition development and grading plans permits based on the recommendations of the Hazard assessment and other technical reports.

6.2.4 Mitigation of Geologic Hazards and Density Considerations

(LCP) Deny the location of a proposed development or permit for a grading project if it is found that geologic hazards cannot be mitigated to within acceptable risk levels; and approve development proposals only if the project's density reflects consideration of the degree of hazard on the site, as determined by technical information.

6.2.5 Slope Considerations for Land Division Calculations

(LCP) Exclude land with slopes exceeding 30 percent in urban areas and 50 percent in rural areas and land with recent or active landslides from density calculations for land divisions.

6.2.6 Location of Structures and Drainage Considerations in Unstable Areas

(LCP) Require location and/or clustering of structures away from potentially unstable slopes whenever a feasible building site exists away from the unstable areas. Require drainage plans that direct runoff and drainage away from unstable slopes.

6.2.7 Location of Septic Leachfields

(LCP) Prohibit the location of septic leachfields in areas subject to landsliding unless investigation by a certified engineering geologist demonstrates that such placement will not adversely affect slope stability.

6.2.8 Road Construction (deleted by Res. 81-99)

6.2.9 Recordation of Geologic Hazards

(LCP) Require the owner of a parcel in an area of potential geologic hazards to record, with the County Recorder, a Notice of Hazards, and the level of prior geologic and/or geotechnical investigation conducted as a condition of development approval.

Programs

a. Implement a program to document the public and private costs of landslides, to identify existing landslides, and revise County maps as additional information becomes available. Require property owners and public agencies to control landslide conditions which threaten structures or roads. (Responsibility: Planning Department)

b. Maintain and periodically update public information brochures concerning landslide hazards and guidelines for hillside development, as new information becomes available. (Responsibility: Planning Department)

COASTAL BLUFFS AND BEACHES

Policies

6.2.10 Site Development to Minimize Hazards

(LCP) **R**equire all developments to be sited and designed to avoid or minimize hazards as determined by the geologic hazards assessment or geologic and engineering investigations. *(Revised by Res. 81-99)*

6.2.11 Geologic Hazards Assessment in Coastal Hazard Areas

(LCP) Require a geologic hazards assessment or full geologic report for all development activities within coastal hazard areas, including all development activity within 100-feet of a coastal bluff. Other technical reports may be required if significant potential hazards are identified by the hazards assessment. *(Revised by Res. 81-99)*

6.2.12 Setbacks from Coastal Bluffs

(LCP) All development activities, including those which are cantilevered, and non-habitable structures for which a building permit is required, shall be set back a minimum of 25 feet from the top edge of the bluff. A setback greater than 25 feet may be required based on conditions on and adjoining the site. The setback shall be sufficient to provide a stable building site over the 100-year lifetime of the structure, as determined through geologic and/or soil engineering reports. The determination of the minimum 100-year setback shall be based on the existing site conditions and shall not take into consideration the effect of any proposed shoreline or coastal bluff protection measures. *(Revised by Res. 81-99)*

6.2.13 Exception for Foundation Replacement and/or Upgrade

(LCP) Foundation replacement and/or foundation upgrades that meet the definition of development activity shall meet the 25-foot minimum and 100-year stability setback requirements. An exception to those requirements may be granted for existing structures that are located partly or wholly within the setback if the Planning Director determines that:

(1) the area of the structure that is within the setback does not exceed 25% of the area of the structure, OR

(2) the structure cannot be relocated to meet the setback due to inadequate parcel size. (Revised by Res. 81-99)

6.2.14 Additions to Existing Structures

(LCP) Additions, including second story and cantilevered additions, shall comply with the setback requirements of 6.2.12. *(Revised by Res. 81-99)*

6.2.15 New Development on Existing Lots of Record

(LCP) Allow development activities in areas subject to storm wave inundation or beach or bluff erosion on existing lots of record, within existing developed neighborhoods, under the following circumstances:

(a) A technical report (including a geologic hazards assessment, engineering geology report and/or soil engineering report) demonstrates that the potential hazard can be mitigated over the 100-year lifetime of the structure. Mitigations can include, but are not limited to, building setbacks, elevation of the structure, and foundation design;

(b) Mitigation of the potential hazard is not dependent on shoreline or coastal bluff protection structures, except on lots where both adjacent parcels are already similarly protected; and

(c) The owner records a Declaration of Geologic Hazards on the property deed that describes the potential hazard and the level of geologic and/or geotechnical investigation conducted. *(Revised by Res. 81-99)*

6.2.16 Structural Shoreline Protection Measures

(LCP) Limit structural shoreline protection measures to structures which protect existing structures from a significant threat, vacant lots which through lack of protection threaten adjacent developed lots, public works, public beaches, or coastal dependent uses.

Require any application for shoreline protection measures to include a thorough analysis of all reasonable alternatives, including but not limited to, relocation or partial removal of the threatened structure, protection of the upper bluff or area immediately adjacent to the threatened structure, engineered shoreline protection such as beach nourishment, revetments, or vertical walls. Permit structural protection measures only if non-structural measures (e.g. building relocation or change in design) are infeasible from an engineering standpoint or not economically viable.

The protection structure must not reduce or restrict public beach access, adversely affect shoreline processes and sand supply, increase erosion on adjacent properties, or cause harmful impacts on wildlife and fish habitats or archaeological or paleontological resources.

The protection structure must be placed as close as possible to the development requiring protection and must be designed to minimize adverse impacts to recreation and to minimize visual intrusion.

Shoreline protection structures shall be designed to meet approved engineering standards for the site as determined through the environmental review process.

Detailed technical studies shall be required to accurately define oceanographic conditions affecting the site. All shoreline protective structures shall incorporate permanent survey monuments for future use in establishing a survey monument network along the coast for use in monitoring seaward encroachment or slumping of revetments or erosion trends.

No approval shall be given for shoreline protective structures that do not include permanent monitoring and maintenance programs. Such programs shall include a report to the County every five years or less, as determined by a qualified professional, after construction of the structure, detailing the condition of the structure and listing any recommended maintenance work. Maintenance programs shall be recorded and shall allow for County removal or repair of a shoreline protective structure, at the owner's expense, if its condition creates a public nuisance or if necessary, to protect the public health and safety. *(Revised by Res. 81-99)*

6.2.17 Prohibit New Building Sites in Coastal Hazard Areas

(LCP) Do not allow the creation of new building sites, lots, or parcels in areas subject to coastal hazards, or in the area necessary to ensure a stable building site for the minimum 100-year lifetime, or where development would require the construction of public facilities or utility transmission lines within coastal hazard areas or in the area necessary to ensure a stable building site for the minimum 100-year lifetime.

6.2.18 Public Services in Coastal Hazard Areas

(LCP) Prohibit utility facilities and service transmission systems in coastal hazard areas unless they are necessary to serve existing residences. *(Revised by Res. 81-99)*

6.2.18.1 Density Calculations

(LCP) Exclude areas subject to coastal inundation, as defined by geologic hazard assessment or full geologic report, from use for density calculations. *(Added by Res. 81-99)*

6.2.19 Drainage and Landscape Plans

(LCP) Require drainage and landscape plans recognizing potential hazards on and off site to be approved by the County Geologist prior to the approval of development in the coastal hazard areas. Require that approved drainage and landscape development not contribute to offsite impacts and that the defined storm drain system or Best Management Practices be utilized where feasible. The applicant shall be responsible for the costs of repairing and/or restoring any off-site impacts.

6.2.20 Reconstruction of Damaged Structures on Coastal Bluffs

(LCP) Permit reconstruction of structures on or at the top of a coastal bluff which are damaged as a result of coastal hazards, including slope instability and seismically induced landslides, or are damaged by non-coastal related hazards (fire, etc.) and where the loss is less than 50 percent of the value, in accordance with the recommendations of the hazards assessment. Encourage relocation to a new footprint provided that the new location is landward of the previous site at the best possible site not affecting resources (e.g. the most landward location, or landward of the area necessary to ensure a stable building site for the minimum 100-year lifetime, or not necessitating a future shoreline protective structure).

When structures located on or at the top of a coastal bluff are damaged as a result of coastal hazards, including slope instability and seismically induced landslides, and where the loss is greater than 50 percent of the value, permit reconstruction if all applicable regulations can be met, including minimum setbacks. If the minimum setback cannot be met, allow only in-kind reconstruction, and only if the hazard can be mitigated to provide stability over a 100-year period.

For structures damaged by other than coastal hazards, where the loss is greater than 50% of the value, allow in-kind reconstruction, subject to all regulations except for the minimum setback. Allow other than in-kind reconstruction only if the minimum setback is met.

Exemption: Public beach facilities and replacements consistent with Coastal Act Policy 30610(g). *(Revised by Res. 81-99)*

6.2.21 Reconstruction of Damaged Structures due to Storm Wave Inundation

(LCP) Permit reconstruction of individual structures located in areas subject to storm wave inundation, which are damaged as a result of coastal hazards, and loss is less than 50 percent of the value, in accordance with recommendations from the geologic hazards assessment and other technical reports, as well as with policy 6.2.16.

When structures located in areas subject to storm wave inundation are damaged as a result of coastal hazards and the loss is greater than 50 percent of the value, permit reconstruction if all applicable regulations can be met. If the minimum setback cannot be met, allow only in-kind reconstruction, and only if the hazard can be mitigated to provide stability over a 100-year period.

For structures damaged greater than 50 percent of the value by other than coastal hazards, allow in-kind reconstruction which meets all regulations except for the coastal bluff setback. Allow other than in-kind reconstruction only if the minimum setback is met.

Exceptions: Public beach facilities and replacements consistent with Coastal Act Policy 30610(g). *(Revised by Res. 81-99)*

Programs

(LCP) a. Relocate if feasible, essential public facilities such as ser lines to locations outside of coastal hazard areas when they are due for expansion or replacement. (Responsibility: Public Works)

b. Zone areas subject to coastal erosion, inundation, and potential bluff failure to the Geologic Hazards Combining district. (Responsibility: Planning Department)

(LCP) c. Develop and implement a program to correct existing erosion problems along coastal bluffs caused by public drainage facilities. (Responsibility: Public Works)

d. Review existing coastal protection structures to evaluate the presence of adverse impacts such as pollution problems, loss of recreational beach area, and fish kills and implement feasible corrective actions. (Responsibility: Environmental Health, Planning Department)

(LCP) e. Support, encourage, and seek funding from FEMA and other appropriate agencies for the initiation of a review of all shoreline protective structures to evaluate their effectiveness and potential for becoming public hazards. Shoreline protective structures can become public hazards, for example, if they are in such a state of disrepair that portions have fallen or are in imminent danger of falling onto beaches. Where it is determined that such structures are public hazards or where they provide ineffective protection due to inadequate maintenance, consider notifying the property owner and requiring the property owner to either maintain the structure to a reasonable level or remove and replace the structure within one year of the notice. Consider County action to maintain or remove and replace the structure and recover costs by a lien against the property if the property owner does not act within one year of such notice. (Responsibility: Planning Department, Board of Supervisors)

(LCP) f. Support, encourage, seek funding, and cooperate with the Coastal Conservancy, Coastal Commission, State Lands Commission, and the Corps of Engineers for the establishment and maintenance of a permanent survey monument monitoring network along the coast. Utilize existing monuments set by Caltrans, other public agencies, geologic consultants, and others to the greatest degree possible. Incorporate the use of these monuments into all future planning for shoreline protective structures. Provide geo-reference (latitude and longitude) for each monument and structure. (Responsibility: Planning Department, Public Works)

Objectives 6.3 Erosion

(LCP) To control erosion and siltation originating from existing conditions, current land-use activities, from new developments, and new and existing cannabis activity and related development, to reduce damage to soil, water, and biotic resources.

Policies

6.3.1 Slope Restrictions

(LCP) Prohibit structures in discretionary projects on slopes in excess of 30 percent. A single-family dwelling on an existing lot of record may be excepted from the prohibition where siting on greater slopes would result in less land disturbance, or siting on lesser slopes is infeasible.

6.3.2 Grading Projects to Address Mitigation Measures

(LCP) Deny any grading project where a potential danger to soil or water resources has been identified and adequate mitigation measures cannot be undertaken.

6.3.3 Abatement of Grading and Drainage Problems

(LCP) Require, as a condition of development approval abatement of any grading or drainage condition on the property which gives rise to existing or potential erosion problems.

6.3.4 Erosion Control Plan Approval Required for Development

(LCP) Require approval of an erosion control plan for all development, as specified in the Erosion Control ordinances. Vegetation removal shall be minimized and limited to that amount indicated on the approved development plans but shall be consistent with fire safety requirements.

6.3.5 Installation of Erosion Control Measures

Require the installation of erosion control measures consistent with the Erosion Control ordinance, by October 15, or the advent of significant rain, or project completion, whichever occurs first. Prior to October 15, require adequate erosion control to be provided to prevent erosion from early storms. For development activities, require protection of exposed soil from erosion between October 15 and April 15 and require vegetation and stabilization of disturbed areas prior to completion of the project. For agricultural activities, require that adequate measures are taken to prevent excessive sediment from leaving the property.

6.3.6 Earthmoving in Least Disturbed or Water Supply Watersheds

Prohibit earthmoving operations in areas of very high or high erosion hazard potential and in Least Disturbed or Water-Supply Watersheds between October 15 and April 15, unless preauthorized by the Planning Director. If such activities take place, measures to control erosion must be in place at the end of each day's work.

6.3.7 Reuse of Topsoil and Native Vegetation Upon Grading Completion

Require topsoil to be stockpiled and reapplied upon completion of grading to promote regrowth of vegetation; native vegetation should be used in replanting disturbed areas to enhance long-term stability.

6.3.8 On-Site Sediment Containment

(LCP) Require containment of all sediment on the site during construction and require drainage improvements for the completed development that will provide runoff control, including onsite retention or detention where downstream drainage facilities have limited capacity. Runoff control systems or Best Management Practices shall be adequate to prevent any significant increase in site runoff over pre-existing volumes and velocities and to maximize on-site collection of non-point source pollutants.

6.3.9 Site Design to Minimize Grading

(LCP) Require site design in all areas to minimize grading activities and reduce vegetation removal based on the following guidelines:

(a) Structures should be clustered;

(b) Access roads and driveways shall not cross slopes greater than 30 percent; cuts and fills should not exceed 10 feet, unless they are wholly underneath the footprint and adequately retained;

(c) Foundation designs should minimize excavation or fill;

(d) Building and access envelopes should be designated on the basis of site inspection to avoid particularly erodable areas;

(e) Require all fill and sidecast material to be recompacted to engineered standards, reseeded, and mulched and/or burlap covered.

6.3.10 Land Clearing Permit

(LCP) Require a land clearing permit and an erosion control plan for clearing one or more acres, except when clearing is for existing agricultural uses. Require that any erosion control and land clearing activities be consistent with all General Plan and LCP Land Use Plan policies.

6.3.11 Sensitive Habitat Considerations for Land Clearing Permits

(LCP) Require a permit for any land clearing in a sensitive habitat area and for clearing more than one quarter acre in Water Supply Watershed, Least Disturbed Watershed, very high and high erosion hazard areas no matter what the parcel size. Require that any land clearing be consistent with all General Plan and LCP Land Use policies.

6.3.12 Cannabis Industry: Avoid Excessive Grading

(LCP) In order to protect public health and safety and prevent negative environmental impacts from grading and land disturbance, avoid excessive grading and disturbance associated with cannabis activities. This includes grading for access roads and other site improvements such as pads, structures, terracing and other infrastructure, including grading which may be required to meet fire code or other standards. Carefully evaluate grading that would significantly alter topography, visual character of an area or coastal resources, and avoid or minimize such alteration. Consider or favor alternate locations that would require less disturbance. Deny licenses and land use permits where necessary to implement this policy.

6.3.13 Cannabis Industry: Site Restoration

(LCP) Ensure that sites used for cannabis activities are restored to pre-graded condition, as appropriate, when cannabis activities are relocated, activity has ceased, or a cannabis license is no longer valid.

Programs

(LCP) a. Establish an active erosion control education program for the general public, builders, and staff, in cooperation with the Resource Conservation District and the Soil Conservation Service. (Responsibility: Planning Department)

b. Enforce the comprehensive Erosion Control ordinances requiring control of existing erosion problems as well as the installation of erosion, sediment, and runoff control measures in new developments. (Responsibility: Planning Department, Planning Commission, Board of Supervisors)

(LCP) c. cost-sharing programs with outside funding to assist property owners with control of existing problems that are too large to be effectively controlled by the owner. (Responsibility: Planning Department)

(LCP) d. Encourage use of Resource Conservation District programs to control existing erosion problems. (Responsibility: Planning Department

Objective 6.4 Flood Hazards

(LCP) To protect new and existing structures from flood hazards in order to minimize economic damages and threats to public health and safety, and to prevent adverse impacts on floodplains, and maintain their beneficial function for flood water storage and transport and for biotic resource protection.

Policies

6.4.1 Geologic Hazards Assessment Required in Flood Hazard Areas

(LCP) Require geologic hazards assessment of all development proposals within the County's flood hazard areas in order to identify flood hazards and development constraints.

6.4.2 Development Proposals Protected from Flood Hazard

(LCP) Approve only those grading applications and development proposals that are adequately protected from flood hazard and which do not add to flooding damage potential. This may include the requirement for foundation design which minimizes displacement of flood waters, as well as other mitigation measures.

6.4.3 Development on or Adjacent to Coastal Bluffs and Beaches

(LCP) Allow development in areas immediately adjacent to coastal bluffs and beaches only if a geologist determines that wave action, storm swell and tsunami inundation are not a hazard to the proposed development or that such hazard can be adequately mitigated. Such determination shall be made by the County Geologist, or a certified engineering geologist may conduct this review at applicant's choice and expense.

6.4.4 Locate Public Facilities Outside Flood Hazard Areas

(LCP) Require new utilities, critical facilities and non-essential public structures to be located outside the 100-year flood and coastal high hazard areas, unless such facilities are necessary to serve existing uses, there is no other feasible location, and construction of these structures will not increase hazards to life or property within or adjacent to the floodplain or coastal inundation areas.

6.4.5 New Parcels in 100-Year Floodplains

(LCP) Allow the creation of new parcels, including those created by minor land division or subdivision, in 100-year floodplains only under the following circumstances:

(a) A full hydrologic report and any other appropriate technical report must demonstrate that each proposed parcel contains at least one building site, including a septic system and leach field site, which is not subject to flood hazard, and that public utilities and facilities such as sewer, gas, electrical and water systems can be located and constructed to minimize flood damage and not cause a health hazard.

(b) A declaration indicating the limits and elevations of the one-hundred-year floodplain certified by a registered professional engineer or surveyor must be recorded with the County Recorder.

(c) Adequate drainage to reduce exposure to flood hazards must be provided.

(d) Preliminary land division proposals shall identify all flood hazard areas and the elevation of the base flood. (Revised by Res. 81-99)

6.4.6 Density Calculations

(LCP) In all areas exclude the portion of the property designated within the 100-year floodplain from density calculations. Require clustering of allowable units to minimize flood hazards, as warranted and feasible given the location of the development.

6.4.7 New Construction to be Outside Flood Hazard Areas

(LCP) Restrict new construction to the area outside the 100-year floodplain and area subject to coastal inundation, if a buildable portion of the parcel exists outside such areas.

6.4.8 Elevation of Residential Structures

(LCP) Require elevation of the habitable portions of residential structures above the 100-year flood level where constructed within a floodplain. Require floodproofing or elevation of non-residential structures. Required that foundations do not cause floodwater displacement except where necessary for floodproofing.

6.4.9 Septic Systems, Leach Fields, and Fill Placement

(LCP) Septic systems and leach fields to serve previously undeveloped parcels shall not be located within the floodway or the 100-year floodplain. The capacity of existing systems in the floodway or floodplain shall not be increased. Septic systems shall be designed to avoid impairment or contamination. Allow the placement of fill within the 100-year floodplain in the minimum amount necessary, not to exceed 50 cubic yards. Fill shall only be allowed if it can be demonstrated that the fill will not have cumulative adverse impacts on or off site. No fill is allowed in the floodway. (Revised by Res. 81-99)

6.4.10 Flood Control Structures

(LCP) Allow flood control structures only to protect existing development (including agricultural operations) where no other alternative is feasible and where such protection is necessary for public safety. The structures must not adversely affect sand supply, increase erosion or flooding on adjacent properties, or restrict stream flows below minimum levels necessary for the maintenance of fish and wildlife habitats.

Programs

a. Continue the Floodplain Management Program in accordance with the Federal Flood Insurance Program. (Responsibility: Planning Department)

b. Revise County floodplain maps as updated information becomes available. (Responsibility: Planning Department, FEMA)

c. Comprehensively map the Geologic Hazards Combining District in order to place all existing regulations into one concise and consistent ordinance and to notify future buyers of the policies as they pertain to affected parcels. (Responsibility: Planning Commission, Planning Department)

d. Maintain culverts and drainage facilities on County roads and seek to eliminate logjams and other obstructions from stream courses. (Responsibility: Public Works, Planning Department).

e. Continue to provide information to property owners located in floodplains and coastal inundation areas to encourage participation in the Federal Flood Insurance Program. (Responsibility: Planning Department).

f. Maintain the Automated Local Evaluation in Real Time (ALERT) Systems along Soquel Creek and Corralitos Creek. Implement a floodplain warning system for the San Lorenzo River, Aptos Creek and Valencia Creek. The Pajaro River Basin continues to be monitored by the National Weather Service. (Responsibility: Planning Public Works Department, County Office of Emergency Services)

g. Prepare detailed tsunami evacuation plans for coastal areas subject to the tsunami hazard. (Responsibility: County Office of Emergency Services)

(LCP) h. Incorporate more detailed information on tsunami inundation levels into the existing flood hazard program when this information is available. Existing development regulations would then apply to areas subject to this hazard. (Responsibility: County Office of Emergency Services)

i. Prepare and adopt an emergency warning system and detailed evacuation plans for areas subject to inundation in the event of failure of the Newell Creek Dam. (Responsibility: County Office of Emergency Services)

j. Work with relevant state and federal agencies to monitor potential rise in sea level due to the greenhouse effect and develop long term programs to address the impacts. (Responsibility: Planning Department, Board of Supervisors)

k. Continue to work with the Joint Powers Authority to relocate the Santa Cruz County Emergency Operations Center from the basement of the County Government Center, where it is vulnerable to flooding. (Responsibility: Board of Supervisors, Office of Emergency Services, County Administrative Office.

Objective 6.5 Fire Hazards

To protect the public from the hazards of fire through citizen awareness, preventing measures for mitigating the risks of fire, responsible fire protection planning, and built-in systems for fire detection and suppression.

Staff Note: In the case of any conflicts with the most recently adopted standards of State law, County Fire Code, and local fire district ordinances, the stricter standards apply.

Policies

6.5.1 Access Standards

Require all new structures, including additions of more than 500 square feet, to single-family dwellings on existing parcels of record, to provide an adequate road for fire protection in conformance with the following standards:

(a) Access roads shall be a minimum of 18 feet wide for all access roads or driveways serving more than two habitable structures, and 12 feet for an access road or driveway serving two or fewer habitable structures. Where it is environmentally inadvisable to meet these criteria (due to excessive grading, tree removal or other environmental impacts), a 12-foot wide all-weather surface access road with 12-foot wide by 35-foot long turnouts located approximately every 500 feet may be provided with the approval of the Fire Chief. Exceptions: Title 19 of the California Administrative Code, requires that access roads from every state governed building to a public street shall be all-weather hard-surface (suitable for use by fire apparatus) roadway not less than 20 feet in width. Such roadway shall be unobstructed and maintained only as access to the public street.

(b) Obstruction of the road width, as required above, including the parking of vehicles, shall be prohibited, as required in the Uniform Fire Code.

(c) The access road surface shall be "all weather", which means a minimum of six inches of compacted aggregate base rock, Class 2 or equivalent, certified by a licensed engineer to 95 percent compaction and shall be maintained. Where the grade of the access road exceeds 15 percent, the base rock shall be overlain by 2 inches of asphaltic concrete, Type B or equivalent, and shall be maintained.

(d) The maximum grade of the access road shall not exceed 20 percent, with grades greater than 15 percent not permitted for distances of more than 200 feet at a time.

(e) The access road shall have a vertical clearance of 14 feet for its entire width and length, including turnouts.

(f) Gates shall be a minimum of 2 feet wider than the access road/driveway they serve. Overhead gate structures shall have a minimum of 15 feet vertical clearance.

(g) An access road or driveway shall not end farther than 150 feet from any portion of a structure.

(h) A turn-around area which meets the requirements of the fire department shall be provided for access roads and driveways in excess of 150 feet in length.

(i) No roadway shall have an inside turning radius of less than 50 feet. Roadways with a radius curvature of 50 to 100 feet shall require an additional 4 feet of road width. Roadways with radius curvatures of 100 to 200 feet shall require an additional 2 feet of road width.

(j) Drainage details for the road or driveway shall conform to current engineering practices, including erosion control measures.

(k) Bridges shall be as wide as the road being serviced, meet a minimum load bearing capacity of 25 tons, and have guard rails. Guard rails shall not reduce the required minimum road width. Width requirements may be modified only with written approval from the Fire Chief. Bridge capacity shall be posted and shall be certified every five years by a licensed engineer. For bridges served by 12-foot access roads, approved turnouts shall be provided at each bridge approach.

(l) All private access roads, driveways, turnarounds and bridges are the responsibility of the owner(s) of record and shall be maintained to ensure the fire department safe and expedient passage at all times.

(m) To ensure maintenance of private access roads, driveways, turnarounds and bridges, the owner(s) of parcels where new development is proposed shall participate in an existing road maintenance group. For those without existing maintenance agreements, the formation of such an agreement shall be required.

(n) All access road and bridge improvements required under this section shall be made prior to permit approval, or as a condition of permit approval.

(o) Access for any new dwelling unit or other structure used for human occupancy, including a single-family dwelling on an existing parcel of record, shall be in the duly recorded form of a deeded access or an access recognized by court order.

Diagrammatic representations of access standards are available at the Santa Cruz County Planning Department and local fire agencies.

6.5.2 Exceptions to Access Road Standards

Exceptions to these standards may be granted at the discretion of the Fire Chief for single-family dwellings on existing parcels of record as follows:

(a) When the existing access road is acceptable to the Fire Department having jurisdiction.

(b) In addition, any of the following mitigation methods may be required:
   (1) Participation in an existing or formation of a new road maintenance group or association.
   (2) Completion of certain road improvements such as fill potholes, resurface access road, provide turnouts, cut back brush, etc. are made, as determined by the fire officials, and provided that the fire department determines that adequate fire protection can still be provided.
   (3) Provision of approved fire protection systems as determined by the Fire Chief.

(c) The level of road improvement required shall bear a reasonable relationship to the magnitude of development proposed.

6.5.3 Conditions for Project Approval

Condition approval of all new structures and additions, larger than 500 square feet, and to single-family dwellings on existing parcels of record, to meet the following fire protection standards:

(a) Address numbers shall be posted on the property so as to be clearly visible from the access road. Where visibility cannot be provided, a post or sign bearing the numbers shall be set adjacent to the driveway or access road to the property and shall have a contrasting background. Numbers shall be posted when construction begins.

(b) Provide adequate water availability. This may be provided from an approved system within 500 feet of a structure, or by an individual water storage facility (water tank, swimming pool, etc.) on the property itself. An approved water supply capable of supplying required fire flow for fire protection shall be provided to premises upon which

facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction in accordance with the Fire Code of Santa Cruz County. The fire department shall determine the adequacy and location of individual water storage to be provided. Built-in fire protection features (i.e., sprinkler systems) may allow for some exemptions of other fire protection standards when incorporated into the project.

(c) Maintain all around structures a clearance of not less than 30 feet or to the property line (whichever is a shorter distance) of all flammable vegetation or other combustible materials; or for a greater distance as may be prescribed by the fire department.

(d) Provide and maintain a spark arrester constructed with heavy one-half inch wire mesh screens on all chimneys.

(e) Automatic smoke detection devices shall be installed and maintained in accordance with the California Building Code and local Fire Department regulations. Sprinkler and fire alarm systems, when installed, shall meet the requirements of the local Fire Department.

(f) Provide adequate disposal of refuse. All development outside refuse collection boundaries shall be required to include a suitable plan for the disposal of flammable refuse. Refuse disposal shall be in accordance with state, County or local plans or ordinances. Where practical, refuse disposal should be by methods other than open burning.

(g) Require fire retardant roofs on all projects, as specified in the County Fire Code and the Uniform Fire Code. Exterior walls constructed of fire-resistant materials are recommended but are not necessarily required.

6.5.4 Fire Protection Standards for Land Divisions Outside the Urban Services Line

Require all new minor land divisions and subdivisions outside the Urban Services Line to meet the following fire protection standards:

(a) If a proposed building site is located on a dead-end access road and is more than one-half mile from the nearest intersection with a through road, then secondary access must be provided. (See section 6.5.5, Standards for Dead-End Roads). If building site is located within a 5-minute response time from the fire department and within 500 feet of a county-maintained road, then secondary access will not be required. Secondary access is defined as a 12-foot-wide all-weather surface roadway with a recorded right of access and maintenance agreement. The secondary access may be provided with a gate or other barrier on the approval of the Fire Chief. If these conditions cannot be met, development may take place only at the lowest density allowed for the area by the General Plan and LCP Land Use Plan.

(b) All primary and secondary roads shall meet the requirements of this section and shall be maintained through a County Service Area or a joint road maintenance agreement with all property owners of record.

(c) Location within the response time of 20 minutes from the fire station which is responsible for serving the parcel. Response time is defined as the length of time between the dispatch of ground fire vehicles from the fire station to their arrival at the location of the proposed structure(s). In areas exceeding 20 minutes response time, development may take place only at the lowest density allowed by the General Plan and LCP Land Use Plan.

(d) Locate the building site outside any designated Critical Fire Hazard Area. If building sites cannot be located outside a Critical Fire Hazard Area, the following criteria shall be met:

    (1) If the building site is served by a through access road or by secondary access, development may be approved only at the lowest density allowed by the General Plan and LCP Land Use Plan.

(2) If the parcel is on a dead-end access road and cannot develop secondary access, development may consist of only one single-family residence on the existing parcel of record; all land divisions must be denied.

(e) The project can meet the vegetation modification requirements called for by the Fire Chief, based upon an on-site inspection, including appropriate erosion control facilities. The homeowner must maintain this vegetation modification in order to assure long-term protection. Land clearing or vegetation modification which exceeds one acre, whether planned to take place prior to or after development approval, must submit an erosion control plan for the review and approval of the County Watershed Management Section. Vegetation modification plans shall not be allowed which introduce non-native invasive plant species, and wherever possible should utilize native fire-resistant vegetation.

(f) The project can meet the standards established by the Fire Chief for water supply and/or water storage for fire-fighting purposes.

(g) Mitigable Critical Fire Hazard Areas. If the project lies in a Critical Fire Hazard Area and within the area bordered by the following access roads: From Day Valley Road to Freedom Blvd., to Hames Road, to Browns Valley Road to Hazel Dell Road, to Gaffey Road, down Highway 152 to Carlton Road, Carlton Road to Highway 129 and ending at Murphy Road,* and the project can meet the water storage standards, then the development may proceed at a density as determined by the Rural Density Matrix. Mitigation was based upon the following criteria:

(1) extent of the critical fire hazard vegetation;
(2) distance to adjacent fire hazard areas;
(3) accessibility for fire-fighting equipment;
(4) air moisture content;
(5) historic record of wildland fires;
(6) slope and terrain.

*This area has been mapped to denote areas where the fire hazard is of lesser concern, if mitigated by vegetation modification and water supply/storage supplementation. These maps are available at Santa Cruz County Planning Department, or at the California Department of Forestry and Fire Protection headquarters for review.

6.5.5 Standards for New Dead-End Roads

Prohibit newly constructed dead-end roads without secondary access serving more than one parcel in new minor land divisions or subdivisions which exceed the following distances from an adequate through road unless approved by the applicable fire protection agency, the Department of Public Works, and by the Planning Commission; in no case shall a new dead-end road exceed ½ mile in length.

Urban & Suburban General Plan and LCP Land Use Plan designation	500’
Rural General Plan and LCP Land Use Plan designation	1000’
Mountain General Plan and LCP Land Use Plan designation	1500’

The standard for new subdivisions of 5 or more lots shall not exceed 500’ unless recommended by the applicable fire protection agencies and the Department of Public Works and approved by the Planning Commission.

6.5.6 Maintenance for Private Roads

Require the creation or expansion of County Service Areas (to provide road maintenance), road maintenance agreements or associations (deemed adequate to provide appropriate road maintenance) for all new private roads, and for land divisions in rural areas served by private roads.

6.5.7 Certification of Adequate Fire Protection Prior to Permit Approval

(LCP) Require all land divisions, multi-unit residential complexes, commercial and industrial complexes, public facilities and critical utilities to obtain certification from the appropriate fire protection agency that adequate fire protection is available, prior to permit approval.

6.5.8 Public Facilities Within Critical Fire Hazard Areas

(LCP) Discourage location of public facilities and critical utilities in Critical Fire Hazard Areas. When unavoidable, special precautions shall be taken to ensure the safety and uninterrupted operation of these facilities.

6.5.9 Consistency With Adopted Codes Required for New Development

(LCP) Require all new development to be consistent with the Uniform Fire Code, California Building Code, and other adopted County and local fire agency ordinances.

6.5.10 Land Divisions Access Requirements

(LCP)

(a) Require all private roads used for either primary or secondary access to be maintained through road maintenance agreements and/or associations or through a County Service Area.

(b) Prohibit land divisions where any new building site is located more than ½ mile from a through road unless secondary access is provided.

(c) In the North Coast and Bonny Doon planning areas, prohibit new land divisions where any new building site is located more than ½ mile from a publicly maintained road even where secondary access is provided.

6.5.11 Fire Protection Standards for Land Divisions Inside the Urban Services Line

Require all new land divisions within the Urban Services Line to be consistent with the California Fire Code, California Building Code, and other adopted County and local fire agency ordinances.

Programs

a. Encourage fire protection agencies to enter into first alarm response and initiate contractual agreements in order to assure that the fire unit nearest the fire will respond on first alarm to a fire emergency. (Responsibility: County Fire Marshal, Board of Supervisors, local fire protection agencies)

b. Newly constructed or approved public and private roads and streets must be identified by a name or number through a consistent countywide system, which provides for sequenced or patterned numbers and/or non-duplicating naming within the County. All signs shall be mounted and oriented in a uniform manner. This section does not require any entity to rename or renumber existing roads or streets. Nor shall a roadway providing access only to a single commercial or industrial occupancy require naming or numbering. (Responsibility: Office of Emergency Services, County Fire Marshal)

c. Define levels of fire protection services using criteria relating to distance from fire stations, density of development and magnitude of fire risk. (Responsibility: Board of Supervisors, local fire protection agencies)

d. Develop fire break standards for new development to separate communities or clusters of structures from native vegetation. (Responsibility: County Fire Marshal, Board of Supervisors, State Department of Forestry, and local fire protection agencies)

e. Develop an overall fire break plan in Critical Fire Hazard Areas and implement the plan in conjunction with the Department of Forestry and fire protection agencies. (Responsibility: California Department of Forestry and Fire Protection, local fire protection agencies, Office of Emergency Services)

f. Provide, to the maximum extent feasible, two emergency access routes for all communities, with at least one developed to County standards. (Responsibility: Board of Supervisors, Planning Department, Public Works)

g. Upgrade water distribution systems where deficient to ensure adequate peak load water supply requirements for fire protection within the service areas of recognized water purveyors. Priority shall be given to areas within the Urban Services Line. (Responsibility: Water Purveyors, County Fire Department, local fire protection agencies, County Office of Emergency Services)

h. Give priority to areas within the Urban Services Line when planning expansion of fire protection facilities and equipment. (Responsibility: fire protection agencies, Board of Supervisors)

i. Encourage all fire protection agencies to participate in the development and implementation of a joint communications center. (Responsibility: Board of Supervisors, Communications Director, County Fire Department, California Department of Forestry and Fire Protection, local fire protection agencies, County Office of Emergency Services)

j. Update the Fire Protection Improvement Program and Long-Range Plan for Santa Cruz County." (Responsibility: Board of Supervisors,

k. Encourage the State Department of Forestry to provide land and air fire-fighting facilities and equipment adequate to meet estimated peak fire demands. (Responsibility: Board of Supervisors, County Fire Marshal)

l. Encourage fire protection agencies to establish educational fire prevention programs in order to have the public recognize their responsibility in preventing fires. (Responsibility: California Department of Forestry and Fire Protection, County Fire Marshal, local fire protection agencies, County Office of Emergency Services)

m. Review and update on a periodic basis the countywide Disaster Contingency Plan. Include the appropriate County agencies in all phases of disaster contingency planning. (Responsibility: Board of Supervisors, Office of Emergency Services)

(LCP) n. Update the Critical Fire Hazard Map and fire hazard severity zone maps as new site-specific information becomes available which more precisely defines these areas. (Responsibility: Planning Department, County Fire Department, California Department of Forestry and Fire Protection, local fire protection agencies)

n. Identify high fire risk areas within the Urban Services Line and rural areas with topography, hazardous fuels, structures, density similar to those found in the Oakland Hills fire of 1991. (Responsibility: Planning Department, County Fire Marshal, local fire protection agencies, Board of Supervisors)

(LCP)

p. In cooperation with fire protection agencies, develop coordinated action programs to reduce the hazard to existing development in critical fire hazard areas and fire hazard severity zones such as the following:
   (1) Assessment districts to finance road improvements and secondary access; water storage, distribution and hydrant facilities; purchase of pumper trucks and/or vegetation clearance and fire break construction.
   (2) Fire hazard inspection and code enforcement.
   (3) Public education programs on fire prevention.

(Responsibility: Planning Department, County Fire Marshal, local fire protection agencies, Board of Supervisors)

q. Amend and update the Santa Cruz County General Plan Fire Safety Element as needed, to reflect fire code amendments. (Responsibility: Board of Supervisors, County Fire Marshal, local fire protection agencies, Planning Department)

HAZARDOUS AND TOXIC MATERIALS

For more than a decade, Santa Cruz County government has played a leadership role in helping to minimize toxic hazards to the citizens and residents of Santa Cruz County. In 1984, the Board of Supervisors adopted as a statement of basic policy that it should be a statewide goal completely to eliminate the toxic contamination of any portion of the State's environment, including the land, water, and air resources of the State.

In June 1990, by adopting Measure C, the people of Santa Cruz County made a specific finding that "the introduction of toxic chemicals into all parts of the environment, in increasing quantities, has led to the pollution of the ocean, and of fresh water supplies, and to the presence of toxic chemicals in the tissues of virtually every living thing, placing the future of life on this planet in jeopardy." Measure C requires Santa Cruz County government to attempt to eliminate the use of toxic materials within Santa Cruz County where possible, and requires the reduction, recycling, and reuse of such materials, to the greatest extent possible, where complete elimination of their use is not feasible.

This section of the General Plan and LCP Land Use Plan states the basic objectives of Santa Cruz County with respect to hazardous and toxic materials, and also includes provisions relating to hazardous waste management. The provisions relating to hazardous waste management are a summary of the facilities siting provisions of the Santa Cruz County Hazardous Waste Management Plan (CHWMP), required by State law. Additional background information and more detailed policies, programs, and technical data are included in the County's Hazardous Waste Management Plan.

Objective 6.6 Hazardous and Toxic Materials

To eliminate, to the greatest degree possible, the use of hazardous and toxic materials, and where it is not feasible completely to eliminate the use of such materials, then to minimize the reduction in the use of such materials, so as to ensure that such materials will not contaminate any portion of the County's environment, including the land, water, and air resources of the County.

Policies

6.6.1 Hazardous Materials Ordinance

Maintain the County's Hazardous Materials ordinance, placing on users of hazardous and toxic materials the obligation to eliminate or minimize the use of such materials whenever possible, and in all cases to minimize the release, emission, or discharge of hazardous materials to the environment, and properly to handle all hazardous materials and to disclose their whereabouts. Further, maintain the County's ordinance relating to ozone-depleting compounds. Ensure that any amendment of existing ordinance provisions is based on a finding that the amendments will provide protection to the environment and the community against toxic hazards that is equal to or stronger than the existing provisions.

6.6.2 County Use of Toxic/Hazardous Materials

Eliminate wherever possible, and minimize where elimination is not feasible, the use of hazardous and toxic materials in the operations and programs of County government.

6.6.3 Maintenance of Standards for Use and Control

Ensure that Santa Cruz County maintains standards for the use and control of hazardous materials which are at least equal in their protection for the environment and the community to

measures imposed by other local governments within Santa Cruz County, and in adjoining counties.

Programs

a. Require an annual report by County departments on departmental efforts to eliminate and reduce the use of toxic materials in County operations. (Responsibility: each County department, County Administrative Office, Board of Supervisors)

b. Enact an ordinance regulating the storage, transportation, and use of toxic gases, with standards at least as protective as those found in comparable ordinances adopted by local governments within Santa Clara County. (Responsibility: Environmental Health, Planning Department, County Office of Emergency Services, Board of Supervisors)

c. Implement, where funding can be made available, programs to provide assistance to businesses, farmers, and homeowners, to assist them in eliminating and reducing the use of toxic materials. (Responsibility: Environmental Health, Planning Department, Agricultural Commissioner, County Administrative Office)

d. Continue County programs facilitating the safe disposal of household hazardous wastes. (Responsibility: Public Works)

HAZARDOUS WASTE MANAGEMENT

The Hazardous Waste Management section is a summary of the facilities siting provisions of the Santa Cruz County Hazardous Waste Management Plan (CHWMP), required by state law. Additional background information and more detailed policies, programs and technical data are included in the CHWMP. The intent of this section is to restate the substantive provision, relating to hazardous waste management facilities siting of the CHWMP. If any portion of this section appears to conflict with the County Hazardous Waste Management Plan, the County Hazardous Waste Management Plan shall prevail.

Objective 6.7 Hazardous Waste Management

To ensure that hazardous waste management facilities will be safely sited to protect public health and the environment, and to ensure the general management of hazardous waste through the year 2000 occurs in accordance with the implementation policies specified in the Santa Cruz County Hazardous Waste Management Plan, and any applicable state and federal regulations.

ALL FACILITIES WHICH COLLECT, HANDLE, TRANSPORT, TREAT, STORE OR DISPOSE OF HAZARDOUS WASTE

Policies

6.7.1 Managing the County's Fair Share of Hazardous Waste

Any proposed facility shall be consistent with the fair share principle, and with any inter-jurisdictional agreements on hazardous waste management entered into by Santa Cruz County.

6.7.2 Sizing Facilities

Facilities shall be designed and sized primarily to meet the hazardous waste management needs of this County, or to meet any broader future commitments made as part of an inter-jurisdictional agreement, or upon a determination of the local body that the project meets local planning criteria and serves public needs.

6.7.3 Location of Facilities

Require any proposed hazardous waste management facility to be located only in those general areas identified in the Hazardous Waste Management Plan.

6.7.4 Conformance to Federal, State and Local Siting Standards

Require all hazardous waste land disposal facilities to conform to the siting standards contained in state statues as well as conform to the General Plan and LCP Land Use Plan and Zoning ordinances of the County of Santa Cruz.

6.7.5 Floodplains and Sensitive Habitats

Prohibit any facility to be located within a floodplain or area which could adversely impact any sensitive habitat.

6.7.6 Depth to Groundwater

Require a minimum 20-foot distance between any hazardous waste facility and the highest anticipated elevation of the underlying groundwater. Proposed sites must be elevated for this criteria by a registered geologist before permitting.

6.7.7 Mineral Resources Areas

Allow facilities to be sited only where they will not preclude extraction of minerals necessary to sustain the economy of the state.

6.7.8 Non-Attainment Air Areas (Federal Clean Air Act)

Allow facilities to be sited within federally designated Non-Attainment Air Areas only under the following conditions:

(a) A risk assessment must be completed and shall consider physical and chemical characteristics of the specific types of wastes that will be handled and design features of the facility. The assessment must show that emissions will not significantly contribute to non-attainment of standards;
(b) The emissions generated must be mitigated; and
(c) The emissions generated from such facilities shall not be greater than those associated with the transportation of hazardous waste outside of the non-attainment area.

6.7.9 Prime Agricultural Land

Demonstrate an overriding public service need before approving the siting of hazardous waste management facilities in commercial agricultural lands.

6.7.10 Distance From Residences

(a) Require a Risk Assessment for the siting of a hazardous waste management facility and a 500-foot minimum buffer zone from the nearest urban and suburban density residentially zoned areas. The risk assessment shall consider the physical and chemical characteristics of the specific type of waste(s) that will be handled and any design feature necessary for the facility.
(b) Require any facility handling ignitable, volatile or reactive wastes to be sited a minimum of 2000 feet from the nearest residence unless the developer can show that the public is sufficiently safeguarded in the event of an accident.

6.7.11 Distance from Immobile Populations

(a) Require a Risk Assessment for the siting of a hazardous waste management facility and a 500-foot minimum buffer zone from an immobile population, which includes places where large numbers of people may gather and also includes schools, hospitals, convalescent homes, prisons, facilities for the mentally ill, etc. The risk assessment shall consider the physical and chemical characteristics of the specific type of waste(s) that will be handled and any design feature necessary for the facility.
(b) Require any facility handling ignitable, volatile or reactive wastes proposed to be sited within one mile of an immobile population, to prepare, at the developer's expense, a study detailing the maximum credible accident from a facility's operation.

6.7.12 Emergency Response/Safe Transportation Routes

Locate facilities of any type so as to minimize distances to major transportation services. Locate all facilities in areas where the fire departments are trained to respond to hazardous materials accidents. Road networks leading to major transportation routes should not pass through residential neighborhoods, should minimize residential frontages in other areas, and shall be demonstrated to be safe with regard to road design and construction, weight allowances, accident rates, excess traffic, etc.

6.7.13 Public Services

Limit all facility types to sites where public water and sewer and emergency facilities are available, except for existing landfill sites.

TRANSFER STATIONS FOR HOUSEHOLD AND SMALL QUANTITY BUSINESS GENERATORS

Existing and projected hazardous waste generation rates identified in the Santa Cruz County Hazardous Waste Management Plan indicate a need only for local collection and temporary storage (transfer) facilities to receive hazardous waste from household and small quantity (business) generators. Any and all such facilities sited in the unincorporated area of Santa Cruz County shall be subject to the following siting policies.

Policies

6.7.14 Require Environmental Review
Require proposed facilities to follow the Environmental Review procedures of the County. At a minimum, projects shall be reviewed for their susceptibility to natural hazards, including seismic and slope stability; and reviewed for their impacts to natural resources including groundwater and Water Supply Watersheds. Consider approval of such facilities only when a risk assessment is performed which indicates that the risks can be made acceptable through proper engineering and appropriate conditions are included as part of the design and construction of the facility.

6.7.15 Permeable Stratas and Soils
Require all above-ground facilities to have engineered structural design features, common to other types of industrial facilities, including spill containment and monitoring devices.

6.7.16 PSD Area (Prevention of Significant Deterioration Areas)
Permit these facilities to be sited in PSD Areas, as defined in the Hazardous Waste Management Plan, only if they are necessary to handle potentially hazardous wastes generated by visitors or residents in recreational or cultural facility areas which are in the PSD zone. PSD areas meet the ambient air standards of the Clean Air Act, and thus should be prevented from significant deterioration.

6.7.17 Proximity to Waste Generators
Locate household hazardous waste collection facilities close to residential and/or commercial zoned areas to encourage their use.

6.7.18 Recreational, Historic, Cultural and Scenic Areas
Allow household hazardous waste management facilities to be located in areas of recreational, historic, cultural or scenic resources only to the extent that they are necessary to handle hazardous wastes generated by visitors, workers or residents in these areas.

TREATMENT /STORAGE DISPOSAL FACILITIES FOR INDUSTRIAL GENERATORS

Existing and projected hazardous waste generation rates identified in the Santa Cruz County Hazardous Waste Management Plan do not indicate a need for local treatment, storage or disposal facilities for industrial generators within Santa Cruz County. The existing and projected needs for treatment, storage and disposal of hazardous wastes can continue to be met by out-of-County facilities. Therefore, no industrial treatment, storage or disposal facility will be allowed within Santa Cruz County. If at some future time a need can be demonstrated as determined by the Board of Supervisors, then the following siting policies shall apply.

Policies

6.7.19 Seismic Hazards
Prohibit facilities of any type to be built in zones of potential surface rupture faulting, areas of high liquefaction potential, and areas most susceptible to landslides (slopes greater than 15%).

6.7.20 Slope Stability
Prohibit facilities of any type to be built in zones of slope instability. These areas include slopes greater than 30% and areas subject to liquefaction and subsidence due to natural and man-made causes.

6.7.21 Groundwater Resources
Prohibit facilities of any type to be built in areas which are known or suspected to be a sole source aquifer or principal aquifer recharge area for a region.

6.7.22 Water Supply Watersheds
Prohibit facilities of any type to be built in areas which are known or suspected to be a Water Supply Watershed area.

6.7.23 Permeable Stratums and Soils
Exclude these facilities unless they are immediately underlain by geologic materials with a permeability of not more than 1 x 10 to the seventh power cm/second, and thick enough to prevent vertical movement of fluid to groundwater.

6.7.24 Prevention of Significant Deterioration (PSD) Areas
Consider and, if appropriate, conditionally approve, facilities in PSD areas, unless an analysis shows that air emissions cannot be adequately mitigated. These are areas which meet the ambient air standards of the Clean Air Act, and thus should be prevented from significant deterioration.

6.7.25 Coastal Zone (LCP)
Prohibit hazardous waste treatment/storage/disposal facilities of any type to be built in the areas of the Coastal Zone.

6.7.26 Recreational, Cultural or Scenic Areas
Prohibit industrial hazardous waste management facilities in areas of historic preservation and other cultural or scenic areas, as defined by the Santa Cruz County General Plan and LCP Land Use Plan.

6.7.27 Proximity to Waste Generators
Locate industrial hazardous waste collection facilities close to Large Quantity Generator (LOG) sources to minimize the risk of transportation.

Programs

a. Update the County Hazardous Waste Management Plan a minimum of every three years for compliance with State and federal regulations. (Responsibility: Environmental Health, Planning Department, Board of Supervisors)

b. Identify the types of treatment, storage and disposal facilities needed in Santa Cruz County, identify general areas where such facilities can be located, and, where appropriate, develop agreements with other counties to handle hazardous wastes produced in Santa Cruz County.

(Responsibility: Environmental Health, Planning Department, Public Works, Board of Supervisors)

ELECTRIC AND MAGNETIC FIELD EXPOSURE HAZARDS

A number of recent studies have examined the potential for risk to human health that may exist due to long term exposure to electric or magnetic fields found adjacent to electric powerlines. Some of these studies have found a potential for risk to human health. Siting of sensitive land uses (such as schools) and housing next to powerlines may, therefore, have an environmental health impact on users of the sensitive land uses and the residents of such housing.

ELECTRIC AND MAGNETIC FIELDS

In Santa Cruz County electric power is transferred from power generating stations to substations by means of 115,000-volt transmission lines. Substations are used to "step down" the electricity's voltage to facilitate the transfer from transmission to distribution lines. Distribution lines bring electricity from substations into neighborhoods. In Santa Cruz County, distribution lines operate at voltages from 4,000 to 21,000 volts. A magnetic field measured in units of milligauss, and an electric field, measured in volts per meter, found in the vicinity of these powerlines, and commonly called together the electromagnetic field, are a consequence of the delivery of the electric power. These fields fall off rapidly in strength with increased distance from the powerlines.

The strength of a magnetic field at a given site depends on several factors such as how many conductors are carrying the electric current, their spacing, and height above the ground. The magnetic field will also be proportional to the value of electric current being carried, which varies with electric power demand by time of day, day of week, season of the year, and changes over the years due to growth. Furthermore, the magnetic field also varies with height, so that the magnetic field in a second story bedroom could be substantially larger than the magnetic field found three feet off the ground in a first story living room. This is a consequence of getting closer to the current carrying conductors with increase in structure height or even change in ground height. The value of the magnetic field is essentially independent of the powerline voltage.

In contrast to the magnetic field, the electric field from powerline does not depend on the current being carried, but it dependent on the voltage of the line. The higher the line voltage the higher will be the electric field magnitude around the line. The value of the electric field will also be drastically modified by objects in the field. For example, the presence of housing, trees, shrubs, and people will markedly change the electric field value at a given location.

Measurements of the existing electric and magnetic fields across a given site, and at a given time, are easily made and may be available at no cost from local utilities. Estimates of the fields expected can also be obtained from existing computer programs, but would be based on assuming ideal conditions, such as parallel lines with no sag and level ground.

A typical 115,000-volt transmission powerline would have a magnetic field of 25 to 40 milligauss directly under the powerline at a height of three feet. The magnetic field would decrease with distance from the powerline and would drop off to a level of 1.5 milligauss at a distance of about 150 feet from the powerline, at the same three-foot height. The same 115,000-volt transmission powerline might have an electric field of 1,000 volts per meter directly under the powerline and the electric field would drop to 50 volts per meter at a distance of somewhere between 100 and 200 feet from the powerline. Any objects in the vicinity of the powerline would drastically change these electric field values.

Numerous studies have suggested a potential for adverse health effects due to long term exposure to electric and magnetic fields, such as found near powerlines. The siting of housing, or other habitable structures,

such as schools, near powerlines will increase the electric and magnetic field exposure to future residents above the background levels and may thus increase the risk of disease.

LIMITING ELECTRIC AND MAGNETIC FIELD EXPOSURE

Due to the potential for adverse health effects a practice of "prudent avoidance" is recommended. Prudent avoidance means limiting exposures that can be avoided with relatively small investments of money or effort and generally includes increasing the distance and decreasing the time of exposure between people and sources of electric and magnetic fields.

There are no national standards or regulations specifically for powerline magnetic fields. Some local attempts at regulation have, however, been made to date. California has not established any limitations for siting homes near powerlines, although some guidelines are currently being used for school sites near transmission powerlines. The School Facilities Planning Division requires that no new schools be sited 100 feet from the edge of the right-of-way of 100,000-to-110,000-volt lines; 150 feet from 220,000-to-230,000- volt lines; and 250 feet from 345,000-volt lines.

There are generally three approaches to mitigating adverse impacts from electric and magnetic fields. The first typically involves site planning techniques to set habitable structures back from sources of electric and magnetic fields and thereby avoid hazardous doses. The second is to use engineering solutions, such as reconfiguring the powerlines, to mitigate electric and magnetic fields. The third, more difficult (and costly) approach involves placing powerlines underground and removing constraints to site development by significantly diminishing the magnetic field strength or completely eliminating the electric field, thus reducing the potential health hazard.

1. **Site Planning**
   With a transmission or distribution powerline crossing a subdivision site, the subdivision could be designed to set habitable buildings back from the powerlines, in a manner consistent with the current state of scientific knowledge.

2. **Undergrounding the Powerline**
   It is possible substantially to reduce the electric and magnetic fields by undergrounding the powerlines in a metallic pipe. The electric field would be essentially eliminated by the shielding of the metallic pipe and the magnetic field could be considerably reduced because the conductors are placed closer together causing the magnetic fields from the individual conductors to partially cancel each other.

3. **Reconfiguring the Powerlines**
   The number of conductors in a transmission or distribution powerline can be increased and their current fed (phased) in ways to achieve significant cancellation of the electric and magnetic fields near the ground. The techniques to considerably lower the fringing electric and magnetic fields around powerlines are known at this time. In addition, there is considerable research effort underway in this area.

Objective 6.8a Electric and Magnetic Energy

To protect the public from potential health hazards associated with electric and magnetic fields based on the then current state of scientific knowledge through appropriate limitations on the use and development of land near electric transmission and distribution powerlines and substations which could create health hazards.

Objective 6.8b New Electrical Facilities

The planning, siting, and construction of future electrical facilities should minimize electric and magnetic fields near sensitive areas (for example schools, hospitals, playgrounds), residential uses, existing areas of high electric and magnetic exposure, and areas of future development.

Policies

6.8.1 Prudent Avoidance

In regard to exposure of electric and magnetic fields, the policy of the County of Santa Cruz is one of "prudent avoidance." Prudent avoidance assumes that exposure to electric and magnetic fields may present a health risk. The policies in this section shall apply to residential land divisions or other new discretionary development and other sensitive land uses, not including development of one single-family dwelling on an existing lot of record.

6.8.2 Measuring Ambient Magnetic Fields

Require the measurement of the ambient magnetic fields for all residential land divisions or other new discretionary development (not including development of one single-family dwelling on an existing lot of record) where such property is within 150 feet of 21 kv or greater transmission or distribution powerlines of the electric power delivery system. The measurements should delineate the area on the site where the magnetic field is above the level at which potential health effects may exist, based on the then current state of scientific knowledge.

6.8.3 Development Mitigation Measures

Utilize the following techniques to minimize exposure to potentially hazardous electric and magnetic fields from electric powerlines.

(a) Site Planning – Locate and/or cluster habitable building envelopes away from the potentially hazardous electric and magnetic fields consistent with the current state of scientific knowledge.

(b) Underground the Powerline – Reduce the electric and magnetic fields by undergrounding powerlines in a metallic pipe or other appropriate insulator.

(c) Reconfigure the Powerline – Reconfigure lines and conductors in transmission or distribution lines to achieve significant cancellation of the electric and magnetic fields near the ground.

6.8.4 New Transmission and Distribution Facilities

The siting of new transmission and distribution powerlines and substations shall minimize electric and magnetic fields near existing sensitive areas, residential uses, existing areas of high electric and magnetic field exposure, and areas of future development. Public exposure to electric and magnetic fields shall not be increased where practical alternatives exist.

Programs

a. Work with PG&E and other relevant private and public organizations to maintain EMF informational handouts and reference lists for public education. (Responsibility: Public Works, Planning Department, Environmental Health, Board of Supervisors)

b. Identify those areas where a potential hazard from exposure to electric and magnetic fields exist by mapping the location of the transmission lines, distribution lines, and substations in the County. (Responsibility: Public Works Department, Environmental Health, Information Service-GIS Planning Department