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REGIONAL OCEAN COASTLINE PLAN

FOR THE SAN FRANCISCO BAY AREA

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ABAG ASSOCIATION OF BAY AREA GOVERNMENTS

BAY AREA REGIONAL PLANNING PROGRAM

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REGIONAL OCEAN COASTLINE PLAN

FOR THE SAN FRANCISCO BAY AREA

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16. Abstracts This Plan is concerned with the Ocean Coastline of the San Francisco Bay Area. It is a plan to promote coastline conservation while encouraging use and to promote a regionally responsible system for coastal management. The Plan has objectives and policies for the areas of environmental quality, circulation, open space, conservation, and development. Some coastal areas are designated for possible development and other areas for permanent preservation as open space. Three implementation strategies are discussed which would make the policies of the Plan a reality; public service strategy (accessibility plus water and sewer services), acquisition strategy, and development review strategy. The Plan contains recommendations on a governmental organization for coastal planning and management as well as a process for coordinating the regional-local development review process.

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I. INTRODUCTION AND SUMMARY

NEED FOR THE PLAN

The meeting of land and ocean in the San Francisco Bay Region is one of the most prominent features of a unique and varied environment. Ironically, the ocean coastline, by its appeal, generates the very forces which threaten it. In response to this threat to the coastal area and its resources, the Association of Bay Area Governments has prepared this Regional Ocean Coastline Plan as the Coastal Element of the Regional Plan.

The coastal zone includes a set of fragile ecological systems, much of which cannot tolerate heavy human use. The coast's vulnerability has sparked a growing regional desire for more permanent conservation action. Similar sentiment from throughout the State culminated in passage of the Coastal Zone Conservation Act in 1972.

Coastal development has been the result of a complex set of public and private decisions made in an uncoordinated and incremental manner. Moreover, many hidden "costs" of development are passed on to the public, including environmental pollution and degradation of natural resources; these should be more explicitly considered. Additionally, public uses and uses which provide a significant public benefit should be better able to compete in the market for needed sites.

Existing and future use of natural resources, recreation resources, scenic values, and unique agricultural lands of the coastal area involve decisions which cannot be made solely by local governments which are not always able to identify larger interests. Although each governmental level has important contributions to make to a comprehensive planning and management process, regional, state and national perspectives are needed. Thus, this plan presupposes that responsibility for the future use of finite and often perishable resources will rest with that level of government best able to consider the particular issue rationally, responsibly and responsively.

COASTAL GOALS AND POLICIES

The plan seeks to achieve two primary goals:

To promote the conservation of coastal resources of regional significance, while encouraging utilization of coastal lands and waters to benefit existing and future populations.

To promote a regionally - responsible system to influence, administer and, where necessary, regulate public and private uses in the coastal area.

The Regional Ocean Coastline Plan includes basic regional coastal policies regarding conservation and utilization of coastal resources, maintenance and enhancement of environmental quality, and the appropriate use or retention of open spaces. The

plan's policies are based on the premises that use of coastal resources should not be allowed to diminish the quality or integrity of the coastal environment, and that it is in the regional interest to promote conservation and enhancement of the coastal area for use and enjoyment by present and future generations.

It is recommended that coastal resources with a significant value to the region as a whole should be reserved for uses which are dependent upon them and which provide substantial public benefit. Thus, on the basis of documented resource values, all coastal lands and waters are classified into one of three conservation/development designations: Community Growth, Open Use/Limited Development and Natural Resource Conservation.

Generally, only those areas within which relatively intensive coastal use and development may be permitted have been designated for community growth. Areas which should remain predominantly in open space use have been designated for either open use - limited development or natural resource conservation. In each of these, the immediate shoreline is considered more valuable and more vulnerable to adverse development impacts. Hence, more stringent requirements are proposed for that area.

Community Growth areas include existing population settlement areas 1) which have adequate levels of accessibility and public services or those which may be readily expanded; 2) where there is little significant conflict with open space values or significant hazard to public safety; and 3) whose controlled growth would be compatible with the regional coastal policies. In a community growth area, only developments which are typically coastal - related or oriented to the specific local community are appropriate.

Open Use - Limited Development areas should have open uses predominating, but some limited development may be permitted which respects the coastal character, is able clearly to demonstrate either substantial coastal economic dependency or significant public benefit, and is compatible with both open space resource retention and the severe hazards to public safety often associated with these areas.

Natural Resource Conservation areas are all designated regional open space value areas, specifically including: marine and coastal wildlife habitats, prime agricultural resources, and public recreational resources. These are areas appropriate for only open space uses which will provide for retention of these values. In natural resource conservation areas, only those land or water uses are appropriate which: clearly demonstrate both substantial coastal economic dependency and significant public benefit; are without reasonable alternative sites outside the natural resource conservation area; are compatible with the severe hazards often associated with these areas; and will provide for the retention of identified regional open space resources.

SUPPORTING STRATEGIES

Regulation is the most important tool for implementing the plan. This power has been delegated largely to local governments, whose efforts have not yet been effective in curtailing the threats to coastal regional resources. Thus, implementation of the Regional Ocean Coastline Plan must rely on additional avenues and techniques,

some of which may be applied immediately by ABAG and the regional coastal commissions. Others will require new enabling legislation or cooperative action by regional and local jurisdictions.

These supporting strategies provide a guide to actions which influence the location and intensity of development, and to public acquisition and development actions on coastal lands and waters.

Public Services

Coastal development should be directed to designated community growth areas and away from areas of high open space value or hazards to public safety through control of location, capacity, and timing of major public facilities.

Accessibility

1. A regional coastal recreation access plan to develop an attractive public transportation alternative should be prepared immediately. Supplementary public recreational access should be provided for all significant increases in recreational facilities.

2. Major upgradings which would significantly increase the vehicular capacity of the coastal roadway network may be permitted only within the Greater San Francisco County urbanized area and environs.

3. Proposals for development outside community growth areas also should provide local-serving commercial facilities and internal circulation systems to minimize external automobile travel.

4. A trail system is also proposed, including biking, hiking and horse trails to serve regional needs. Major recommendations consist of interconnected shoreline, coastal terrace, and upland ridge trailways, and trails to provide access to important recreational opportunities and interior population centers.

Water Supply and Sewage Disposal

1. In **Community Growth** areas, extension of facilities and creation or expansion of service districts are permissible.

2. In **Open Use-Limited Development** areas, no expansion of existing facilities to increase capacity beyond that necessary to serve existing development should be permitted. In such areas only internally supporting, self-contained facilities should be permitted.

3. In **Natural Resource Conservation** areas, extensions of water supply and sewer service facilities may be provided for recreational uses, and extensions of water supply facilities may be provided for agricultural uses.

Five additional strategies deal with water supply and sewage disposal **outside community growth areas:**

a. except for agricultural uses, no interbasin transfer of water shall be permitted;

b. effluent treatment must be accomplished locally, using an appropriate land disposal or package treatment system, and all discharges must comply with requirements to be set by regional water quality control boards;

c. all direct and indirect costs for water supply and sewage disposal systems should be borne by their developer or user and not passed on to the public;

d. sewer and water systems must be designed and constructed at a capacity appropriate only for the proposed use;

e. services may be inaugurated, expanded or extended for development already initiated which assumed available services, and development already completed for which such service is now required by discharge requirements of a regional water quality control board.

Acquisition

Priorities for acquisition have been assigned and mapped in the plan. Key coastal open space resources which do not lend themselves to regulation are assigned an acquisition priority, based on the relative regional open space value of the area and the threat of loss. It is not the intent of these priorities to supplant continuing park, recreation, open space or natural preserve acquisition programs of the many agencies involved in such work, but to augment regulation in an attempt to assure compatible use of regional open space resources.

Development Review

Implementation of the coastal plan will rely in large part on effective and coordinated review of development by public agencies. Regulation consistent with this plan will ensure that both public and private coastal use and development are appropriately located and that adverse impacts on the coastal environment will be minimal.

Review criteria are predicated on the regional coastal policies and supporting strategies. They have been organized into the following six tests to determine if a development proposal conforms to the Regional Ocean Coastline Plan.

1. The proposal must meet coastal "dependency" and/or public benefit criteria appropriate to the conservation/development area in which it is located (i.e., community growth, open use-limited development, or natural resource conservation).

2. Uses may not degrade the quality of critical open space elements of the coastal environment — wildlife habitat resources, recreational resources, and prime agricultural resources. Wildlife habitat resources should be limited to educational, scientific and recreational uses which have a high degree of compatibility and minimal impact. Public recreational resources should be maintained in appropriate open space uses for public use and enjoyment. Prime agricultural resources should be reserved for appropriate agriculturally - dominated activities. They should not be committed to development nor subjected to such development pressures that agricultural operations are taxed so heavily that they cannot survive.

3. Hazards to public safety include earthquake-induced ground shaking, slope instability, shoreline erosion, steep slopes and flooding from storm runoff or seismic sea waves. Development should not be permitted which could reasonably be expected to result in significant hazards to persons or property, or where demands may be reasonably anticipated for major alterations to the environment as protection against hazards.

4. Development must conform to all public service policies indicated above. Additionally, development which would result in levels of use in excess of existing highway capacity should not be permitted.

5. No development should prevent reasonable and appropriate public access from public roads to the tidelands. An upland public easement, at least 100 feet in width, should be dedicated to provide access along the shore. Such easements are to be in addition to setbacks necessary due to hazards.

6. Other review criteria are arranged in four categories: resource conservation, water resources, environmental quality and visual impact. Their objective is to minimize detrimental impacts on the coastal environment.

ORGANIZATION, POWERS AND PROCEDURES

The plan's implementation assumes that all levels of government will play a useful role. Their respective interests and capacities differ and corresponding responsibilities should vary accordingly.

Three major organizational options are presented: a separate ocean coastline agency; a coastline agency as part of a limited multi-purpose regional agency and a single consolidated regional government. The plan recommends the limited multi-purpose regional agency as the form which should be given the most immediate attention, and which can preserve ocean coastline interests effectively.

New powers to coordinate, channel and tailor public facilities are included in the plan to cover the activities of the state agencies, special districts and local agency formation commissions most directly involved.

A system of administrative review is proposed in the plan as the basic regulatory approach, also utilizing new forms of regional dedications and exactions. The specific regulatory system selected, after review of several alternatives, includes shared regulatory authority between the regional and local government and avoids the necessity for dual permits and redundant reviews.

II. THE COASTAL ENVIRONMENT

INTRODUCTION

The San Francisco Bay regional coastal area covers 246 miles of ocean shoreline in Sonoma, Marin, San Francisco and San Mateo Counties, encompassing, most notably, Bodega and Tomales Bays and Bolinas Lagoon. The coastal area is not only of immeasurable significance as the place where natural forces are most dramatically displayed, but is also where adverse effects of insensitive actions become as dramatically evident.

This chapter is a brief summary of conditions beginning with a discussion of issues and problems accompanying man's occupation and use of the coastal area, and concluding with a synopsis of physical environment factors.

COASTAL CONFLICTS AND PROBLEMS

Coastal Use Conflicts

In the past, local planning and development efforts were predominantly urban-oriented. Land divisions and development have pre-empted prime agricultural lands, threatened unique natural habitats, and diminished the scenic and recreation values of the coastal area. Moreover, many developments have occurred on sites with severe public safety hazards, or are further straining already limited water resources. Agencies at other levels also acquired and developed beaches and other recreation areas, leased and granted tidelands, regulated the production of minerals and timber, protected fish and wildlife, regulated commercial fisheries and allowed development to encroach on areas having high open space value and severe hazards to public safety – all separately and with little coordination to foster rational decisions.

Often there is controversy over changing the existing open space character of the coastal resource. Many of the conflicts are clashes between development and public open space or public safety values, while others stem from preservationist stances of local residents who see their life style threatened by further growth.

Some efforts have been made by local, State and federal agencies to purchase coastal resources for public use. However, this approach has not proven completely successful in ameliorating coastal problems. As public ownership expands, local property tax rolls decline, and the fiscal strain on local governments increases. Moreover, many public management programs and public developments have been as insensitive to coastal surroundings, their neighbors and regional needs as has private development.

Several underlying factors contribute to the current situation. The most important are the system of allocating resources, the existing tax structure, fragmented governmental organization, and uncoordinated public expenditures on services and facilities.

Public Access

Inaccessibility by the public to State-owned tidelands has become a matter of widespread public concern. The public has a right to use State-owned tidelands for certain uses, including transient recreation, but if members of the public cross privately held uplands without permission, they are liable in civil trespass unless they can show that an easement has been dedicated to the public under the common law doctrine of implied dedication.

Easements created by implied dedication can provide a means of securing public access. But although existing easements may not be cut off, recent legislation enables coastal landowners to prevent future dedications from arising by simple publication or posting procedures.

Hence, permitting development without reserving adequate public access to the shoreline results in a loss difficult to remedy. State law requires the provision of reasonable public access by a subdivision fronting upon the coastline, and some public access may be secured in this manner. Unfortunately, the law does not apply to land used for non-subdivision purposes.

Pressures for Development

Allocation of Coastal Resources

Most coastal agricultural and recreation activities occupy or desire lands highly prized by developers who, through the existing "market" system, are able to bid the prices above levels which open space users can afford.

The "market" is not purely private. It has been influenced and modified by government in the public interest with the intent that it not be diverted from socially and environmentally desirable ends. Government also enters the market directly by acquiring title to lands and dictating their use, as in the case of parks, beaches and military reservations. Moreover, government has influence through investment in public service facilities such as roads and utilities, which generate increases in land value in the areas served.

Nevertheless, the market still tends to favor conversion of coastal lands from open space uses to residential, industrial and commercial development. Several shortcomings remain:

1. The present system does not place a proper price on many coastal resources, and hence, their true value is not reflected.

2. At present, there is little attempt to include all external costs in the accounting systems of land and water users. As a result, the public bears costs that rightfully should be paid by the resource user.

3. The present system does not adequately reflect the true value of some public uses of the coastal area. Hence the public's buying power in the market is diminished.

4. The possibility of future scarcity of coastal lands, waters or other resources is not adequately considered in the present market.

Tax Structure

A key contributor to pressures for coastal land development is the existing tax structure. Analysis of economic returns from open space uses makes clear that ad valorem property taxes based on the urbanized value for land, when the source for tax payment is an open space use return, often force open space lands onto the market. This is true even when full use is made of California's Land Conservation (Williamson) Act. Although the act's intent is to preserve open space lands for 10 or more years, its impact is not sufficiently reflected in market values to permit a contracting landowner to manage open space lands in the coastal area.

Beyond the direct and immediate impact of property taxation, there is another, more subtle, tax impact. Even if the temptation to accept "market values" during one's lifetime can be withstood by an owner committed to open space uses, inheritance and estate tax appraisers have no comparable motivation. Inheritance and estate tax impacts often leave heirs with no alternative but to sell and realize the development potential of coastal open space lands.

Public Facilities and Services

Public investments in infrastrastructure—services to private and public development – constitute perhaps the primary factor that has shaped, and will continue to shape, the pattern of land use in the coastal area. Large-scale development has a high degree of dependency upon these public investments, and particularly upon accessibility, water supply and sanitary sewer service. The availability, or even the promise, of these services increases the potential uses of the land, resulting in land value increases that exclude many open space uses from the market. The provision of these services acts as a catalyst to development and the expansion of urban areas. Once development has begun in response to the availability of public services, it is accompanied by further pressure for expansion of public services, and followed by additional development – and the once-open nature of the coastal area recedes even further into the irretrievable past.

Public investment is also important because it may be publicly controlled and directed. Public investments are committed on the basis of public policy – either express or implied, intentional or accidental – as to the type of development and coastal environment desired. It is clear that such public investments can be used as positive instruments of achieving public policy on conservation and development goals of the coastal area.

Major Governmental Influences

Coastal resources have been manipulated for many years, usually on a single-purpose basis. Many governments or agencies have viewed the coast and its resources from an extremely narrow perspective. They have acquired and developed beaches and other recreation areas, leased and granted tidelands, regulated the production of minerals and timber, protected fish and wildlife, regulated commercial fisheries and

planned for development. Yet, this has often been done with little or no mutual coordination, and largely without an established regional, State or national coastal policy or planning framework assuring rational decisions in the broader public interest.

Federal and State Agencies

At the beginning of this planning program, there was no planning and management structure to allow for systematic review and coordination of the full range of current and future interests in the region's coastal area. However, at the general election in November, 1972, California voters enacted by initiative the California Coastal Conservation Act of 1972. This created a State commission and six regional commissions. The latter has initial permit issuing power over proposed development within a 1,000 yard strip back from the ocean, and a charge to make recommendations to the State commission, which is to prepare the California Coastal Zone Conservation Plan for submission to the Legislature by December 1, 1975. The regional commissions must prepare their conclusions and recommendations, which shall include areas that should be reserved for specific uses or within which specific uses should be prohibited, to the State commission by April 1, 1975. The Act and constituent authority are effective only until the 91st day following the adjournment of the 1976 Regular Session of the Legislature; the date the law is repealed.

The coastal commissions join several other agencies having primary concern with coastal area management. Several of these have regulatory powers, while the mission of others is to investigate, manage or advise. Principal regulatory authority over submerged lands and ungranted tidelands within California is vested in the State Lands Commission. The U. S. Army Corps of Engineers, in administering legislation based upon the federal navigational servitude over navigable waters, also exercises a significant regulatory effect. The authority of cities and counties over such lands varies depending upon whether they are in State, local or private ownership.

The State Lands Commission may permit the dredging and filling of State-owned submerged lands and tidelands for improvement of navigation, reclamation, flood control or as an incident to permitting the construction of groins, seawalls, bulkheads, etc. on such land. The Commission may issue a permit and collect rent for allowing littoral owners to build groins, jetties and bulkheads on State-owned lands. The Legislature has given the State Lands Commission broad powers to exchange State-owned tidelands and submerged lands for publicly or privately owned lands. The exchange must be in the best interests of the State for improvement of navigation, aid in reclamation, flood control or "to enhance the configuration of the shoreline for the improvement of the water and upland." So long as the exchange does not substantially interfere with the public trust and equal values are given and received, the public agency or person receiving State lands may fill and improve them, and upon resolution of the Commission, they become free of the public trust.

The U. S. Army Corps of Engineers is responsible for administering laws for protection and preservation of navigable waters and for construction, operation and maintenance necessary to the improvement of rivers, harbors and waterways for naviga-

tion, flood control and related purposes. The Corps requires a permit for any dredging, filling or construction in navigable waters. Under current regulations, a permit is required for any such activity which extends below the line of mean higher high water. Corps permits are required regardless of whether other government agencies are exercising concurrent permit jurisdiction. Before granting a permit, the Corps requires that all appropriate local, regional and state permits be obtained.

Other federal agencies with a direct interest in the coastal area include: the U. S. Bureau of Sport Fisheries and Wildlife, National Park Service and Geological Survey – all in the U. S. Department of the Interior. The Bureau of Sport Fisheries and Wildlife is responsible for operation of national wildlife refuges, regulation of migratory bird hunting, management of fish and wildlife populations, and improvement and protection of a quality environment for fish and wildlife. The National Park Service operates national parks, monuments and recreation areas. The U. S. Geological Survey investigates, performs research, and classifies lands according to the resources present, and is responsible for enforcement of departmental regulations applicable to oil, gas, and mining leases, permits, licenses and contracts.

Other involved State agencies include the Departments of Navigation and Ocean Development, Parks and Recreation and Fish and Game, all in the resources agency. The primary function of the Department of Navigation and Ocean Development is to coordinate State efforts in ocean-oriented activities. The Department is responsible for beach erosion control, in cooperation with the U. S. Army Corps of Engineers, and for studying, recommending and funding local construction of boating facilities. The Department of Parks and Recreation acquires, develops and operates units of the State Park System, which includes parks, recreation areas, historic parks and monuments, beaches and reserves. The Department of Fish and Game is responsible for protection, preservation, propagation and enhancement of California's wildlife resources, enforces applicable laws and regulations, and may acquire lands in the interest of wildlife and recreation.

Regional and Local Agencies

As the designated regional clearing house, the Association of Bay Area Governments (ABAG) must review requests for federal and State funding of projects for conformance with federal law (including NEPA, discussed below) and with adopted regional plans, programs, and policies, pursuant to the directives of U. S. Office of Management and Budget Circular A-95. Coastal problems and issues have only begun to be effectively addressed at the regional level, and the A-95 review function does not pertain either to private development on private property or to projects to be financed entirely by local government.

The National Environmental Policy Act of 1969 (NEPA) authorizes and directs all Federal agencies to utilize environmental and social information, along with economic and technical considerations in their decision-making. Furthermore, these agencies are required to prepare an environmental impact statement for any project that would have a significant effect upon the environment. Agencies are also required to consult with other agencies having applicable expertise or jurisdiction.

The California Environmental Quality Act of 1970 has been patterned after NEPA and contains similar requirements. Under the Act as amended, an environmental impact report must be prepared for all proposed public and private projects which may have a significant effect upon the environment. There is no requirement in the legislation for its guidelines that the impact determinations be used in the decision-making of the reviewing agency proceeding with the project.

ABAG's review of such environmental impact statements should be an integral part of the regional planning process, and should serve to identify impacts as they relate to the plans, programs and policies of the region. However, as it presently operates, impact statement review is not an assessment of the environmental impact on the region, but rather is a process for identifying omissions and inadequacies in the statements submitted. Review must be accomplished within a very short time period, concurrently with review by all the single-purpose agencies with expertise in specific functional areas. However, the ultimate impact of a project is determined by interaction of individual impacts, and ABAG has no effective opportunity to review these. This situation effectively precludes a comprehensive over-view of a project and its real impacts for conformance with regional plans, policies, and programs, because the review process is limited to an isolated exercise of responding to the statement as submitted.

The Metropolitan Transportation Commission was established by State law in 1970 to perform regional transportation planning for the nine-county Bay Area. The Commission's powers extend beyond planning to approval of construction of any trans-bay bridges and multi-county transit systems on exclusive rights-of-way. State highway construction is to conform to the Commission's plan except in cases of overriding state interest. The Commission is empowered to allocate State aid for mass transportation, and reviews and approves applications for federal aid for transportation improvements of regional significance. The Commission's regional transportation plan, adopted on June 27, 1973, includes consideration of the plans of State and regional agencies for the Bay Area.

The Bay Area Sewage Services Agency (BASSA) is a nine-county public entity responsible for regional water quality management within the nine counties of the San Francisco Bay Area. The Agency is empowered to perform the following functions: prepare and adopt comprehensive water quality management plans for the San Francisco Bay Region; conduct studies and research pertaining to regional water quality management; participate in development of water quality standards and requirements proposed by federal or state agencies; review and approve applications for financial assistance for water quality control facilities proposed by subregional agencies; and construct and operate waste water interception, treatment, disposal and reclamation facilities by request or when necessary.

The Regional Water Quality Control Board is empowered to establish discharge requirements and issue permits for all new and existing facilities which discharge waste into waters of the region. The board exercises no control of structures per se. Discharge requirements are required for major dredging operations. Certification from the regional board is now required by the Army Corps of Engineers before

federal permits will be issued for projects involving fill of navigable waters. The Corps will not issue a permit unless the Regional Water Quality Control Board certifies that the proposed fill will not cause a violation of established water quality standards.

In California, cities and counties retain major regulatory power over development review. The Coastal Conservation Act allows veto of such actions, but still requires local approval of a project.

County boundaries normally extend seaward three miles from the coastline. City boundaries may be extended into adjacent tidelands and submerged lands, but such annexation must be approved by the State Lands Commission. The Commission's determination of offshore annexation is conclusive. In other areas, of course, the approval of annexation, incorporation or creation or extension of special districts is the responsibility of the Local Agency Formation Commission, a group in each county representing both cities and the county.

The most pervasive influences on the coastline at the local level are those generated by the myriad special districts in the coastal area. These districts provide the services and facilities which are the precursors of growth. Hence, review and control of these actions at an early time is one of the most important needs for improved coastal conservation.

ENVIRONMENTAL OPPORTUNITIES AND CONSTRAINTS

Introduction

The uniqueness and value of the coastline may be comprehended by realizing that it is a single small line on a vast continent. Yet that small line, and its broader environs, imply different hydrologic systems and climatic conditions which justifies the intensive attention given the coastal area. This section briefly examines the environmental factors which distinguish and unify the coast. A composite map of factors, as compiled from data available through April, 1972, is shown in Chapter III as Open Space Values and Constraints.

The region's coastal area has been defined to encompass the immediate coastal environment as well as those areas considered by the general public to be in the coastal area. This includes that portion of the four coastal counties of the nine-county region of the Association of Bay Area Governments which:

1. Is visible from the ocean coastline or the cliffs immediately above; or
2. Is visible from the major longitudinal coastal travel corridors; or
3. Exhibits accommodation of, or suitability for, marine and coastal wildlife or coastal-dependent agricultural activities.

Regional Coastal Resources

The Ocean and Climate

Coastal climatic conditions and marine habitat are intimately related to, and are

primarily dependent upon, the 400 mile wide California Current that moves slowly southeastward along the region's shore. During the spring and summer, the region's coastal waters are subject to upwelling, a drawing to the surface of a corridor of nutrient-rich colder waters from as deep as 600 feet in a broad area adjacent to shore. In the autumn, upwelling ceases and the relatively warm Davidson Current from the south partially dissipates the relatively colder waters inshore.

Experiencing generally westerly to northwesterly winds throughout most of the year, the region's coastal area has a maritime climate—relatively warm and wet winters, cool, rainless but foggy summers, small daily and seasonal temperature ranges, and high relative humidities. Because of marine influence, lines of equal temperature are oriented generally parallel to the coast instead of to the lines of latitude. Transition from this marine-dominated climate to the greater climatic extremes inland is influenced mostly by topography.

Agricultural Resources

The soils and the marine-dominated climate of the central California coastal area provide an extremely valuable agricultural opportunity, which makes possible the production of several crops highly dependent on such conditions. These include artichokes, broccoli, brussels sprouts, cauliflower and cut flowers. The region's best and most extensive production area for these crops is in coastal San Mateo County, but the two northern coastal counties have several small suitable areas in narrow stream valleys as well.

In San Mateo County, the most suitable lands (with soils of the Tunitas-Lockwood and Watsonville-Elkhorn soil associations and located within the maritime plant-climate zone) are generally within 1½ miles of the shore and occupy approximately 75% of all such lands between Point Montara and Point Ano Nuevo.

Lands suitable for grazing are abundant and are of special interest due to the importance of grazing and the threat to its survival posed by present tax policies. North of the Russian River, in Sonoma County, such lands are in a band ½ to ¾ mile wide, parallel to the shore, with small exceptions due to adverse vegetation conditions. South of the Russian River, this zone widens considerably to include virtually all the coastal area as far south as Bolinas, interrupted only occasionally by forested canyons, areas of brush and stream valleys. Between Bolinas in Marin County and Point Montara in San Mateo County, there are very few areas with conditions suitable for grazing. In San Mateo County, such lands include all areas suitable for coastal dependent crop production, plus a broad zone (with frequent interruptions due to lack of suitable vegetation) just inland of that area from the City of Half Moon Bay to Point Ano Nuevo.

Recreation Resources and Amenities

Recreation resources of the region's coastal area provide outstanding leisure opportunities for residents and visitors alike, and are a major aspect of the regional quality of life. Equally significant, coastal recreation amenities support the economic and environmental stability of the coastal area, and, indirectly, the entire region. The

variety of recreational experiences available is considerable.

Areas identified by various federal, State, and local agencies, and areas having outstanding scenic value and streams suitable for boating and fishing are considered to be of significant regional recreational value. Existing and potential recreational resources include parks, beaches, campgrounds, historic areas, important waterways and scenic amenity areas.

Marine and Coastal Wildlife Habitat

Fish and wildlife populations exist wherever the composite of environmental conditions is suitable. Terrestrial habitat areas are a varying mixture of grasses, trees and shrubs of many species and in many combinations that distinguish one community from another. They consist of a unique combination of plant and animal life, and range from deep redwood forests to the sparse vegetation on coastal sand dunes. Often these habitats are found only near the coast, or have certain characteristics that set them apart from similar inland areas.

Aquatic habitats combine fresh and salt water with varying types of bottom conditions – mud, sand and rock – into the coastal intertidal and subtidal areas. They include fresh and salt water marshes, mudflats, estuaries and sandy and rocky intertidal and nearshore areas. These are unique sorts of environments and each has a very important role in a portion of the life cycle of almost every marine organism.

Between Gualala and Fort Ross the coastal area is predominantly in open grasslands backed by maritime pine forest. South of Fort Ross the forests thin considerably, and north coast grasslands occupy the more exposed areas with small wooded areas in the more protected canyons. These grasslands continue with varying degrees of tree cover along the east side of Tomales Bay to south of Point Reyes Station before the wooded character again begins to dominate. Coastal and marine birds nest in large numbers in selected locations along this rugged coast, and the intertidal and nearshore subtidal areas abound with marine life.

Within this area, there are a number of important freshwater and estuarine habitats, most notably Russian River, Bodega Bay, Estero Americano, Estero de San Antonio, and Tomales Bay. The Russian River supports a wide variety of wildlife in the riparian habitats along its banks, and is an important salmon and steelhead spawning stream.

Coastal strand communities are found on the dunes and sand spit to the north and south, respectively, of Bodega Bay. The Bay itself supports a wide variety of birds, shell fish and other marine life that are dependent on its wetland habitats.

The Estero Americano and the Estero de San Antonio both contain high quality estuarine and coastal marsh habitats, and are extremely important to resident and migratory bird populations. They are surrounded by rolling grasslands with minor areas of shrubs and occasional trees. Tomales Bay is another area of high marine and coastal wildlife habitat value. It varies from true marine conditions at its mouth to a high quality estuary at its southern extremity, and supports large numbers of shell fish, including commercial oyster operations. The shore areas of the Bay are

diverse in their characteristics, and include coastal strand communities as well as coastal marshes and mudflats of high habitat value to shellfish and shorebirds.

To the west and south of Tomales Bay is the Point Reyes Peninsula, which contains several different types of coastal and marine habitats, including the only extensive area of coastal sagebrush north of the Golden Gate. The Olema Valley represents a mixture of north coast grasslands interspersed with large areas of mixed evergreen forest below stands of coast redwoods in high and more sheltered areas.

Adjacent to the village of Bolinas are two habitats of outstanding value to the region: Duxbury Reef and Bolinas Lagoon. Duxbury Reef is the largest shale reef in North America, and its intertidal area abounds with marine life. Bolinas Lagoon is a unique wetland habitat of great significance to resident and migratory waterfowl and shorebirds.

A coastal strand community extends from the sandspit fronting Bolinas Lagoon to the south end of Stinson Beach, and contains large woody shrubs as well as dune grasses. Above the immediate shore areas from the area of Stinson Beach to the Golden Gate is coastal sagebrush, which grades into grassland, interrupted less frequently by redwoods and more by coastal scrub. South of Stinson Beach the shore areas are generally very rocky, and are often used by cormorants, gulls and other marine birds as nesting areas.

South of the Golden Gate, the City and County of San Francisco is, for the most part, an urban environment. Most of the vegetation was placed there by man in the last 100 years, including that in most of the Presidio and all of Golden Gate Park.

The shore areas north and east of San Francisco's Point Lobos abound with marine life, and the rocks are frequented by sea lions and sea birds. At the southern margin of San Francisco are some areas of coastal strand, with dune grasses and minor woody vegetation; in the more protected areas are patches of forest, including pine, planted hardwoods and, occasionally, coast redwoods.

A significant portion of the San Mateo County coast is devoted to coastal-dependent agriculture and grazing. The remaining terrestrial wildlife habitat of San Mateo County is predominanly a coastal sagebrush community. However, there are significant riparian communities along most of the intermittent and all the perennial streams of the county's coastal area. Dense wooded areas of mixed hardwoods and woody shrubs occupy these places of more certain water supply and less exposure to wind. The beaches are generally backed by bluffs or cliffs, and often there are rocky intertidal areas of critical habitat value to marine life. Extending south from Montara Lighthouse to beyond Pillar Point is a large reef which supports a great variety of marine organisms. Inside Pillar Point Harbor is another, different type of habitat — a small wetland area of importance to many birds and the life cycles of many marine organisms.

There are mouths of several streams that have very small coastal marshes behind the beach, but the only major estuary and wetland habitat is at Pescadero Creek. At the southern extremity of the region is the Point Ano Nuevo State Reserve, whose rocky

shores provide habitat for sea lions, seals, sea birds and intertidal and subtidal marine life. To the immediate north of this is an extensive dune formation having a unique coastal strand community of wildflowers, dune grasses and woody shrubs; to the east and south, coastal pine forest extends almost to the shore.

Hazards to Public Safety

Introduction

Seismic, landslide, cliff retreat and tsunami hazards, as well as steepness of slope, serve to impose limitations on coastal development. Areas where significant impact upon development from one or more of these hazards is likely are considered to have severe hazards to public safety. However, it is only by careful investigation of specific areas and sites that the location, extent and intensity of such hazards may be identified precisely. Thus, because of the scale involved, "severe public safety hazards" indicated on the Open Space Values and Constraints map in Chapter III should be considered only as a schematic regional representation and an "alert" to such conditions. Due to limitations of existing data, there also may be small areas of severe hazard within an area shown as not having such limitations, and conversely some areas included may be safe.

Earth Stability

The region's coastal area is in a dynamic geologic setting. It is a part of the Coast Range, a series of low mountains and intervening valleys, roughly parallel to the coast. While mountains here are often rising, they are being eroded and carried by streams to fill the valleys – which themselves are often sinking. While some faults are creeping slowly, the San Andreas Fault may be building toward another in a continuing series of earthquakes. Rugged mountains slope abruptly to the sea, small alluvial plains fill the bottoms of many stream valleys and structural sags, and ancient marine terraces are found many tens of feet above the present sea level. All of these features provide substantial evidence of the slow but continual geologic forces and erosional processes that are still shaping this region's coastal area today. These, in combination with coastal climatic conditions, have produced the variety of soil and foundation conditions that can often be uniquely productive, yet severely hazardous to public safety.

One of the unifying physical features of the region's coastal area is the San Andreas Fault and its related fault systems – widely known for the earthquakes experienced throughout its length. It roughly parallels the coast, and traverses the shoreline in each of the counties except San Francisco. Faulting itself directly affects only a narrow band of ground, but the secondary effects of earthquakes, such as landslides and amplified ground motion in alluvial deposits, are often more damaging than a surface rupture. Damage from either direct shock, fault movement or seismic response of susceptible earth materials is thus an ever-present danger to development of the coastal area.

Waves can have pronounced erosional effects as they dissipate their energy against the beaches and sea cliffs of the coastal area. The geologic formations which are exposed

along the shore vary from highly stable to highly erodible. Beach sands come principally from streams which discharge sediments eroded from inland hillsides and mountains. The oblique angle of wave incidence on the shore creates a low-velocity longshore current – the littoral drift – which transports beach materials slowly along the shore within the zone of wave turbulence. Beaches are thus in continual motion, and may be visualized as a "river of sand" transported along the shore. Damming of streams and rivers interrupts the replacement of beach sands, while structures placed in the longshore current can interfere with the littoral drift and cause accretion "upstream" and severe erosion "downstream." Any significant interference with the system removes the protective barrier of beach sands from the base of the sea cliffs – many of which are highly erodible – baring them to the full erosional forces of the sea, and accelerating the erosional process.

Flood Hazard

In addition to the threat to the several flood plains from storm water flooding, all lowlying areas of the region's coastal area are subject to tsunami, or seismic sea wave, hazard. Tsunamis, often incorrectly called tidal waves since they are not related to tidal action, are long-period waves, usually caused by underwater landslides, earthquakes or volcanic eruptions. While they are only one or two feet high in the open sea, they may increase to tens of feet as they approach the shore, and cause inundation and damage to low lying coastal areas.

III. REGIONAL COASTAL OBJECTIVES AND POLICIES

INTRODUCTION

The Ocean Coastline Plan seeks to satisfy the following major coastal goal:

To promote the conservation of the natural resources of the coastal area, especially those which are rare or unique to the coastal environment, while encouraging utilization of coastal lands and waters to benefit present and future populations.

The regional coastal policies are intended to influence decision-makers in actions which may have an effect on the coastal area. Major policies deal with environmental quality, public enjoyment, open space, conservation and development. Following these is a description of the locational implications of the regional coastal policies. These include recommendations to ensure appropriate uses of the various coastal resources.

OBJECTIVES AND POLICIES

Environmental Quality

Objective: Assure high quality of air, water, land and amenity resources throughout the coastal area.

Most any activity or development may have, at the same time, both positive and negative effects on the quality of the environment. Hence, it is essential that significant environmental impacts be considered in planning and development processes. No use of any coastal resource should be allowed to diminish the quality of the coastal environment. No major alteration of the coastal landscape should be allowed. Thus, location of land uses and population settlement and density patterns must be carefully considered.

Policies

1. Enforcement of high standards for the emission of air pollutants shall be promoted to ensure air quality and prevent its deterioration.

2. Where local climatic and topographic factors are conducive to airshed pollutant concentration, the location and arrangement of land uses and population density, and establishment of emission performance criteria shall reflect such conditions to the maximum extent possible.

3. Solid and liquid waste discharge and disposal shall be regulated to the extent that contamination of water resources and damage to the aquatic environment is minimal.

4. Use and discharge of chemical agents, particularly including pesticides and heavy metals, which concentrate in the food chain and interrupt or destroy the primary biological network or threaten specie survival shall be prohibited or rigorously controlled.

5. Interbasin transfers of water resources which will result in significant adverse impact on water regimen stability and water quality shall be discouraged.

6. Development shall be regulated with the intent that productive coastal marine and wildlife habitats, such as marshes, mudflats, lagoons, estuaries, lakes, bays, riparian habitats and anadromous fish waterways, shall not be degraded.

7. The configuration of the coastal landforms shall, to the maximum extent practicable, be maintained to preserve hydrologic and scenic values. Use of coastal resources shall not be allowed which requires significant alteration of the coastal landscape or seascape.

8. Development in the immediate vicinity of the shoreline, both on land and offshore, and in rural and wilderness areas shall be located, sited and designed to carefully fit the land and water so that its presence is subordinated and the pre-existing character of the coastal area is maintained to the maximum extent practicable.

9. Public views from major travel corridors to both the shoreline and adjoining upland areas should be protected and enhanced, and development shall not be allowed to significantly obscure, detract from or negatively affect the quality of these views.

Public Enjoyment

Objective: Maximize opportunity for human enjoyment of the coastal area by provision of appropriate forms of public and private transportation, shoreline access, and a coastal trail system.

Policies

1. An attractive public transportation alternative to the private automobile should be devised for early implementation.

2. Supplementary public recreational access via public transit should be provided for all significant increases in recreational facilities.

3. A suitable trail network should be devised for use by a broad range of users, providing for use of existing trail systems, continuity, ease of access, safety from hazards, sound relationships to existing and proposed natural resource conservation areas, protection of privacy and opportunity for educational values.

4. Frequent and easy public access should be provided laterally from major travel corridors to the ocean shoreline.

Open Space

Objective: Retain and enhance the dominant open space character of the coastal area through maintenance in permanent open space of large and contiguous land and water areas.

The major public benefits of the coastal area are derived from its open character and the variety of corresponding amenities. An open space use – an area generally free from structural development – may serve one or many purposes. For instance, it may serve as a wildlife habitat, a resource to assure continued water supply, space for agricultural and recreational activities, a form and identity - giving feature for urban places, and may provide recreational diversion and aesthetic experiences. Open space also improves the level of public health by enhancing one of the region's most important attributes: environmental diversity. Thus, it is essential to retain coastal areas of regional open space value and areas containing severe hazards to public safety in appropriate open space uses.

Policies

1. The coastal area should remain predominantly in large and contiguous open space areas.

2. The overall pattern of the open space system shall reflect the integration of various open space uses and seek to promote a recognizable continuity among those uses.

3. Coastal areas containing fragile, unique, rare, or endangered ecological, scientific and educational values shall be preserved.

4. To ensure continuance of public water resources, woodland watersheds, water recharge areas, areas whose development would not allow water regimen stabilization through conservation means, and other areas having a direct bearing on the quality of water resources, shall be maintained in open space uses.

5. Areas of high maricultural value shall be maintained in open space uses.

6. High value agriculture areas, including lands that may be utilized for the growing of coastal speciality crops, areas of established agricultural production and areas having soils of good agricultural capability, maritime climatic influences and of sufficient size to be farmed, shall be retained in agricultural use.

7. Lands with potential for grazing use shall be actively encouraged to remain in open space uses.

8. Land and water recreational resources of the coastal area shall be evaluated to determine their most appropriate use, acquired for public use and managed effectively to prevent their degradation.

9. Open space shall be used to protect and enhance local community character and identity and to guide the physical shape and direction of development.

10. Important public views, unique natural features, landmarks, archeological and historic sites and other scenic and cultural assets of the coastal area shall be retained in open space uses.

11. Public access to areas of high coastal amenity shall be secured through regulation or acquisition, as appropriate.

12. Coastal areas subject to severe environmental hazards, especially flood-prone and landslide - prone areas, high seismic risk areas, steep slopes or areas subject to cliff erosion or tsunami inundation, are not appropriate for development and shall be maintained in open space uses.

13. Areas whose development would pose a severe hazard to persons or property outside the proposed development are not appropriate for development, and shall be maintained in open space uses.

Conservation

Objective: Conserve water, land, energy, plant nutrients and living resources.

Conservation policies serve to identify resources critical to the coastal environment, and suggest practices essential to their maintenance. Limited coastal resources must be conserved and protected to the maximum extent possible, so that the region may continue to realize their substantial interrelated economic, social and environmental benefits. This implies the need for plan-based management to prevent exploitation, neglect or elimination.

Policies

1. Stability of the aquatic environment shall be sought through promotion of careful management of vegetative cover, surface water runoff patterns, ground water recharge and erosion and sedimentation processes.

2. Water resources conservation shall be promoted through regulation, allocation and encouragement for reuse.

3. Withdrawals from ground water basins shall be regulated so as to maintain a continuing supply.

4. The discharge of organic wastes and plant nutrients shall be regulated to avoid harm to the aquatic environment.

5. Region-wide efforts to minimize energy consumption shall be encouraged to conserve energy resources and reduce the impact of energy utilization on coastal air, land, water and living resources.

6. Watersheds whose streams are used for fish spawning grounds and nurseries shall be managed to maintain the flow of fresh water necessary to their maintenance for these purposes.

7. Opportunities and practices for resource renewal and reuse of coastal resources shall be actively encouraged.

Development

Objective: Accommodate limited development in the coastal area within the capacity of natural resources to sustain compatible use.

A major concern is the impact generated or fostered by development. Open space values should not be diminished simply because they happen to occur in or near a developing area. Development must be compatible with the coastal environment and must be directed to appropriate existing or potential settlement areas. Some areas in which development may be allowed should be reserved for activities that both require a coastal site and maximize benefits arising from such a location. All users of coastal resources should respect the coastal setting and conserve its scarce resources, whether they build, farm, cut, fish, extract or merely walk through the coastal area. A strong coastal relationship must be shown in the actual design and siting of developments in the coastal area.

Policies

1. The maximum practicable compatible multiple use of coastal resources shall be sought to promote conservation of resources and increase habitat values, public safety, recreational opportunities, scenic amenities and public enjoyment of the coastal environment.

2. Misuse, excessive intensity of use, waste and degradation resulting from utilization of a coastal resource shall be discouraged.

3. Urban development shall be prohibited from areas with major regional coastal open space resource values.

4. Urban uses should strengthen the desired pattern of regional development and shall be directed to appropriate existing settlement areas.

5. In areas to which urban uses are directed, locations having significant coastal amenity shall be reserved for activities or facilities that both require such amenities and maximize public benefits.

6. The location and timing of public and quasi-public expenditures in utilities, facilities and services shall be consistent with regional coastal policy.

7. Development within the coastal area shall be regulated with the intent to minimize public expenditures in facilities and services, to maintain maximum flexibility for future decisions and to minimize conversion of coastal area lands and waters from open space to intensive development uses.

LOCATIONAL IMPLICATIONS: CONSERVATION/DEVELOPMENT AREAS

An analysis of coastal resources has led to the derivation of three categories of coastal use suitability—the Conservation/Development Policy designations. At a regional scale, these are the specific locational implications of the regional coastal policies, which recommend that:

The coastal area should remain predominantly in large and contiguous open space use areas.

Areas possessing open space resources of significant regional value should be reserved for compatible open space uses.

Intensive coastal development should be directed to areas best able to accommodate such activities.

Based upon the premises of the regional coastal policies– that coastal open space values must be retained, and that only development which recognizes, and is compatible with, such values should be permitted--and upon the recommendations of the policies themselves, the following conservation/development areas are derived.

Natural Resource Conservation areas, which have open space resource values of regional significance, and which should be reserved for compatible open space uses.

Open Use - Limited Development areas, which should remain predominantly in open space, but within which limited development which conforms to the regional coastal policies may occur.

Community Growth areas, to which relatively intensive coastal use and development should be directed.

The boundaries of areas designated on the Conservation/Development Policy map are accurate only within the constraints of data availability and accuracy and the mapping scale. As more precise information becomes available, their general extent may be altered in the same manner provided for revision of the Regional Plan, while precise area boundaries may be determined by comparing environmental information with the definitions of the various areas below.

Local plans are an appropriate vehicle for the establishment of precise boundaries and other refinements of these policy implications. Where local governments prepare and adopt plans which conform to the intent of the regional coastal policies and their implications, such plans will amplify and detail this plan.

Community Growth

Community growth areas include both the presently-developed portions and immediate environs of permanent population settlement areas, of whatever size, as indicated on the Conservation/Development Policy map. These: 1) have an identifiable, balanced and continuing community character; 2) include a center which provides services for a larger surrounding area; 3) have adequate levels of accessibility and public services or those which may readily be expanded; 4) if fully developed, could contain controlled growth compatible with other regional and local growth policies; 5) do not conflict significantly with identified regional open space resource values or severe hazards in other than presently - developed areas; and 6) are areas to which coastal development should be directed, in lieu of other portions of the coastal area.

This designation does not imply that open space values within these areas must be ignored. Any development permitted within a community growth area must complement, and not consume, those resources. Decisions regarding urbanization or deve-

lopment of any area must also reflect numerous other factors, including the presence of hazards to public safety, potential for other, more appropriate uses, timing and compatibility of development and public services, city and county plans, local recreation values, social implication and a host of additional considerations that must accompany any development decision.

In the immediate shoreline portion of a community growth area, only those land or water uses included within a proposed development are appropriate which: 1) clearly demonstrate either substantial coastal economic dependency upon the location proposed or significant public benefit; and 2) are without reasonable alternative sites outside the immediate shoreline area.

Outside the immediate shoreline portion of a community growth area, only those land or water uses included within a proposed development which are typically coastal-related or oriented to the specific local community are appropriate.

Open Use - Limited Development

Open use-limited development areas are devoid of identified regional open space resources and include areas of dispersed and limited development as well as areas which are predominantly vacant or in various open space uses. Intensive development or in-filling of these areas would generate inappropriate development pressures or require major expansion of highways or public services. These areas should continue to have a predominantly open character, although limited development which respects coastal character, resources and hazards, and either exhibits coastal dependency or provides a significant public benefit, may be permitted.

Areas generally threatened with severe hazards to public safety are known to occur in open use-limited development areas. These are areas where significant problems of slope and slope stability, response of earth materials to seismic disturbance, or flood or seismic sea wave hazard are anticipated and where public harm may be prevented through use of appropriate limitations on structural development.

In the immediate shoreline portion of an open use - limited development area, only those land or water uses included within a proposed development are appropriate which: 1) clearly demonstrate either substantial economic dependency upon the location proposed or significant public benefit through maintenance of agricultural, grazing, pasture or open recreation uses only; 2) are without reasonable alternative sites outside the immediate shoreline area; and 3) are compatible with both open space resource retention and the severe hazards to public safety often associated with these areas.

Outside the immediate shoreline of an open use - limited development area, only those land or water uses included within a proposed development are appropriate which: 1) clearly demonstrate either substantial economic dependency upon the location proposed or significant public benefit; and 2) are compatible with both open space resource retention and the severe hazards to public safety often associated with these areas.

Natural Resource Conservation

Natural resource conservation designations include all areas having identified regional open space values, specifically: 1) marine and coastal wildlife habitats; 2) agricultural resources; and 3) public recreational resources. Those are areas appropriate for open space uses only which will provide for retention of identified regional open space resource values.

Areas generally threatened with severe hazards to public safety are known to occur in natural resource conservation areas. These are areas where significant problems of slope and slope stability, response of earth materials to seismic disturbance or flood or seismic sea wave hazard are anticipated, and where public harm may be prevented through use of appropriate limitations on structural development.

In the immediate shoreline portion of a natural resource conservation area, only those land or water uses included within a proposed development are appropriate which: 1) clearly demonstrate both substantial economic dependency upon the location proposed and significant public benefit; 2) are without reasonable alternative sites outside both the immediate shoreline area and the natural resource conservation area; 3) are compatible with the severe hazards to public safety often associated with these areas; and 4) will provide for retention of identified regional open space resources.

Outside the immediate shoreline portion of a natural resource conservation area, only those land or water uses included within a proposed development are appropriate which: 1) clearly demonstrate both substantial economic dependency upon the location proposed and significant public benefit; 2) are without reasonable alternative sites outside the natural resource conservation area; 3) are compatible with the severe hazards associated with these areas; and 4) will provide for the retention of identified regional open space resources.

Determinants

Economic Dependency

"Economic dependency" is an expression of the functional dependency of a use or activity on coastal area resources. Some uses are so economically dependent on the water, climate, geology, marine life, etc., of the coastal area that they can not reasonably locate elsewhere. Therefore, it is important to ensure that such uses receive priority in the competition for scarce coastal lands and waters, and further, that coastal areas be reserved and maintained for such dependent uses.

Economic dependency can be evidenced in one of two ways. The first avenue is to demonstrate the absence of necessary resources at any inland location. The second method would be to show that in order to replicate the necessary resource at an inland location, the cost incurred would be more than twice the investment of a coastal location.

This second method recognizes a useful index of economic dependency to be "opportunity cost" – in this instance the relation between the construction and operation of a land or water use and the coastal resources which it utilizes. Opportunity cost is the

sum of: 1) the extra investment needed to create the particular resources essential to the land or water use outside the coastal area; and 2) the extra operating costs associated with a non-coastal area location, such as transportation differentials or operation of equipment. Using this method, a use is considered dependent on the resources of the coastal area if exclusion from the area would at least double its opportunity costs. Differences in land costs or rents may not be included in opportunity cost calculations. It must be clearly demonstrated that costs on a non-coastal area site would be significantly in excess (greater than 200%) of those on a coastal area site, assuming equal land costs or rents in both coastal and non-coastal area locations.

Local supply and demand conditions and changing technological problems of particular users dictate that proposed uses not be firmly classified in advance as to degree of dependency, but that each application be considered on its own merits.

Examples of uses which, at the current level of technology, evidence significant economic dependency on the coastal area are mariculture and marine fisheries, marine and coastal-oriented public and commercial recreation, artichoke production, and deep water ports. These rely on a coastal resource which cannot be found outside the coastal area or which cannot be replicated at less than twice the coastal investment. For example, since marine fisheries cannot exist without the sea, their opportunity cost is infinite. While ports can be located inland, the extra investment and operating costs of creating and maintaining a channel are enormous, easily double the costs of developing a port on existing deep water. It is very doubtful today whether construction and maintenance of a ship canal of the size and length serving Stockton and Sacramento could ever be economically viable if the real costs of amortization and maintenance were charged to users as a toll. Marine recreation also may be considered a dependent use if it is assumed that marine recreational opportunities cannot be substituted by other types of recreation such as mountain or desert. Finally, artichoke production also falls into this category since, if grown inland, air conditioned greenhouses would be necessary, requiring an investment of perhaps 50 times that necessary in the coastal area.

Public Benefit

Public benefit is considered to occur when a proposed land or water use, activity, or facility will result in direct and substantial general public use or foster substantial public betterment in the form of permanent retention of large and contiguous open space areas.

Substantial public benefit may be demonstrated by either of the following:

1. Development which maintains open space as the principal and visually predominant use, namely:

a. Agricultural and grazing and pasture uses; or

b. Public and commercial recreation uses in which landscape alteration occurs on less than 2% of the gross land area having less than 40% slope.

2. Development whose primary intent is not open space, but whose siting is such that open space preservation is an important permanent result, and which:

a. Provides for preservation of significant coastal resource areas in permanent and publicly-accessible open space in conformance with the environmental impact concerns expressed in the regional coastal policies. Such resources include dominant landforms and landmarks, beaches and important marine and aquatic areas, such as marshes, mudflats, lagoons, estuaries, lakes and bays; and

b. Provides the following:
– for development of existing parcels of less than 10 acres: not more than 1% coverage (landscape alteration) of the gross parcel area of less than 40% slope, or 2,500 square feet, whichever is greater;

– for development of existing parcels of 10 acres or more but less than 50 acres: not more than 3% coverage (landscape alteration) of the gross parcel area of less than 40% slope, and at least 20% of the development devoted to tourist - oriented, recreational or transient accommodations and facilities;

– for development of existing parcels of at least 50 acres but less than 200 acres: not more than 7% coverage (landscape alteration) of the gross parcel area of less than 40% slope and at least 40% of the development devoted to tourist - oriented, recreational, or transient accommodations and facilities.

– for development of existing parcels of at least 200 acres: not more than 10% coverage (landscape alteration) of the gross parcel area of less than 40% slope, and at least 60% of the development devoted to tourist-oriented, recreational, or transient accommodations and facilities.

These maximum coverage requirements may be altered due to major site or locational constraints if determined to be in the public interest. Public facilities or utilities whose construction is consistent with an enunciated public policy and which meets an overriding public need shall be exempt from the requirements to provide tourist-oriented, recreational, or transient accommodations and facilities. In such instances, the maximum coverage requirements may be relaxed to twice the amounts specified only when such coverage is essential to meet the public need.

Immediate Shoreline

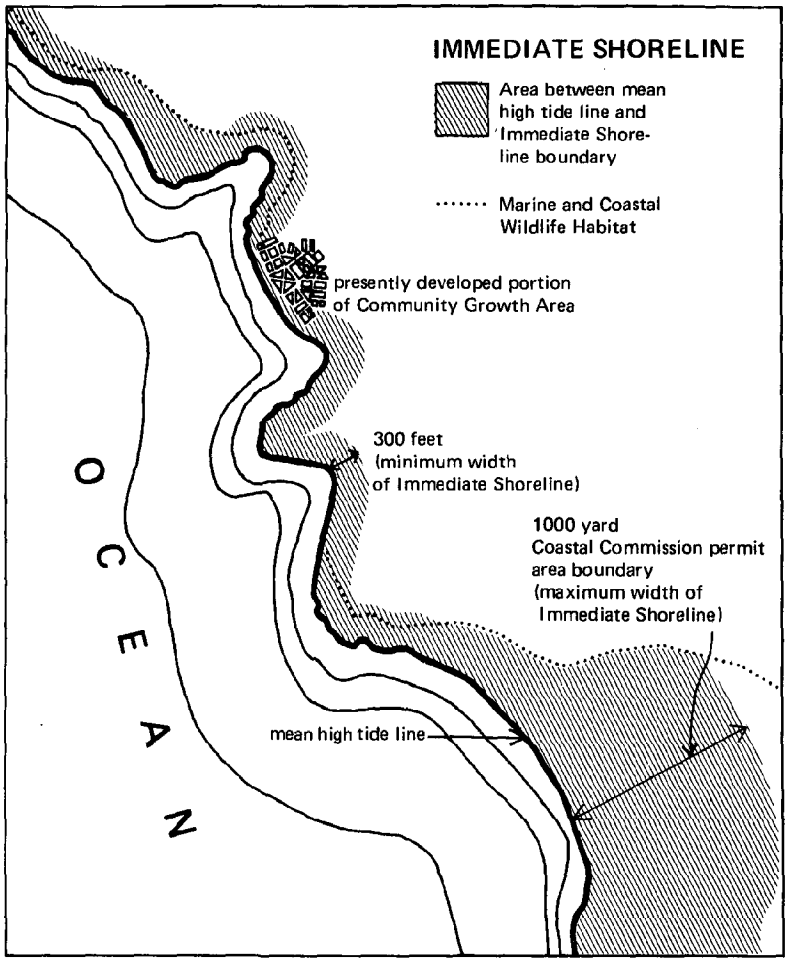
While it would be simplest to establish an arbitrary distance inland as the boundary of the immediate shoreline, such an action would fail to respond to the existing character of the natural and man-made coastal environment. In response to this environment, the immediate shoreline is defined as:

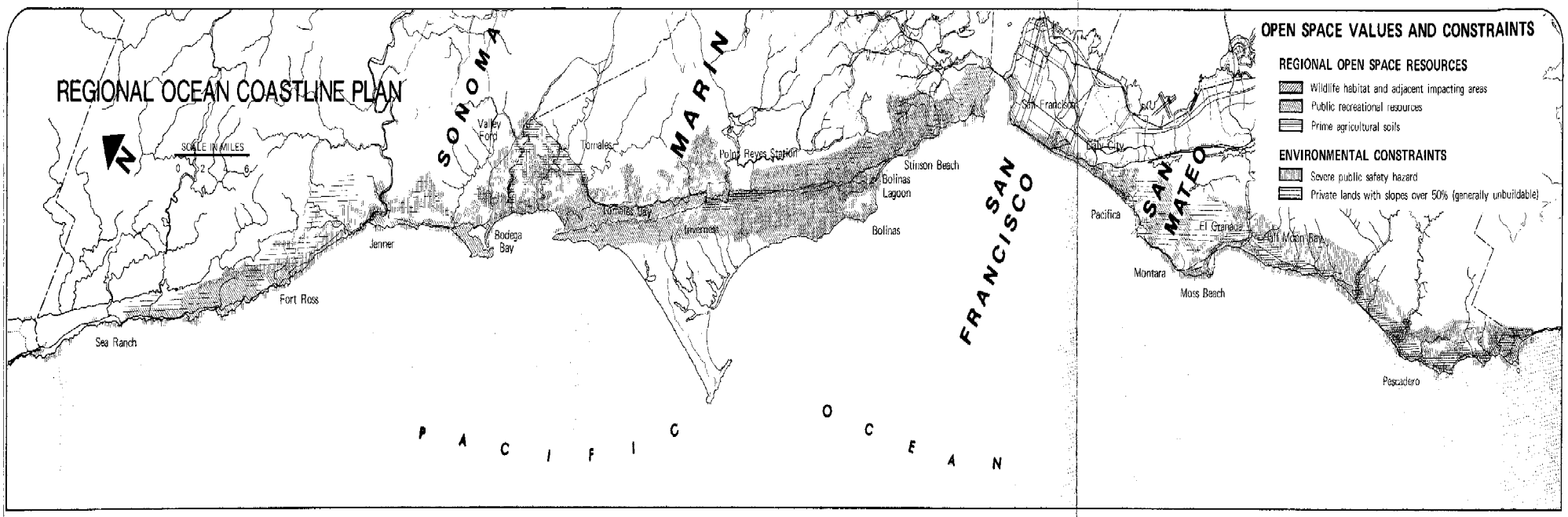
All lands and waters extending inland at least 300 feet from the mean high tide line or to the landward extent of marine and coastal wildlife habitat and/or natural areas to a maximum of the 1,000-yard permit area boundary established by the California Coastal Conservation Act of 1972.

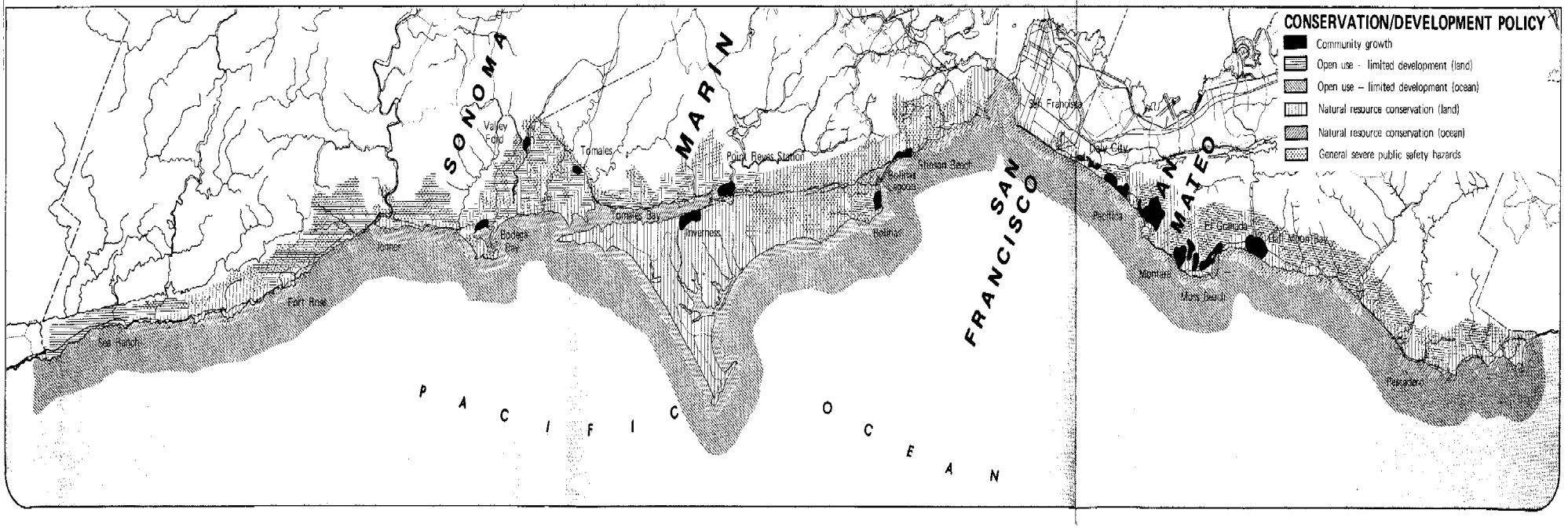
In community growth areas only, the edge of a series of existing permanent buildings is considered the boundary of the immediate shoreline, if within the area as defined above. This type of boundary may not be considered to exist in the case of buildings which are relatively isolated from the presently-developed portion of a community growth area.

For purposes of determining the immediate shoreline, "marine and coastal wildlife habitat and/or natural areas" shall include, but not be limited to, beaches, sand dunes, spits and baymouth bars, mudflats, marshes, estuaries, lagoons, bays, rocky intertidal areas, shellfish culture areas, riparian habitats, anadromous fish waterways and lakes.

IMMEDIATE SHORELINE




REGIONAL OCEAN COASTLINE PLAN
SCALE IN MILES
SONOMA
MARIN
SAN FRANCISCO
SAN MATEO
Valley Ford
Tomales
Point Reyes Station
Stinson Beach
Bolinas Lagoon
Tomales Bay
Inverness
Bolinas
Bodega Bay
Jenner
Fort Ross
Sea Ranch
San Francisco
Daly City
Pacifica
El Granada
Half Moon Bay
Montara
Moss Beach
Pescadero
P A C I F I C O C E A N
OPEN SPACE VALUES AND CONSTRAINTS
REGIONAL OPEN SPACE RESOURCES
Wildlife habitat and adjacent impacting areas
Public recreational resources
Prime agricultural soils
ENVIRONMENTAL CONSTRAINTS
Severe public safety hazard
Private lands with slopes over 50% (generally unbuildable)


SONOMA
MARIN
SAN FRANCISCO
SAN MATEO
Valley Ford
Tomales
Point Reyes Station
Stinson Beach
Bolinas Lagoon
Tomales Bay
Inverness
Bolinas
Bodega Bay
Jenner
Fort Ross
Sea Ranch
San Francisco
Daly City
Pacifica
El Granada
Half Moon Bay
Montara
Moss Beach
Pescadero
P A C I F I C O C E A N
CONSERVATION/DEVELOPMENT POLICY
Community growth
Open use - limited development (land)
Open use – limited development (ocean)
Natural resource conservation (land)
Natural resource conservation (ocean)
General severe public safety hazards

IV. SUPPORTING STRATEGIES

INTRODUCTION

The conservation/development area designations in Chapter III bear some resemblance to traditional regional land use plan categories. Yet, experience has shown that such designations in themselves are not sufficient to assure implementation. Thus, the conservation/development polices, whose basic objective is to assure that growth and development shall be compatible with the open space resources of regional significance, require support of several types.

This chapter contains a set of supporting strategies by which the plan's objectives may be implemented. They are proposed as guidelines to public actions which can have important effects on the location of development pressures, public use and the regulation of growth and development in the coastal area.

These strategies are grouped into three areas of concern:

1. Directing coastal development to community growth areas, and away from areas of high open space value or significant hazard, through control of location, capacity and timing of major public service facilities, such as public water supply treatment and distribution facilities, roadways and sanitary sewage collection and treatment facilities.

2. Acquisition of open space areas for trails and other public uses and to protect regional open space resources from incompatible development; and

3. Regulation of land use, land alteration and development.

These strategies are consolidated into an overall and mutually supportive approach to assist in implementation of this plan. For example, one of the purposes of controlling extension or expansion of roads, sewer services and water supply facilities outside community growth areas is to maintain relatively low property taxes. This helps reduce pressures for conversion of open space uses to intensive development, thereby allowing open space uses and activities to continue economically. Areas whose use is proposed for change would be subject to regulation to assure compatibility with the coastal environment, while regional open space resources which do not lend themselves to adequate regulatory control are proposed for public acquisition. Full use and coordination of all three strategies is essential to realization of the plan.

PUBLIC SERVICES

General strategies regarding appropriate location and maximum service levels of transportation, water supply and sewer service should be used to influence land use decisions commensurate with established open space and development policy. The public service strategies are divided into two parts – coastal accessibility, and sewer and water service. Each is intended for use in review of facilities and services improvement proposals, as well as specific planning of future coastal development.

Accessibility Strategy

The primary objective of the accessibility strategy is to direct relatively intensive uses to community growth areas, and promote maximum opportunities for human enjoyment of the coastal area through appropriate forms of public and private transportation, shoreline access and a coastal trail system in a manner compatible with conservation/development policies and area designations.

1. An attractive public recreational transportation alternative to the private automobile should be devised for early implementation. Supplementary public recreational access via public transportation should be provided for all significant increases in recreational activities. In the long-term future, pressure on the coastal roadway network from recreational day-users is likely to be considerably more severe than pressure generated from residential development. Response to this demand requires detailed transportation planning that de-emphasizes dependence on private vehicles, whether they be automobiles or campers. Because of increased leisure time and alterations in the traditional patterns of recreational travel, it is likely that the traditionally-projected peak hour demands normally associated with average daily traffic cannot be reliably used in the planning of roadway systems designed principally for the recreation traveler. Recreation resources, whether they be public or private in nature, should emphasize the use of mass transit feeder systems to transport users from areas outside the coastal recreation system, such as from depots in urban areas, to the recreational facilities. The transportation system itself should be designed to serve both day and overnight recreation users. In addition, access within recreation areas should be planned to combine and coordinate use of mini-buses, bicycle lanes and hiking and riding trails into a system which would preempt use of private vehicles within the recreational areas.

2. Major upgradings which would significantly increase the vehicular capacity of the coastal roadway network may be permitted only within the Greater San Francisco County urbanized area and environs. It is strongly recommended that the vehicular capacity of the present coastal highway network be maintained outside the urbanized center of the region's coastal area (from the Golden Gate to the southerly city limit of Pacifica). The purpose for this recommendation is two-fold. Initially, several points of constriction along the coastal longitudinal roadway system act to limit the level of service. These are also deterrents to any major future increased use of the road system. Second, most of these critical points—regardless of their current constricting effect on level of service—can nonetheless handle a greater number of vehicles per hour than they now accommodate, albeit under more crowded conditions—a reduced level of service. These two "attributes" of the current system significantly affect the total use and rate of development within the coastal area in a manner that complements regional coastal policies. Whatever additional service capacity might be required should be achieved through use of public transit, rather than through alterations to the present highway system itself. It is not the intent that necessary modifications of roads which are unsafe be prohibited, provided that no significant increase in roadway capacity results.

3. Proposals for development outside community growth areas should also include provisions for a) a local-serving commercial facility to provide food and convenience items, and b) a circulation pattern integrated into the site design that minimizes dependence on automobiles within the development itself. A double purpose is served by this strategy. First, it attempts to reduce the need for automobile trips outside such developments, and therefore minimizes traffic on the coastal highway. Second, it attempts to reduce use of the automobile inside such developments by encouraging use of paths and trails which could provide access to the recreational amenities of the area, once more minimizing the requirement for automobile use. Both of these elements are considered to be crucial in the design of all coastal development. A restraint must be imposed, however, so that the local commercial facility is not so specialized nor of such a size that it either acts a generator of traffic from areas outside the development or requires a population not present within the development for its economic maintenance. Finally, it is recommended that when feasible, recreational trails and paths should be continuous through both public and private coastal lands to provide greater recreational opportunity for the private landowner as well as providing an access to commercial services that could serve the recreational day-user.

4. Frequent and easy public access should be provided laterally from major travel corridors to the ocean shoreline; a regional coastal trail network should be constructed for use by a broad range of users. The network should make maximum use of existing trail systems, and provide for continuity, ease of access, safety from hazards, sound relationships to existing and proposed natural resource conservation areas, protection of privacy and use of educational opportunities.

Accessibility Implications: Coastal Roadway Network

Several significant areas merit individual consideration to relate them to the four major accessibility policies. These areas are examined from north to south.

Sonoma County is proceeding with plans for upgrading the existing county road from its intersection with Highway 1 north of Russian Gulch to just south of Stewarts Point. While this will alleviate pressures on Highway 1 north of Russion Gulch, demands are certain to arise for the upgrading of that highway between its intersection with Highway 116 south of Jenner and the improved county road. Most of this section is steep, tortuous and narrow, and passes through an area of very high visual value. The massive reconstruction necessary to increase road capacity through this section of Highway 1 would be a major assault upon the environment of the coastal area, and especially that of the county park at Russian Gulch.

In the past, a realignment of Highway 1 from Keyes Creek in Marin County to Bodega Bay in Sonoma County has been proposed. An additional highway crossing of this area is not warranted, because the area is now accessible by other roads. Further, road improvements would cross an area with both severe hazards to public safety and regional open space resources. Massive slope stabilization for the many deep cuts and fills would be required, as well as two high bridges to cross two of the most important estuarine habitats in the region—Estero Americano and Estero de San Antonio. Any

development adjacent to these wetland habitats, which have received Statewide attention, would inevitably result in adverse impacts to these fragile areas.

It is proposed that accessibility to Point Reyes National Seashore be primarily by public transportation, thereby reducing the relative dependency on private automobiles for visiting this area. In this area particularly, there are several reasons why public transit is necessary. First, unless strict lateral access control is maintained both along a highway route and at its terminus, pressures for development and land values in the entire area served would greatly increase, in conflict with this plan and the Marin Countywide Plan. Improvements to State Highways 17 and 37, therefore, would not appear to be the proper method for achieving desired increases in accessibility to the National Seashore. Second, even with access control strictly maintained along the route, there would remain the problem of large numbers of private automobiles in or adjacent to the National Seashore, either on roads or in parking areas, and the provisions necessary to accommodate them as their numbers increased.

Major improvements to increase the capacity of Highway 1 through Olema Valley is inappropriate in view of the plan to include this area in the Golden Gate National Recreation Area. Olema Valley's considerable regional open space value and its severe hazards suggest that it be maintained in permanent open space.

It would seem doubtful that such road improvements could be approved, or even realistically proposed, without first significantly increasing the capacity of Highway 1 or Panoramic Highway which link the urbanized portions of Marin County to Stinson Beach, Bolinas and Olema Valley. However, any increase in road capacity in these areas could only be achieved at high cost — both environmental and economic.

Increases in accessibility within the coastal area of the Greater San Francisco County urbanized area and environs are, in general, considered to be compatible with the intent of this plan. However, several areas between the Golden Gate and the southerly city limits of Pacifica, due to location or the presence of open space resources of regional significance, warrant additional discussion.

Widening and straightening certain roads in the Presidio of San Francisco would result in damage to the landscape and encouragement of higher speeds by regular users of the roads. Speeding already is a problem in parts of the Presidio; the addition of faster traffic would conflict with recreational use of this area foreseen in creation of the Golden Gate National Recreation Area.

Many roadways within the Presidio are not in full use due to locked gates. While it is recognized that security is a consideration in some areas and that motor vehicle access would not be appropriate in others, selected routes should be opened to allow additional walking and bicycle riding in the Presidio. In this way, further public enjoyment of this important publicly - owned regional open space resource would be enhanced.

The City of San Francisco has proposed to realign and otherwise improve the Great Highway which lies atop the embankment that separates residential areas from the beach.

The Great Highway presently has four lanes divided by a median, allows pedestrian crossing only by three long underpasses which do not adequately serve the needs of local residents, and has continuing problems of excessive speed by motorists. The new road would consist of four lanes, with gentle curves to encourage reduced vehicle speeds. Also included would be parking bays within the curves on the ocean side of the roadway, and local parks and tot-lots below road grade on the residential side. The present pedestrian undercrossings would be reduced in length and increased in number, and traffic control and vehicle access would be increased by placement of a signalized intersection near the center of the improvement. This proposal is in conformance with the plan, because it would further local and regional public use and enjoyment of this beach resource and would enhance the visual amenity of the shoreline in the most heavily- urbanized portion of the region's coastal area.

Pacifica is connected to the rest of the urbanized area by State Highway 1 along the coast from San Francisco, and Sharp Park Road from the bayside of San Mateo County. Improvement or augmentation of all or parts of these routes, as necessary to provide additional safety and convenience to Pacifica's service and commuting needs, is consistent with this plan. Any improvements of these routes should be designed so that they provide no significant increase in commuter accessibility to the mid-coastside of San Mateo County, in accord with the accessibility and conservation/development policies for that area. Design should also be consistent with the Development Review Criteria with regard to minimization of environmental impact on the coastal area, and especially outside the Pacifica community growth area.

In the mid-coastside of San Mateo County, there are several relatively small communities which are dependent upon low commuting times to San Francisco and the bayside for their present high land values and residential growth rates. If highway accessibility is significantly increased, even greater pressures for development will surface, land values will continue to increase, private open space uses will be taxed out of existence, speculators holding large parcels of mid-coastside lands will reap a windfall return and the local residents, county and region will face irretrievable loss of one of their most important open space assets.

The mid-coastside is accessible to regional population concentrations via coastal State Highway 1 from the north, and State Highway 92 from the east. Highway 92 is the major access route for residents of the southern portion of the region to coastal recreational resources. It serves as well as the principal service and emergency vehicle access from western to eastern portions of San Mateo County. State improvements of this major artery are currently in the planning stages.

Also presently under consideration is the relocation and improvement of the portion of Highway 1 to the north as it traverses Montara Mountain—the Devil's Slide area. The main intent here is to remove the highway and its users from dangers inherent in its present location and state. It is also important to provide for the needs of pedestrians and bicyclists. This latter consideration is very important, since this is the only route available from Pacifica to the mid-coastside.

Road improvements may be necessary to provide for increased safety and service levels to the mid-coastside community growth areas. It is recommended that the main focus of such improvements be Highway 92. This is due to the emphasis of the City of Half Moon Bay as the primary community growth area of the mid-coastside combined with the greater flexibility of access afforded by Highway 92 as a connector to regional population centers.

Highway capacity, and not precise locational considerations, are the issues of importance in relation to the development pressures in the mid-coastside. In the event that such improvements are proposed for these highways, it is recommended that several alternative designs be investigated and a design which will provide only sufficient capacity for levels of residential growth commensurate with the conservation/development policies, while emphasizing safety at the expense of speed, be adopted.

There is presently no alternative to the private automobile for recreational travel to the San Mateo County coastside. The major public attractions here are the linear beaches, backed by State Highway 1. Presently, the holding capacity of these beaches is determined more by automobile parking capacity than by ability of the beaches to withstand use. As a linear feature, these coastal recreation resources are well suited to a system of public transportation to serve recreational needs. Increases in recreational accessibility to this area should be accomplished through this means, rather than through increases in highway capacity. The system to be provided should be subsidized on a regional level, and the system should be tailored to meet the needs of recreationists, rather than those of commuters or other travelers.

South of the City of Half Moon Bay, Highway 1 should be maintained at its present capacity.

Accessibility Implications: Coastal Trail System

The regional coastal trail system, as shown on the map in this chapter, will contain shoreline, beach, coastal terrace, and upland ridge sections. Together, these provide the potential to achieve a continuous trail, since several gaps in the shoreline trail are foreseen due to difficult terrain or roadway safety considerations. Major spur trails from the main coastal trail are also indicated on the map. These provide direct lateral access to important shoreline recreation areas. Bicycle trails are shown as a set of discontinuous routes due to requirements for trail service, grade and safety. Equestrian use of hiking trails is generally assumed at this time, although after review for conformance with the environmental impact concerns expressed in the regional coastal policies, some trails may be determined to be unsuitable or inappropriate for equestrian use.

Planning and Design Criteria

Trails from the interior to the coast should make available to a large number of persons an alternative to the private automobile. The coastal trail should emphasize proximity to the shoreline whenever practicable. The routes should follow natural features, including creeks, ridgelines, and the shoreline wherever possible. Man-made linear features, such as roadway and public utility rights-of-way and easements could

also be incorporated into the trails system where appropriate. Small campgrounds may be provided along the trail, away from direct vehicular access points, to provide for camping experiences not available in more intensively used campgrounds.

Trailheads should be located to provide accessibility, ease of maintenance and minimum environmental impact. Trailheads within regional coastal parks or coastal recreation areas should be incorporated into the more developed portions of such facilities. Trailheads may include parking areas large enough to accommodate cars, horse trailers and buses, sanitary facilities, picnic areas and shelter.

Detailed planning and refinements of the trail system should be based on these considerations. Review should be made of the potential for adverse environmental impacts, especially where existing park facilities and bicycle and hiking trails converge. Resting stations along specific trail segments are not identified at this time.

Trail Network Description

Proceeding from north to south, the coastal trail system would begin at Gualala County Park at the mouth of the Gualala River, and continue along the coastal terraces to Black Point. This portion would afford one of only two major shoreline - related trails in Sonoma County. At Black Point the trail would cross to Seaview Ridge, and return to the shoreline area in the vicinity of the Russian River. At Black Point and especially at the Russian River, detailed studies are necessary to determine precise locations of the links from ridge to shore. Along the Seaview Ridge trail, four spur trails to the shore are indicated: at Stewarts Point, through Kruse Rhododendron State Reserve, Salt Point State Park and Timber Cove. A fifth spur, south of Fort Ross, should be studied further. Trailhead facilities should be at both ends of each spur trail.

Crossing of the Russian River might be made at either Bridge Haven or Duncans Mills. From the Russian River the trail would proceed south along the beaches from Arched Rock to Salmon Creek. Existing spur trails lead to Bodega Bay and continue along the bluffs overlooking the Estero Americano to the crossing at Valley Ford. The bicycle trail would continue north on Highway 1, and return to Bodega Bay along state and local roads.

From Valley Ford bicycle and hiking trails would proceed south to Dillon Beach, with several spur trails to the bluffs overlooking the ocean. The bicycle trail would continue along Highway 1 to Tomales, where it would join an old railroad grade. The hiking trail would circle the beaches and dunes along Sand Point and join the old railroad grade above Preston Point. Construction of a new trail bridge across Walker Creek would reconnect to the portion of the railroad grade and allow continuation south along Tomales Bay to Marshall.

From Marshall, both the main hiking and bicycle trails would proceed along Highway 1 to Stinson Beach. Connections would be provided to existing trails in the Point Reyes National Seashore and Samuel P. Taylor State Park, Mt. Tamalpais State Park,

and the Marin Municipal Water District watershed. From Stinson Beach the bicycle trail would continue south along Panoramic Highway, while the hiking trail proceeded parallel to Highway 1 to Muir Beach. Trailhead facilities at Muir Beach would serve hiking to the north and both bicycling and hiking to the south along the Golden Gate Headlands.

South of Golden Gate the main trailway would begin at Fort Scott in the Presidio of San Francisco, and proceed around Lands End, along Ocean Beach, through Fort Funston to Sharp Park State Beach. The trail through Pacifica would follow the planned county trail route, and proceed over Montara Mountain to El Granada. From Half Moon Bay a continuous hiking and bicycle trail would proceed along the numerous coastal beaches or bluffs above, terminating in Ano Nuevo State Reserve. Trailhead facilities to the coastal and inland trail network to connect to the complex of park and wilderness areas in the San Francisco watershed lands and Santa Cruz Mountains are proposed in Montara, El Granada, Half Moon Bay, Tunitas Beach, San Gregorio State Beach, Pomponio State Beach, Pescadero State Beach, and Bean Hollow State Beach.

Water and Sewer Service Strategy

Sewer and water service strategy is predicated on the previously-described conservation/development policies. The express purpose is to control the location and capacity of sewer and water facilities to:

1) ensure consistency with regional coastal policies which recommend appropriate locations for urban use and development;

2) minimize public expenditures in facilities and services; and

3) ensure that the use of water and its subsequent disposal do not result in adverse environmental impacts.

These strategies are intended to be detailed and implemented in conjunction with the State and Regional Water Quality Control Boards and the Bay Area Sewage Services Agency (BASSA). Under some circumstances, departures may be required for reasons unrelated to growth control. In order for these strategies to be implemented, powers of existing agencies may have to be expanded. No strategy herein should be used to place an upper limit on the quality of: water delivered by public water systems; sewage treatment; or overall service of any public utility or service district.

The following are grouped according to the three conservation/development area classifications: community growth, open use-limited development and natural resource conservation.

Community Growth

In community growth areas, extension of facilities and creation or expansion of service district boundaries are permissible. While both water and sewer service may not be currently available, the future provision of such service is consistent

with regional coastal policy. This is not, however, a recommendation that services be immediately inaugurated or extended to all portions of these areas. Rather, it is a recognition that servicing of community growth areas would not be inconsistent with regional coastal policies, once development phasing and ultimate levels of service are established.

Open Use - Limited Development

In open use - limited development areas, no major expansion of existing facilities beyond that necessary to serve existing development should be permitted. In such areas only internally supporting, self-contained facilities should be permitted. In the open use - limited development areas there is potential for development which may be inconsistent with open space policies. Service currently provided should not be expanded or extended outside of an existing area of development so as to induce or facilitate development determined to be inconsistent with regional coastal policies. Services may be inaugurated, expanded, or extended for: 1) development already initiated which assumed available services; and 2) development already completed for which such service is now required by discharge requirements of a regional water quality control board.

Natural Resource Conservation

In natural resource conservation areas, extension of water supply and sewer service facilities may be provided for recreational uses, and extension of water supply facilities may be provided for agricultural uses. These areas are characterized by an open space with agricultural, wildlife habitat or recreational value. Imported water, when expressly limited principally to irrigation purposes, may be made available to agricultural portions of these areas, while sewage disposal may be accomplished through use of septic tanks. Water supply and sewer services may be provided for recreational areas, so long as the service networks and capacities do not exceed the requirements of the recreational area itself.

Four supporting service strategies also are proposed for all areas outside the community growth areas:

1. Except for agricultural uses, no further construction for interbasin transfer of water should be permitted. Hence, the only permissible new water supply source shall be ground water or local, small-scale surface water impoundments. Dependence on local water supply is an environmentally sound approach to controlling the location of new development. Where local water is not available, new development should not occur. Use is to be limited to ground water and local, small-scale impoundments in an attempt both to maintain the quality of the watersheds and ground water basins and to utilize an available and measurable resource to guide development. On a regional basis, a significant limiting factor to new coastal development is the quantity and quality of local water supplies. Therefore, the amount of development should not exceed an established safe rate of withdrawal from the local watershed or ground water basin. That rate has not been established in most areas, and no substantial development should be allowed prior to its identification.

Thus, several public actions are necessary: a) the public agency should first establish the safe yield of water sources within a given watershed or ground water basin, which may be used to determine allowable intensities and types of use within the basin; b) all water use is to be monitored, and metering devices required on all existing and future water supply systems; and c) as part of water use monitoring, the responsible agency should, at appropriate intervals, conduct water quality and pumping tests as appropriate to determine the adequacy and potability of supply. This information can then be used in reviewing other proposals for development within a particular watershed or ground water basin.

By prohibiting connections to an existing water system, several undesirable growth effects are eliminated. Large-scale development, normally attracted by major water supply lines, is no longer encouraged and, whereas most municipal water systems can increase capacity based on projected need (e.g., through water importation or impoundment), the proposed development would require dependence on a single, self-recharging resource.

The prerogatives regarding additional restrictions on impoundments and ground water use should be maintained. As a general policy it is recommended that impoundments and ground water withdrawals must take place only within the property in which the water is to be used. The effect of this is to restrict development to those areas having available watersheds or ground water supply. While this might make some areas less developable, it would encourage landowners to merge or aggregate their property. Aggregation would provide opportunities for development or use more compatible with regional coastal policies, and allow for large areas of open space, small concentrated areas of development, and preservation of natural resource values. However, in some instances it may be preferable to permit utilization of surface or ground water whose source is on an adjacent property. In such instances, the public agency should have the power to determine if regional goals would best be served by waiving the on-site water supply requirement. In no instance, however, should an impoundment to provide water supply to development be allowed to occupy a natural resource conservation area.

If water is to be imported, one of the following conditions must be present: existing local water supply is not suitable for agricultural use because of the quality and/or availability of the resource; or water is currently being withdrawn at or near the maximum safe yield and additional withdrawal threatens the supply. In all instances, imported water must be expressly limited by contract to agricultural and/or community growth area uses only.

While these limitations on water use attempt to protect the supply source, they must be viewed in the long run as only temporal in nature. Therefore, it is recommended that a more detailed water-use policy be developed along the guidelines shown through examination of local watersheds and ground water basins along the coast and establishment of policies which integrate the implications of water importance, agricultural water use and continuing dependence on local water supply for residential use.

2. Sewage treatment must be accomplished locally using either a carefully sited land disposal system or a packaged sewage system which treats effluent to produce water of highest quality. This recognizes that growth is encouraged by large-scale technically-efficient regional sewage disposal systems, and that it is in the interest of coastal preservation to rely on smaller-scale, natural processes for sewage treatment. Septic tanks, filter fields, and effluent spray techniques, when designed, sited and maintained according to rigorous standards, are preferred methods of sewage disposal and treatment. Testing for suitability for these uses must be made before issuing any permit for their construction and/or operation. Additionally, tests must be made at regular intervals to ensure that systems are not overloaded. It is recognized that in some instances the natural conditions required to support a land discharge sewage disposal system may not be present. Under such circumstances, the responsible public agencies shall have the prerogative to permit utilization of a small sewage system that services the local area or project only, and treats effluent so that the resulting water is of the highest possible and appropriate quality.

3. All direct and indirect costs for sewer and water systems should be borne by developers and users of the system and not passed on to the public-at-large. Public investments in capital, operating and maintenance expenditures for sewer and water facilities within open space areas should be fully covered by the developer or users of the area. It is imperative that such systems be managed and maintained by a quasi-public or public agency having responsibility for compliance with all discharge requirements and health laws. Examples of methods to accomplish this and include a management agreement with an existing water company, sewage disposal authority, or community service district, and establishment of a separate entity whose sole responsibility would be management and maintenance. A homeowners' association, as typically constituted, would not suffice. Any impact resulting from a system defect or improper placement, utilization or management of the facilities should remain the responsibility of the property owners served, as represented by the managing agency. For example, in an instance where septic tanks have been sited improperly (e.g., in areas of severe septic tank unsuitability or for developments beyond the capacity of the natural system to effectively treat sewage), and the local water supply becomes polluted, the developer and property owners should be liable to all users of that water.

4. Sewer and water systems must be designed and constructed at a capacity appropriate only to the proposed use. This is intended to prevent overbuilding or overdesign of a sewer or water system which, if unregulated, would provide a potential for additional development beyond levels compatible with regional coastal policy.

ACQUISITION

Rationale for Acquisition

This section is concerned only with acquisition of lands designated in the plan for retention of open space which are not amenable to regulation as the means for implementation. Both the type of open space resources to be protected in this manner and priorities are included in this section.

It should be recognized that many other areas are also appropriate for public acquisition. It is not the intent that these recommendations be used to supplant the continuing park, recreation, and natural preserve acquisition and development programs of any of the various agencies responsible for such work. Rather, acquisition according to the priorities in this plan is intended to augment regulation efforts, further assuring that compatible open space uses are retained in areas containing identified regional open space resources. The efforts of these agencies is to be supported by providing assurance that appropriate open space resources will remain undeveloped until they themselves are able to fully implement the programs indicated in their respective plans.

Sites selected for assignment of an acquisition priority have been determined according to two criteria:

1. Any site proposed for public open space acquisition must be eligible for designation as a regional open space resource as defined and mapped in this plan.

2. Other reasonable alternatives for protecting the site's resources must be either infeasible or unavailable.

Often there is considerable overlap of the various regional open space resource values. Wildlife habitat is often associated with public recreation values, for example, and severe hazards to public safety are found in all the open space resource categories. Prime agricultural soils and severe hazards to public safety, – including steep slopes – generally lend themselves to regulation by government in the interests of the public health, safety and welfare. Hence, sites possessing these characteristics do not meet the second criterion, since other alternatives may be used to protect regional open space resources. Of the several open space resources of regional significance, recreational and wildlife habitat resources are the least subject to protection through governmental regulation alone. For that reason, of those properties included in the Open Space Values and Constraints map, those possessing only public recreation and/or wildlife habitat resources, to the exclusion of all others, are considered appropriate for assignment of an acquisition priority.

Public recreation and wildlife habitat resources both provide a sound basis for public acquisition. This is especially in view of the generally complex and unresolved questions dealing with regulation to secure large parcels containing regional open space resources. Both may be considered a public use or benefit under the constitution, hence appropriate for acquisition using a variety of procedures.

Assignment of Priorities

Priorities have been assigned to eligible sites according to relative resource value and threat of loss to incompatible development. The greater the regional open space value, or higher the likelihood that the resource will succumb to inappropriate development, the higher the priority assigned. Threat of loss has been determined from the presence of a selected number of development indications–factors important to the feasibility of residential or commercial development.

A site considered to have high development pressures typically has: a development proposed, or known to be in preparation, which would be incompatible with the regional open space value of the site; sewer or water services available to site; and relatively easy access to either employment centers or to populations seeking second home sites. Sites perceived to have medium development pressures typically are: presently for sale, but have no known development proposal; near existing development; and in locations where sewer or water services might be extended relatively easily. On the other hand, sites having relatively low development pressures typically: have no development or sale proposed or known; are under contract pursuant to the Land Conservation Act (Williamson Act); and have conditions present under which provision for sewage disposal or water supply would be relatively difficult or impossible.

While the approval of cities, counties and various governmental agencies is essential to any development, the policies, plans and zoning of these agencies are subject to change. Consequently, they have not been considered in this determination of development pressures.

For purposes of assigning acquisition priorities, the degree of recreational value has been considered to be the sum of four factors: 1) ability of the site to provide public access to the shore from a public road; 2) inclusion of a beach resource in the site; 3) presence of, and opportunity to protect, important views from public roads; and 4) relative demand for the site type and location. Each of these factors has been given equal weight in the determination of degree of recreational value.

Relative value of wildlife habitat resources, as used herein, is a sum of the recommendations from various state and local agencies and informed individuals which were used in preparing the Open Space Values and Constraints map. Higher ratings have been assigned to unique wildlife habitats, and lower ratings to other valuable coastal habitats.

Each of the three factors used to determine acquisition priorities — threat of loss, degree of recreational value and relative value of wildlife habitat — has been assigned equal weight. Each open space resource site under consideration due to need for protection through public acquisition has been evaluated using each of the factors. Relative values for the sites have been compared, and each site assigned a priority according to value. The sites and their relative priorities for acquisition are shown on the Acquisition Priorities map.

DEVELOPMENT REVIEW

The public exercise of acquisition power is not essential to maintain all coastal values. There is sufficient regulatory authority to prevent destruction, degradation and obscuring of coastal resources by insensitive use and development. Further, regulation may be used for outright prohibition of development on agricultural lands and in hazardous areas.

Effective regulation of coastal development must rely in large part on detailed and

coordinated development review by public agencies. Such regulation consistent with planning policies should ensure that both public and private coastal activities are appropriately located and that environmental impacts are minimized.

Review criteria in this plan are comprehensive in scope, yet remain at a general level of detail. Basis for each of the review criteria is found in one or more of the regional coastal policies, supporting strategies and additional recommendations included in this plan. However, current levels of knowledge of natural coastal processes and the uneven quality of data for much of the coastal area preclude advance formulation of specific review criteria in some subject areas.

The review criteria are arranged in a series of six "tests" to determine if a development proposal conforms to regional coastal policy and supporting strategies. While no single test is conclusive "proof" that a proposal is appropriate to the site or to the coastal area in general, failure of any single test is sufficient grounds for rejection of a proposed project, which must conform to all criteria in all tests.

In all cases, it is the responsibility of the applicant to provide sufficient data and analysis, commensurate with the scale, type and location of the proposal, to enable the reviewing agency to perform each test in the series. This may be supplied either directly by the applicant or by the reviewing agency at the applicant's expense, as appropriate. A full discussion of the review procedure and its organizational implications is included in Chapter V.

APPLICATION OF DEVELOPMENT REVIEW CRITERIA / CONSERVATION/DEVELOPMENT AREA	DEVELOPMENT REVIEW TESTS											
	1 Conservation/Development Policy	Dependency Criteria	Public Benefit Criteria	Alternative Site Availability Test	Community Compatibility	Open Space Retention Objectives	2 Regional Open Space Resources	3 Hazards to Public Safety	4 Public Services and Facilities	5 Public Access to the Shoreline	6 Impact on Natural/Physical Environment
Community Growth, Immediate Shoreline		●	●	●	●			●	●	●	●
Community Growth, Non-Shoreline					●			●	●		
Open Use - Limited Development, Immediate Shoreline		●	●	●		●		●	●	●	●
Open Use - Limited Development, Non-Shoreline		●	●			●		●	●		●
Natural Resource Conservation, Immediate Shoreline		●	●	●		●	●	●	●	●	●
Natural Resource Conservation, Non-Shoreline		●	●	●		●	●	●	●		●

Test 1: Conservation/Development Policy

The first test compares the uses proposed by the applicant with the conservation/development designations described and mapped in Chapter III. Once it is determined in which of the areas the proposal is located, appropriate criteria listed in Chapter III are used in the testing process. The accompanying table indicates the nature of those criteria for each of the designations.

Test 2: Regional Open Space Resources

The second test is a more detailed analysis of regional open space resources. The intent is to minimize the irretrievable commitment of these resources to either intensive development or to uses which are not compatible with the nature of the resources. Regardless of the degree of coastal dependence or public benefit demonstrated in Test 1, it remains in the greater public interest to ensure that specific uses will not degrade the quality of regional open space resources which are considered to be critical elements of the coastal environment. In the discussion which follows, these are divided into wildlife habitat, recreation, and agricultural resources.

Wildlife Habitat Resources

Although not all resources included within this category are wildlife habitats in the usual sense, each is important in the lifecycle of fish or wildlife, and the problems associated with their use are often similar. This category specifically includes, but is not limited to, beaches, sand dunes, spits and bay-mouth bars, mudflats, marshes, estuaries, lagoons, bays, rocky intertidal areas, shellfish culture areas, riparian habitats, anadromous fish waterways and lakes. These areas should, to the maximum extent possible, be limited to those educational, scientific and recreational uses which are able to clearly demonstrate a high degree of resource compatibility and minimal, if any, impact on fish or wildlife habitat.

Public Recreation Resources

Identified public recreation resources, including areas of significant historical or archeological value and areas of outstanding scenic amenity, should be maintained for public use and enjoyment in open space uses. Areas planned for later acquisition should, in the interim, be maintained in compatible uses. Therefore, no major construction should be allowed on an identified public recreation resource.

At the regional level, direct public uses of coastal recreation resources are separated into three categories: 1) **coastal recreation areas** are generally small recreation resources able to accommodate large numbers of users; 2) **regional coastal park areas** are larger areas set aside for less intensive public use, although they may include portions devoted to more intensive use; and 3) **regional coastal trails** are linear parks which may connect or pass through each of the other types of recreation resources. Appropriate trail uses and management policies, together with recommendations for a regional coastal trail system are included earlier in this chapter.

A **coastal recreation area** is primarily an intensive recreational use area. It is planned and maintained to accommodate large numbers of users. Examples of such a facility are Doran Beach at Bodega Bay, Stinson Beach State Park, and Ocean Beach in San Francisco. Accessibility to these facilities is relatively good, and the natural environment is generally able to absorb the activity of large numbers of people without sustaining permanent or substantial damage. Generally, coastal recreation areas will be smaller than regional coastal parks, but the amount of intensive human use will be greater. Heavy capital investment may be needed, but extensive landscape alteration is undesirable. A significant portion of the capital investment for each of the coastal recreation areas should be utilized to provide access to these areas by means less damaging to the environment than private automobiles. To increase understanding and enjoyment of the coastal ecosystem, nature interpretive facilities and small environmental areas should be set aside for such uses.

A **regional coastal park** must include "environmental" areas, and may include "recreational" areas. Most of the park area must possess outstanding natural resources or scenic values. Use of this area should not destroy its character. Facilities provided may include trails, a very limited degree of vehicular access and basic development necessary for primitive campsites.

Recreational areas of regional coastal parks should accommodate all the development appropriate to the entire regional coastal park, thereby preserving the environmental area primarily in its natural state. Hence, any recreational development such as campgrounds, picnic facilities, nature interpretive facilities, equestrian facilities, roads and beach use areas, must be accommodated in recreational areas, and not extend into environmental areas.

A **regional coastal trail** is a linear park whose function is to allow safe and pleasant non-motorized travel between the coast and the interior, and between coastal parks along the entire coast. Regional coastal trails will also include trailheads – staging and resting areas. The trails will provide scenic routes to and within the coastal area without trespassing on private lands. Careful maintenance of the trail and its surroundings will be necessary. Further criteria are included in the section dealing with accessibility strategies, above.

Prime Agricultural Resources

Prime coastal agricultural resources, created by a favorable combination of soils and marine-dominated climate, make possible this region's production of artichokes, broccoli, brussels sprouts, cauliflower and much of its cut flowers. The best and most extensive production area in the region for these crops is on the coastal terraces of San Mateo County, but Marin and Sonoma Counties also possess several small areas of this kind. More specific information regarding the classification of these resources is contained in Chapter II.

Prime agricultural areas should be reserved for agriculturally - dominated activities. These areas should not be committed to intensive development, nor should they be taxed beyond their agricultural value or otherwise forced out of business.

Test 3: Hazards to Public Safety

Hazards to public safety include seismic-induced shaking, slope stability, susceptibility to shoreline erosion, steep slopes in excess of 40%, and flooding from storm runoff and seismic sea waves. Building should not take place in areas subject to significant hazards. Such areas should be maintained in open space uses which will not significantly be endangered by such hazards. Areas which 1) are presently developed or subdivided, and have water supply and waste disposal facilities installed; **and** 2) which make appropriate and continuing provisions to adequately inform prospective buyers and builders of such hazards as may reasonably be expected; shall be exempt from the provisions of this test which pertain only to **onsite** hazards.

Reasonable and appropriate setbacks from beach and bluff lines should be provided where hazardous shoreline erosion may be reasonably anticipated. Such setbacks should be in addition to any other setbacks required for provision of public access and mitigation of the visual impacts of the development from public areas.

Test 4: Public Services and Facilities

The fourth test has two parts, one dealing with coastal accessibility, the other with water supply and sewage disposal. These subjects are discussed earlier in this chapter. The demands reasonably expected to be made on the coastal highway and public transportation networks must be meshed with the accessibility strategies and specific locational recommendations derived from them. In addition, development which would result in levels of use greater than existing highway capacity should not be permitted. The proposal must be tested for conformance with the service strategies pertaining to the area in which the proposed project is located.

Test 5: Public Access to the Shoreline

Public access from state or local roads or trails to the shoreline should be provided to the maximum extent practicable. Access should be located to facilitate loop excursions and controlled to prevent harm to the environment, high operating costs, or substantial trespass over private lands.

A public access easement, **at least** 100 feet wide (beginning at the mean high tide line) should be dedicated along the shoreline wherever private development is permitted. This width may be increased, to a reasonable degree, at the discretion of the reviewing agency. Topography, public safety, site security, etc., could justify such increases.

Test 6: Impact on the Natural and Physical Environment

This last test is specifically focused on determining allowable levels of impact on the natural and physical environment outside community growth areas. The criteria in this test are at a general level of detail, since specific data is lacking and current know-

ledge of natural coastal processes is often very general. The criteria are arranged into four subject areas for general review purposes, although there is overlap of several of the criteria.

Resource Conservation

Wildlife can only be preserved by protecting the natural habitat for each specie. To do this, grading and excavation should avoid disturbances to soil, water, or rooting patterns that would destroy the vegetation.

To help maintain an ecologically balanced forest, with trees of different ages and variety and a diversified plant community, timber operations should be limited to thinning or selective harvest practices, and be followed by timely and thorough clean-up because of the potential adverse impact of timber harvesting practices.

No development should significantly disrupt the natural erosion and transport of sand or other beach material from coastal watersheds into the coast's littoral circulation system.

Site preparation procedures and construction should be carefully controlled to reduce to the maximum extent possible increases in erosion or sedimentation rates.

Water Resources

A development which contributes to increases in levels of surface water runoff detrimental to the existence of important natural resources should not be allowed. Increases in levels of surface water runoff should be reduced to the maximum extent possible to minimize erosion.

Significant woodland watersheds, water recharge areas, and other elements having a direct bearing on the quality of public water supplies shall be preserved.

Coastal landforms important to the essential hydrologic values should not be altered.

Withdrawals from ground water basins should not be allowed in such quantity that a continued supply would be jeopordized.

The placement of impermeable surfacing or compaction of permeable soils and geologic areas should not be allowed to significantly disrupt or diminish natural patterns of ground water recharge.

Inter-basin transfers of water resources, although acceptable for certain purposes, should not be permitted which have significant adverse impacts on water regimen stability and water quality.

Environmental Quality

Standards for emission of air pollutants set by an air pollution control board and the Air Resources Board must be met, for protection of coast-related crops, the natural environment and public health, as well as restoration and maintenance of the aestheti-

cally appealing quality of a relatively unpolluted coastal atmosphere.

Where local climatic and topographic factors are conducive to airshed pollutant concentration, the location and arrangement of land uses and population density should reflect such conditions.

No use or development may introduce significant levels of noxious odors into the coastal environment.

Developments resulting in noise levels which may have a substantial detrimental effect on the quality or resources of the coastal environment must be prohibited.

Pesticides and other chemicals used in the coastal area should be of the types and amounts that will have no significant or persistent adverse effects upon the coastal environment.

Solid and liquid waste discharge and disposal must not contaminate water resources or adversely affect the aquatic environment of the coastal area.

Discharge of water containing organic nutrients should be shifted, to maximum extent possible, from the aquatic environment, where it may be detrimental, to land environments where such nutrients are useful fertilizers.

Visual Impact

Development should carefully fit the land and water environment so that its presence is subordinated to the character of the coastal environment.

Grading and excavation should complement natural configurations of topography.

Public views from major travel corridors should be protected and enhanced, and development should not be allowed which would significantly obscure, detract or negatively affect the quality of these views.

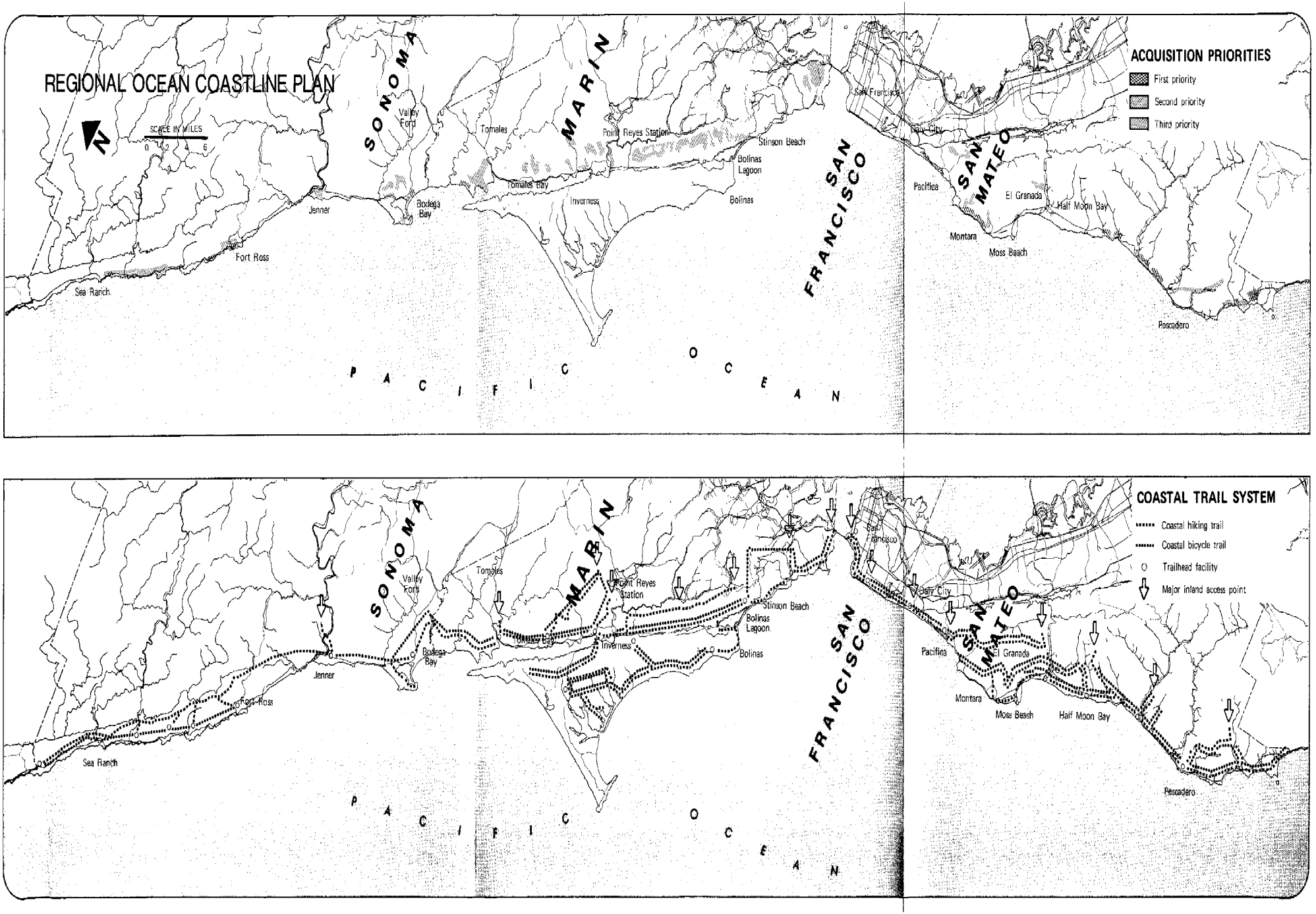
Developments should not be allowed to unreasonably obscure cones of vision and views of or along the coast.

Urban appurtenances, including roadway and building signs, traffic signals, overhead wires and telephone and lighting poles, should be of minimum bulk and height and designed to have an uncluttered appearance and be subordinant to the setting.

No off-premise outdoor advertising should be permitted.

Highway development should include vista points and roadside rests which provide motorists with an opportunity to view scenic amenities and natural features of the coastline.

Selective clearing of vegetation which allows the display of important views from highways which parallel the coastline may be permitted.


REGIONAL OCEAN COASTLINE PLAN
N
SCALE IN MILES
0 2 4 6
SONOMA
MARIN
SAN FRANCISCO
SAN MATEO
Valley Ford
Tomales
Point Reyes Station
Stinson Beach
Bolinas Lagoon
Bolinas
Tomales Bay
Inverness
Bodega Bay
Jenner
Fort Ross
Sea Ranch
San Francisco
Daly City
Pacifica
El Granada
Half Moon Bay
Montara
Moss Beach
Pescadero
PACIFIC OCEAN
ACQUISITION PRIORITIES
First priority
Second priority
Third priority
COASTAL TRAIL SYSTEM
Coastal hiking trail
Coastal bicycle trail
Trailhead facility
Major inland access point

V. ORGANIZATION, POWERS AND PROCEDURES

INTRODUCTION

This portion of the Ocean Coastline Planning Program has been directed to amplifying the specific policies and powers essential to achieving coastal goals. The next phase of the program should be addressed directly to the issues of inter-governmental and interagency relations as these involve the coastline and implementation of coastal policies. This chapter begins to address itself to these issues, especially as they relate to the appropriate locus of responsibility and the procedures which should be used.

Individual jurisdictions with limited resources and growing financial needs have sought additional tax base. These actions have marked impacts on the environment which are often adverse to broad regional interests. This sequence of events has led to new attempts to institutionalize regional planning in the Bay Area. The conflict between local and regional interests and the resulting polarizations are nowhere more evident than along the Bay Region's coastline.

Once the regional impact of local actions is acknowledged, the specific concerns are what new agencies, powers and procedures should be focused on regional issues. A related issue is the organization and relationships among existing State, regional and local agencies, many with responsibilities relating to the coastline. Hence, these three issues—organization, powers and procedures—are addressed successively in this chapter. However, the next phase of the Ocean Coastline Planning Program should: consider means by which authority would be shared among agencies; clarify respective roles and powers; and make more specific recommendations on appropriate legislative action which may be necessary. The intent of such an effort should be to complement the coastal planning program embodied in the California Coastal Conservation Act.

Any discussion of implementing agencies relating to the California coastline must consider the implications of the currently operative Coastal Zone Conservation Act, with its State Coastal Commission and six regional commissions. That act was devised in part to provide a careful review of planning and organizational responses. One ultimate possibility is that the coastal plan to be submitted in 1976 may remain advisory only, with no new or continuing implementing entity proposed. Yet, such a possibility is unlikely; the past was imperfect and there is no assurance that simple exhortations to improve will suffice. Hence, the following discussion looks ahead, and suggests directions for appropriate follow-on coastal planning implementation for the San Francisco Bay Region's coastal area.

A basic assumption upon which to posit an implementation approach is that there is a role to be played in planning the coastline by all levels of government—the nation, state, regions and localities (counties, cities and districts). The following is a general listing of the most preeminent interests of each of these levels. The crucial disclaimer regarding such gross allocations is that each major function should be thought

of as a bundle of "sub-functions", which could be allocated to several different levels. Moreover, even for a particular sub-function, the respective responsibility (e.g., inventory, analysis, planning, regulation, etc.) may differ. For that reason, the following should be construed only as that governmental level which should have the most predominant (and not exclusive) policy-making responsibility for those functions which are distinctly coast-related. (Other governmental functions relating to social and economic welfare are not considered here.)

Federal Predominance: international shipping, including the location of major harbors, navigational facilities, offshore oil extraction, power generation, nuclear and other facilities, ocean mineral resources and national parks and recreation areas.

State Predominance: land use (shoreline dependency), agricultural preservation, aquatic wildlife habitats, water pollution control, air pollution control, state parks and recreation areas, river flows and airport location.

Regional Predominance: channeling of growth, shoreline access, pedestrian trail systems, vehicular and transportation access, terrestrial wildlife habitat conservation, sedimentation and eutrophication, view preservation, solid waste disposal, water supply and quality and dredging, filling control.

Local (Counties, Cities, Districts) Predominance: site planning, development design, detailed land uses, population density, visual amenity and appearance, service levels, community facilities, drainage, police and fire protection, local recreation, noise pollution control, flood and seismic safety amelioration, public health and socio-cultural environment.

ORGANIZATION

The agency designated to assume the ocean coastline planning function in the Bay Region after 1976 could take several possible forms. The possibilities include:

1 – A separate ocean coastline planning agency as a continuation of the Coastal Conservation Act Commissions or possibly as an agency tailored for the Bay Region, similar to BCDC;

2 – A limited multi-purpose regional organization with a constituent ocean coastline planning agency as one sub-unit; and

3 – A consolidated regional government with a single decision-making body but with a coastline unit or department.

It is recommended that a limited multi-purpose regional organization with a coastal planning and management subfunction be created in 1976.

A separate ocean coastline agency (or agencies) with its own policy-making board would be able to exercise influence over coastal planning, primarily through planning and regulatory powers. It would control land use, might be able to acquire property interests and, through design review and site planning assistance, influence coastal development. Two ocean coastline agencies presently exist for the Bay Area.

Such an independent agency would be forced to operate without benefit of a binding regional growth policy. Internal decisions could be based on adopted regional planning policy, but if the latter was not formally recognized, it would not provide needed

planning coordination. Existing special purpose agencies and districts operative in the coastal area would continue to make decisions in isolation, from overall regional policies though they might be regulated and constrained from independent action by some form of referral or ad hoc coordinative system. There would be a tendency for present interagency conflicts to remain which could act to inhibit a balanced presentation of issues to the public. This would put a premium on voluntary coordination and mutual assistance among the agencies. An independent ocean coastline agency, to be effective, would require substantial authority if the coastal plan is to be binding upon other public programs affecting the coastal area.

Although a single-purpose coastline agency is necessary for this interim planning period, it is not the ideal arrangement. A permanent, separate coastline agency would tend to perpetuate the fragmented forms of regional decision-making that now exist and which do not always produce the most effective decisions. The need for a very close relationship between coastal conservation and overall regional growth policies is one of the most important findings of this study. In order to reduce the pressure for development on the coastline, such pressures must be channeled elsewhere. Responsibility for funding acquisition of major coastal land must be shared with the rest of the region, for intensive use of that coastline is not exclusive to those who live within a few miles of it. Any freeways, power lines, dams, and the like, even though they may start or be located well inland, must, if their effects are felt on the coastline, be controlled to reflect a coastal perspective. On the other hand, overriding regional needs must also be acknowledged.

A second alternative is a consolidated regional government which would unify, under the responsibility of a regional legislature, all those authorities which presently act separately or are single purpose in nature. This form of government would have both the incentive and authority to place the Coastline Plan in the context of a larger regional plan. It would coordinate all acquisition, development and operating programs to support coastline policies, and could coordinate inland development with coastline programs. The activities of a regional legislature would attract wide public attention to regional issues. Within a broad structure, a coastline unit could develop specialized information and exercise certain planning and regulatory functions, but would not have a totally separate decision-making function.

The third form of government, a limited multi-purpose regional organization, represents a coordinated approach. Such an organization, with a subordinate coastal agency, could combine the features of a separate coastline agency and a consolidated regional government. The constituent coastline agency would retain initiative over coastal planning policies. The limited multi-purpose regional organization would exercise a veto power, perform a coordinating function, and act as an appellate body in case of disputes. The constituent agencies would retain their own decision-makers, while the multi-purpose organization would carry out overall regional planning. A definite mechanism for securing coordination, airing and settling conflicts, and facilitating adjustments with other program agencies would then exist.

Resources, common staff, and auxiliary services could be pooled and shared by constituent agencies. Interagency communication and coordination procedures would be more effective than at present. Agency commitments to parochial purposes would be

balanced by the ability of the regional body to exercise a veto and probably, under some circumstances, require actions.

An alternative to the limited multi-purpose regional organization approach would be a simple "umbrella , superimposed above existing regional agencies. Each of the latter would retain autonomy as well as equal and direct access to the regional decision-making body. However, although coordination and collaboration between agencies would be voluntary, certain types of programs and actions might be mandated by the regional agency for joint consideration.

The ocean coastline agency would remain in existence as a separate entity, and likely would be party to regional agency resolutions of any conflicts with a regional transportation agency, regional planning agency, water quality control agency, regional park agency, agencies involved with service extensions, local agency formation commissions, etc.

POWERS AND PROCEDURES FOR IMPLEMENTATION

A prior section of this report described the planning and regulatory policies which should be utilized to determine the policies and achieve the goals previously indicated. In this section, the powers which are proposed to implement these policies are discussed.

Public Facilities Powers and Procedures

A basic premise of the accessibility and service level policies is that control over highways, sewer and water facilities means control over growth. To achieve this control means that several agencies which now undertake their own planning or which have regulatory powers must be brought more directly within the coastal planning process. They include the District Office of the Division of Highways, the Local Agency Formation Commissions of each county, the State and Regional Water Quality Control Boards and the Bay Area Sewage Services Agency.

In order for this effort to be undertaken, controls must be exercised by these and other agencies. Yet, under present law, such power often is inadequate. Hence, appropriate modifications in the law should be made to ensure that powers are available to achieve these goals, or at least that there are no mandates in the laws which prevent limitations on expansion of services and facilities or the monitoring of operations.

Governmental influence over decisions of the State Division of Highways is limited to the control over the closing of streets, the review of highways across coastline coves by the Resources Agency and the State Lands Commission and assorted and generally incidental powers of the Public Utilities Commission, the Park Commission and others. However, the Division of Highways itself makes the key determination — the selection of routes and their designs. The route selection procedure is not fully described in State law; it is within the area of administrative guidelines. Those steps which are described in State law include: adoption of a resolution by the commission spelling out the procedure to be used to study a route; authorization for the study; consultation with local jurisdictions; provision for special requests by public agencies for public hearings; transmission by the local jurisdiction of information it wishes presented; public

hearings; recommendation by the department to the commission; route adoptions; and execution of freeway agreements.

Clearly the missing link in this series of steps is some form of requirement for referral of proposals to regional agencies concerned with environmental planning for their review and approval. Hence, it is recommended that in the coastal area, any proposal for development of a highway extension be the subject of a development application which would be reviewed for its conformity with the coastline plan. Obviously, the influence over the State Division of Highways would be greater if the coastline plan were presented and adopted in a single statewide plan by a State agency, which would have some parity with the State Highway Commission and the Division of Highways. However, many of the most crucial decisions are made at the District (regional) level, processed upwards, and after approval, processed downwards. Thus, there would be a measure of parity if route referral for approval by the Coastal Agency were required early in the route selection and design process. At present, of course, the council of governments with A-95 review power has authority to comment on all proposals involving federal funding. However, these are advisory and not binding on the funding agency, although if a regional plan supports rejection of a highway plan, it would be difficult to ignore. Some highways involve only state funds, however, and here the role of the regional planning agency is unclear.

Under an amendment to State Law, a new Department of Transportation began on July 1, 1973, and is engaged in an effort to formulate a State Transportation Plan by 1976. The parallel with the Coastal Commission effort is obvious. The State Transportation Board is mandated to work with existing regional and local agencies, although it is anticipated that there will be a later transition to statutory regional agencies with powers to implement the Plan. By July, 1974, there is to be a statewide report on transportation goals, objectives and policies. By April 1, 1975, the regional transportation plans are to be adopted, and by January 1, 1976, the California Transportation Plan is to be adopted. This planning approach should benefit the State Legislature in deciding on permanent solutions to both Coastal and Transportation Planning.

There is some hope that the State would coordinate or merge these two functions. When this occurs, the need for planning of automobile access to constrain development pressures and to limit adverse environmental impacts will occur without elaborate intergovernmental (and sometimes ineffective) mechanisms.

The Local Agency Formation Commissions make final decisions on creation or annexation of districts involved with sewer and water facilities. Although many LAFCs work closely with their planning commissions and departments in establishing "spheres of influence" and in making decisions on local agency formation, other inputs are needed for good planning from the environmental standpoint. To achieve this end, it is proposed that joint meetings of local agency formation commissions and staffs in the coastal counties with the coastal planning commissions and staffs be held. The purpose will be to start the process of adopting the present guidelines for review of new formations and annexations, as coastline plans are developed as part of the coastal planning process.

Regulatory Powers and Procedures

Development Review

Clearly, the regional agency designated to carry out ocean coastline planning must be granted the power of regulation. This power should be shared among governments. Regulation of coastal development should be on a case-by-case review basis, with decisions guided by and subject to detailed planning criteria. The procedure could resemble the conditional use permit procedure common in local zoning, although the criteria proposed to guide decisions are in some cases more precise, and sometimes more limiting, than the usual criteria for conditional uses.

The case-by-case method is the only one that will work now on the coast. The coastal area is too diverse—in location, open space values, geology, ecology and economics—to be subject to rigid rules intended to cover all situations. For some questions, such as what building techniques are required for hazard areas, information is not and cannot be available except on a project-by-project, area-by-area basis. Flexibility to deal with particular physical conditions and particular objectives, and flexibility to adjust to change, call for local approval with regional review. The regional plan would need continual updating because of new information and in some cases, new needs. Further, a special procedure should be available for lessening or eliminating any standard or supporting strategies in extenuating circumstances involving a site location, plan or design not fully anticipated.

To facilitate such review the coastal agency should be required to: include in the adopted coastal plan an adequate review procedure; hold hearings on each application with sufficient notice; make specific findings which relate to applicable criteria; and allow appeals of each ruling to a state-wide coastal agency, an overall regional agency, or to the courts.

This system would combine planning and regulation. This should result in both better planning and better regulation. Part of the advantage of this review process will be to build up a file of increasingly more precise data and policy. The results of many individual plan and permit decisions will gradually determine many larger policy issues.

The review criteria to be applied are those set forth in the previous chapter on supporting strategies. These criteria are proposed to relate to all new development. They will be used not only in review procedures, but also to assist in internal site planning by public agencies and private developers.

Although regional review based upon precise criteria will be the basic form of regulation, selective use of the "specific plan" in critical areas also is proposed. These plans should be prepared by the coastal organization jointly with local agencies. Such plans may include proposed regulations limiting the use and management of certain areas. This procedure is not limited by the restraints on zoning, e.g., uniformity of application, complex procedures, minimum size of zones, etc. Hence, the State Planning Law provisions should be used as precedents in framing an equivalent power for the coastal agency. Such plans either could be directly binding "zoning-type" regulation, or could more closely resemble state agency administrative review.

To avoid the potential inequities arising from prior substantial commitments of resources, the proposed criteria dealing with dependency of uses upon coastal resources, or public benefit, i.e., maximum extent of coverage (landscape alteration) and requirements for tourist-oriented, recreational or transient accommodations and facilities, should not be applicable to pre-existing subdivided lots of record which previously have been fully provided with all necessary infrastructure improvements.

Requiring dedication for public use of the coastline has a precedent in the practice of many cities and counties which require subdividers to dedicate land for parks to serve the residential population (or, where such dedication of land is infeasible, to pay a charge in lieu of dedication). A developer should be required to dedicate a certain percentage of his coastline for public access and use, or to pay an in-lieu fee. Such fees in lieu of actual land dedication have been upheld to offset the costs of neighborhood parks in subdivisions when the payment bears a reasonable relationship to the use of the park and recreational facilities by the future inhabitants of the subdivision. Provisions requiring public access from a highway to the ocean as part of subdivision approval are now included in the Public Resources Code of California.

Amendments to the Subdivision Map Act enacted in 1971 provide new criteria for the regulation of subdivisions. A new section requires the governing body of a city or county to deny approval to a final or tentative subdivision map upon making any of the specified findings. One of the grounds for denial is that the subdivision will conflict with existing public easements for access through or use of the property. Consideration is restricted to easements of record and easements established by final judgment, and also allows the governing body to approve the proposed subdivision if it finds that alternate easements are available. The 1971 amendments did not amend or repeal the existing provisions of the Subdivision Map Act which require reasonable public access to the tidelands as a condition of approval for all proposed subdivisions located on the coastline. However, it is now required that if existing alternative public access were not available within a reasonable distance of the subdivision, the subdivider must dedicate new access routes. The city or county has the responsibility for determining what constitutes reasonable public access based upon the size of the subdivision, the likelihood of trespass, the uses appropriate to the types of coastline and the mode of travel used on the access route. However, the statute does not require a subdivision to provide for public recreational use of the lands above the line of mean high tide. Such authority should be vested in a coastal agency.

Intergovernmental Alternatives for Regulation

There are five issue areas in designing the administrative components of an intergovernmental regulatory system for the coastline:

1. Regional standards for local adoption or regional model ordinances for local enactment.

2. Regional standards for local enforcement or regional regulatory supersedence for special aspects or areas.

3. Regional zoning ordinances form and regional plan-based review permit procedure.

4. Referrals to other governmental levels for comment, prior to decision-making.

5. Dual permit or single permit procedures.

Listed below are a series of alternatives, proceeding from the least to the most regional authority. These are proposed for consideration at expiration of the Coastal Conservation Act in 1976.

I. REGIONAL STANDARDS - LOCAL ENFORCEMENT (Regional minimum standards, local adoption, local (only) administration and enforcement and regional information referral and potential revocation)

A regional coastal agency (RCA) could adopt ordinances or policies which contain minimum performance standards to be adopted in ordinance form and enforced by local governing bodies. The local bodies would be permitted to adopt ordinances containing more stringent development standards than those contained in RCA ordinances. However, no development, as defined in RCA ordinances, would be authorized by the local governing body until the following conditions were met:

a) A development permit application filed with and approved by the local governing body. In order for the local governing body to issue a valid development permit, the local body must have enacted an ordinance that contains standards as stringent as those provided in the RCA ordinance and must have such an ordinance approved by the RCA. Any changes, additions or deletions of an approved local ordinance must be approved by the RCA before a valid permit would be issued.

b) All local permit applications, together with all plans, study results and other information, would be filed simultaneously with the RCA and the local governing body. The RCA would be empowered to comment on and make recommendations to the local governing body regarding the proposed development. All major development or ordinance changes would require notice and public hearing provisions.

The RCA would be authorized to conduct investigations of construction activities to determine whether such construction was conducted in compliance with standards contained in the RCA ordinances. The RCA would take appropriate action when standards were not met.

All variance applications sought from local governing bodies from standards contained in the RCA ordinances would be approved both by the local governing body and the RCA. Provisions for public hearings would be included on such applications.

Notice and public hearing provisions would be built into any revocation proceedings to insure that the applicant's rights would be protected.

II. REGIONAL STANDARDS - LOCAL ENFORCEMENT - REGIONAL SUPERSEDENCE (Regional minimum standards, local adoption and enforcement, regional permit referral and potential revocation, but including special area and aspect supersedence)

The RCA would adopt ordinances or policies containing minimum performance standards to be enacted and enforced by local governing bodies. The local governing bodies would be permitted to adopt ordinances and regulations containing more stringent standards than those contained in RCA ordinances. In no instance would they be permitted to approve development applications with standards less stringent than those in RCA ordinances. There could be a provision for all variances from RCA standards to be approved both by the local governing body and the RCA.

The difference from Alternative I would be that the RCA would have the power to adopt special regulations for applications in specific geographic areas and policy areas determined by the RCA to be of regional significance. These regulations would supersede all other standards of the RCA **and all local ordinances.** These provisions would be enforced directly by the RCA.

The basic intention would be to divide review and approval functions between the RCA and local governing bodies. The RCA would review and approve or disapprove certain kinds or types of development applications and the local governing bodies would review and approve or disapprove other kinds of development applications. The intention would be to allocate development control responsibilities among levels of government best able to respond to the issues presented. In all instances, all interested parties would have the chance to review and comment upon all development applications.

This approach could have two variations. The first variation would involve approval authority. The approving agency (either the RCA or the local governing body) would depend on the size and nature of the development proposal. Thus, in certain vulnerable areas and for certain size projects, the RCA would make the determination; in other instances, the determination would be made by the local body. In either case, performance standards developed by RCA would apply. The clearest example of this may be taken from the Coastal Conservation Act, where there is an exclusion for projects costing less than $7,500 (in essence a relinquishment of regional authority to the local agency).

The second variation may be taken from the approach of the Metropolitan Council of Minneapolis/St. Paul. There certain functions were determined to be so important and critical to the region, that the metropolitan government assumed total control over them. Similarly in the coastal area, development, grading and excavation, and land alteration projects in certain critical areas might automatically be considered "regional". The same might be true of developments over a certain size. A state authority could be provided, if desired, to determine statewide coastal interest or reconcile regional coastal agency plans and/or hear appeals from RCA divisions.

III. REGIONAL ORDINANCES AND ENFORCEMENT AND LOCAL ORDINANCES AND ENFORCEMENT (Local ordinances, local administration, referral of ordinances to regional, regional ordinances and regional enforcement)

Two separate agencies, one local and one regional, would operate in a parallel but independent fashion, each with a separate set of ordinances to be administered by

the respective agency or level of government. Decisions of the RCA would supersede those made at the local level. The RCA would have the authority to enforce and police development within the permit area to insure that RCA ordinances and decisions were respected.

A detailed set of provisions would be included to enable the RCA to take appropriate legal and administrative action to enforce its standards whenever violations of their provisions occur. Such violations could include a local governing body issuing development permits without having received approval from the RCA of its ordinances, could involve development permits not conforming to provisions of RCA ordinances, or activity occuring that does not comply with the requirements of the permit. Appropriate action might include the power of the RCA to revoke such permits.

The two-agency concept, now prescribed by the Coastal Conservation Act, involves this dual permit procedure under which the local agency as well as the regional coastal agency must both approve a development permit. Both agencies review the entire application and review at least some of the same features of the applications (but from somewhat different perspectives); both have veto power over the proposed project.

IV. REGIONAL ORDINANCES AND ENFORCEMENT (Regional ordinance adoption, regional enforcement, local agency information referral)

The RCA would assume all control and jurisdiction over issuance of development permits. The RCA would adopt its own development ordinances. It would have responsibility for receiving, evaluating, reviewing, approving and imposing conditions on such development permits. Copies of all such applications, together with all plans, drawings, reports of studies, etc., filed with the applications would be sent to the local governing body for their review and comment. Such local governing bodies would be able to make suggestions for additional conditions to be imposed on such developments, as well as recommending approval or disapproval.

Regulation would be on a case-by-case basis. Permits for development approval would be issued by the RCA after a decision was made on required findings. The decision of the RCA would be guided by, and subject to, the Coastline Plan and other detailed planning criteria and, in some instances, by precise controls and "decision-rules".

The major difference between this and I is that the RCA could allow a development (e.g., one reflecting an overriding regional need) which a local government wished to prevent.

Recommendations

It is recommended that Option II, above, be developed. The review process proposed would be carried out, in a coordinated fashion, by the local agency and the regional coastal agency (RCA). An attempt would be made to create a review process in which: 1) The local agency would have the principal responsibility for conducting the reviews in less vulnerable areas; 2) Information refined by both the local agency

and the RCA would be required from the beginning; 3) The regional agency would supersede the authority of the local agency for certain areas or functions.

In the less vulnerable areas, the local agency would carry out the review, the regional agency would comment to the local agency in regard to what regional issues might be involved, and the local agency would render the decision. Only in those instances where the regional agency felt that regional values might have been hurt by the local decision would the regional agency enter (and perhaps pre-empt) the picture. (There would be a requirement for initial consultation between the local and regional agencies, which means that the local agency would be aware long in advance that they would be challenged if certain regional policies are violated.) An advantage of this procedure would be closeness of the approving body to the public most intimately involved.

At the outset, the regional coastal agency would submit to local agencies having regulatory powers in the coastal area the following:

1. Minimum standards for **mandatory** incorporation into local ordinances and administrative procedures. These would pertain only to matters of larger than local significance. The RCA would retain review power over local ordinances, review processes, and coastal development having larger than local significance or impact.

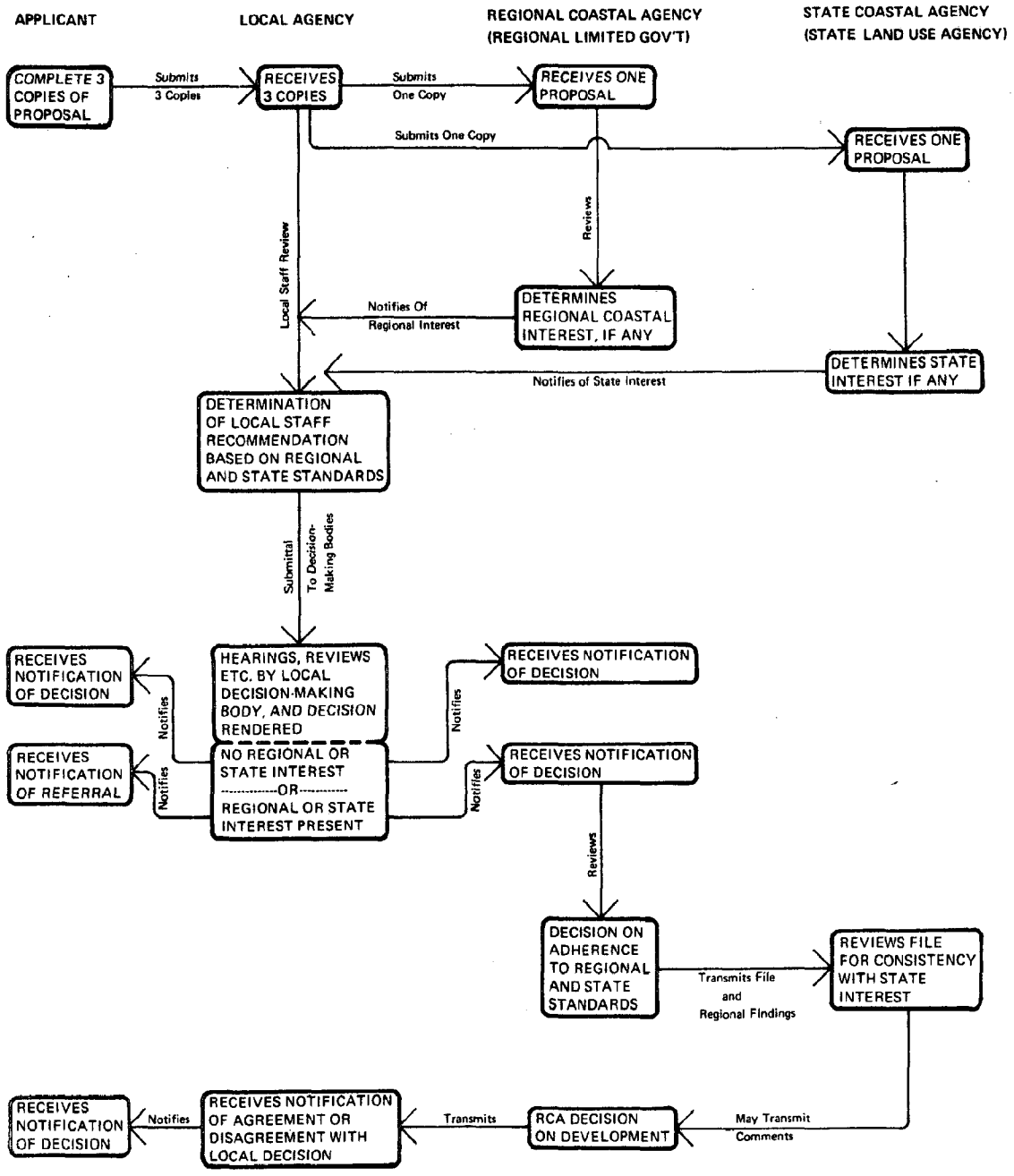
2. Recommended standards for **optional** incorporation into local ordinances and administrative procedures. These would pertain to matters of local importance, but would be guidelines for the local level to maintenance of a quality coastal environment.

3. Notification of areas or subject-matters of pre-emption by the regional agency. These issues and areas would be so critical that the regional agency might or should pre-empt. It is likely that in terms of **areas**, this should include at least the immediate shoreline as well as natural resource conservation areas. In terms of **subject matters,** it is anticipated that those issues presently requiring a 2/3 vote for approval under the Coastal Conservation Act would be pre-empted: i.e., developments interferring with line of sight toward the sea from the highway; filling, dredging, or alteration of bodies of water or marshes, restrictions on public access; adverse impacts of water quality; and beach or recreation area reduction.

Local agencies of course would retain the right to adopt standards which are more stringent than those of the RCA, except when such standards would effectively prohibit uses of overriding benefit to the region or State.

The diagram on the following page is a sample of the review procedure which could be used with this alternative.

PROPOSED COASTAL REVIEW PROCESS



Acquisition Powers and Procedures

Acquisition of real property is one of the ways of carrying out the coastal plan, but there is need to reduce both the initial and the long-term costs of acquiring appropriate properties.

The coastal agency could acquire coastal area lands by eminent domain and doubtless meet the "public use" test of the State Constitution. Advance acquisition, the condemnation of land far in advance for need, or "land banking" is somewhat novel, but has usually been upheld by the courts. It would be a useful tool to influence development and save public money by buying in advance of inflation of the land.

Excess condemnation, the taking of more land than is needed for the public facility involved in the taking, is an important tool. It could enable the coastal agency to acquire properties that are surplus to the needs of other governmental agencies, especially the State Division of Highways and the Department of Parks and Recreation.

Acquisition of "development rights" or "conservation easements" could be a useful tool in carrying out the coastline plan, but there are serious problems in the use of this method. One problem is how to define the rights taken and those retained by the owner. A second is whether development rights in the end cost significantly less than the full fee. Experience varies, but suggests that there is a meaningful saving only when the rights or easements are acquired before the land is ripe for development. At best, such rights will usually have to be sold voluntarily by private owners; condemnation of such rights is particularly difficult.

Devices for gradual acquisition of fee ownership are valuable in reducing the initial outlay of funds that might be required to carry out the plan, even with a strong program of regulation. Purchasing an option or requiring owners to notify the coastal organization whenever they propose to develop or to sell their properties will afford insurance against the buildup of development pressures that regulatory powers would have difficulty withstanding. Purchase at the request of landowners may be used as a means of deferring, until development would otherwise have occurred, the payment of compensation (if there is to be any) for denial of development permission. Such "compensation" should be accompanied by an equivalent "development charge" upon owners who did obtain development permission. Installment purchase can only work in voluntary sales, but it can be an effective way of spreading the cost of acquiring private properties over a number of years.

Acquisition followed by disposition allows the public to control use of properties to a greater extent than allowed by usual forms of regulation, while offering the opportunity to the public to recover some of the increase in the value of the properties that results from public actions or expenditures. Urban renewal as a tool has been used for improving shoreline areas in many parts of the State.

There is a section of the California Community Redevelopment Law declaring as a matter of State policy that a seashore is a "blighted area" for purposes of redevelopment when characterized by a decline in the coastal environment, including recreational and aesthetic values, or when there is a need for public beach areas and public

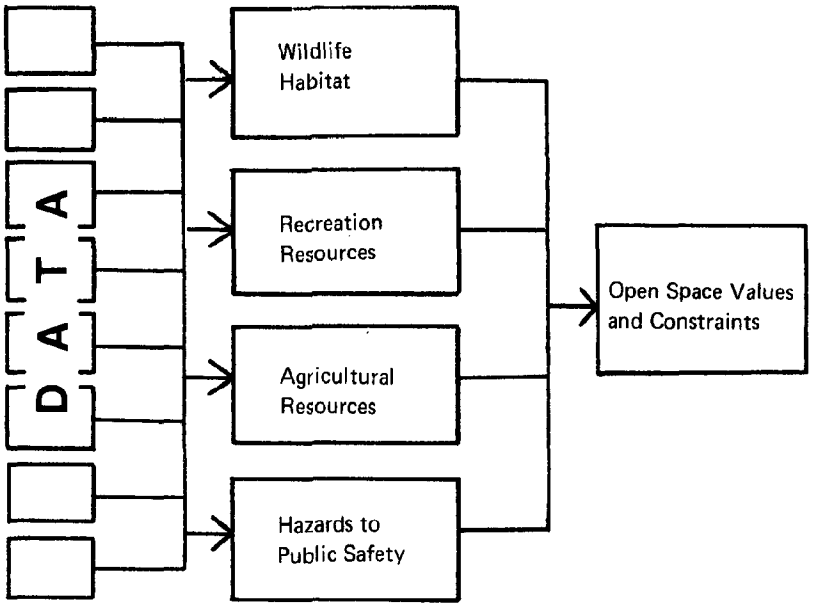
access thereto. Coastline property acquired by a redevelopment agency shall be used only for public purposes. Presumably, this qualification will be given a strict interpretation as distinguished from the broader general welfare concept used to sustain other uses and transfers of condemned property. With this qualification, there does not appear to be a great potential for changing the use of such lands, even if this were a key objective, which in most instances it is not.

However, the authorization still allows the use of this tool for financing open space by tax increment financing. It is becoming increasingly popular in California. Under this approach, if major undeveloped areas on the coastline were declared redevelopment areas, any increase in taxation arising from a rise in assessed valuation after the actuating date could be pledged to retire bonds floated to acquire key open lands. It is suggested that this approach might be widely used in areas where some development is acceptable but when the development could have an adverse impact on its surroundings. It would be fitting for such improvements to provide the resources to ameliorate their own impact.

APPENDIX: Survey and Analysis of Existing Environmental Conditions

INTRODUCTION AND SUMMARY OF METHOD

This appendix deals with the opportunities for, and the constraints to, man's use of the physical resources of the coastal areas of Sonoma, Marin, San Francisco and San Mateo Counties. Included are descriptions of the data collected, the maps prepared, the analyses conducted and the method used to determine these opportunities and constraints. Combined with responses from the public and from the various ABAG committees, the regional coastal resource itself, as described in the data collection and analysis, provided the basis for the preparation of the hierarchy of regional coastal policies, ranging from the regional coastal policies to the specific locational policies and the review criteria.



Within the limitations of the study, data available through April, 1972 reflecting the diversity of coastal resources was assembled and committed to a series of maps available through the Association of Bay Area Governments.

Due to the very short duration of this study and the regional context within which the issues and data were analyzed, certain adjustments were made in the data collection and analysis. For example, certain ownerships or existing state of development in some portions of the coastal area represent constraints that cannot be reversed within the foreseeable future. These were subject to less-detailed analysis so that key issues might be addressed more fully. As an illustration, Point Reyes National Seashore is an exclusive responsibility of the Federal government, and so the data collection and

analysis was not conducted in the same depth as for private land holdings subject to development pressure. Similarly, less analysis has been performed in urbanized areas, and more attention directed to outlying areas where preservation and proper utilization of major open space resources are still possible.

Information from these work maps, as appropriate, was transferred to a series of Conservation and Development Opportunities and Constraints (CDOC)maps, all reproducible and at a scale of 1:62,500, as follows: Wildlife Habitat, Recreation Resources, Agricultural Resources, Environmental Hazards to Public Safety.

Selected information from the CDOC series, based upon the criteria in the regional coastal policies and the analysis of the physical coastal resources, was used in the preparation of the Values and Constraints map in Chapter III of this report.

BASIC DATA MAPPING

Map	Scale
Visual Resources	1:24,000
Ocean Coastal Marine Resources	1:62,500
Scientific and Educational Study Areas	1:62,500
Acknowledged Recreation Resources	1:62,500
Climate and Agricultural Soils	1:62,500
Vegetation and Grazing Soils	1:62,500
Slope	1:62,500
Seismic Response	1:62,500
Earth Stability and Flood Hazard	1:62,500
Known Problem Soils	1:125,000
Seismic Sea Wave Hazard	1:125,000
Land Use	1:62,500
Infrastructure	1:62,500
Land Use Controls	1:62,500

For each of the basic data maps there is a brief description of the data input and references for the sources of each data type. It should be noted that data for this study was collected and analyzed during the period January through April, 1972.

Visual Resources

Several analyses were made by the consultants to determine the presence of ocean-related views and the nature of these views. Three distinctive situations were considered: views from the major roadways adjoining the coast; views from significant viewing locations such as public parks and beaches; and views from lands within the coastal planning area.

Views from the roadway were documented in the field by use of recording sheets employing the following notations:

Position. The view position was recorded as to the general vertical and horizontal distance from the coastline.

Extent of View. Three categories—immediate (less than 300 feet), intermediate (300 feet to approximately 2,500 feet), and distant (beyond 2,500 feet)—were used.

Type of View. The presence of panoramic, local or glimpsed views or absences of views.

Character of View. The character of the view, both to the coastal side and upland side was recorded noting whether the respective areas were in a natural state (either forested, grassland, brush, or special category such as marsh), under cultivation or in an urbanized or semi-urbanized state.

View Components. Key elements composing the view such as beaches, trees, dunes, marine facilities, residences, etc. were noted.

Overall Rating. Finally an overall ranking employing four values – excellent, good, fair and poor – was assigned.

The notations on the field sheets were supplemented by color 35mm slides and tape-recorded commentaries, and the information transferred to U. S. Geological Survey maps. On the same sheets, land areas from which coastal views are present were also mapped to provide a composite documentation of major coastal-related views.

Ocean Coastal Marine Resources

This mapping includes coastal bathymetry and eight coastal wildlife habitat types. The numbers following each of the data types indicates the specific reference, agency, or individual from which the information was derived.

Beaches, sand dunes, and spits (4, 5)
Mudflats (4, 5)
Salt Marshes (4, 5)
Freshwater Marshes (2, 4, 5)
Estuaries and Lagoons (2, 4, 5, 6)
Major Rocky Intertidal Areas (1, 3, 5, 7)
Shellfish Culture Areas (7)
Anadromous Fishes Spawning Grounds (7)
Bathymetry (5)

Publications

1. Hedgpeth, Joel W., ***Seashore Life of the San Francisco Bay Region and the Coast of Northern California.*** University of California Press. Berkeley. 1970

2. State of California, Resources Agency. ***Protected Waterways Plan.*** 1971.

3. State of California, Resources Agency, Department of Fish and Game. ***A Summary of the Marine Environment from Fort Ross, Sonoma County to Point Lobos, Monterey County.*** 1968.

4. State of California, Resources Agency, Department of Navigation and Ocean Development, Comprehensive Ocean Area Plan. ***General Inventory, Land Use-Site Characteristics.*** 1971.

5. United States, Department of the Interior, Geological Survey. Miscellaneous 7.5 Minute Series (Topographic) Quadrangles for the study area.

Personal Communications

6. Gregg, Harold. Marin Conservation League, San Rafael, California. January 1972.

7. Smith, Emil. State of California, Resources Agency, Department of Fish and Game. January, 1972.

Scientific and Educational Study Areas

This data collection includes all known existing scientific and educational uses and proposals for use by public agencies, institutions and responsible persons in the scientific and educational communities for setting aside areas of wildlife habitat or unique natural features for protection and study. The numbers following each of the data types indicate the specific reference, agency or individual from which the information was derived.

Areas designated by the California Natural Areas Coordinating Committee as important scientific and education areas (6)

Unusual or unique geological features designated by the U. S. Department of the Interior, Geological Survey (5)

Proposed marine biological reserves and areas needed within the next 15 years for educational purposes as designated by California colleges and universities (1, 2)

Public and private areas presently available to California colleges and universities for educational use (1)

Marine reserves and other existing preserved marine habitat lands (excluding public park lands) (4, 7)

Candidate bays and estuaries for marine reserve status as designated by the State of California, Department of Fish and Game (1)

Proposals for coastal landscape preservation by the State of California, Department of Parks and Recreation (3)

Areas now used for educational purposes, but not presently included in formal proposals for preservation (4, 7)

Wildlife waterways as identified by the State of California, Resources Agency (2)

Publications

1. Rechnitzer, Andreas B., ***Marine Sciences in California Institutions of Higher Education.*** State of California, Coordinating Council for Higher Education. Report No. 1037. 1969.

2. State of California, Resources Agency, ***Protected Waterways Plan.*** 1971.

3. State of California, Resources Agency, Department of Parks and Recreation, ***California Coastline Preservation and Recreation Plan.*** 1971.

Personal Communications

4. Arkley, Dr. Rodney, University of California, Berkeley, February, 1972.

5. Gulliver, Rachel. Research Assistant, United States Department of the Interior, Geological Survey. January, 1972.

6. Hood, Leslie, Director, California Natural Area Coordinating Committee. January, 1972.

7. Smith, Edmund, Director, Pacific Marine Station, University of the Pacific. January, 1972.

Acknowledged Recreation Resources

All areas of known public ownership that have possible recreation value were mapped even though not all are presently in recreational use. All streams that have potential for canoeing or steelhead or salmon spawning are shown. Recreation resource areas identified by the various Federal, State and local agencies concerned with recreation (as evidenced by proposals for public acquisition for recreational or landscape preservation purposes) were included.

Publications

County of Marin, Planning Department, ***Marin County Parks and Recreation Plan 1990.*** 1965.

County of San Mateo, Regional Planning Committee, ***Parks and Open Space: A Program for San Mateo County.*** June, 1968.

———, Ways and Means Committee of the Regional Planning Committee, ***Parks and Open Space: Financing the Plan.*** January, 1971.

State of California, Resources Agency, ***California Protected Waterways Plan.*** February, 1971.

——— , Department of Fish and Game, ***California Fish and Wildlife Plan.*** 1966.

———, Department of Parks and Recreation, ***California Coastline Preservation and Recreation Plan.*** June, 1971.

Troost, Carl, Editor, "Canoeing, Kayaking and Rafting in California", in ***California Protected Waterways Plan,*** State of California, Resources Agency. February, 1971.

Personal Communication

Vail, Wesley, County of Sonoma, Planning Department. January, 1972.

Climate and Agricultural Soils

Recently-completed plantclimate information was used to determine the inland extent of the climate zone most frequently identified as necessary to the economic production of coastal-dependent specialty vegetable crops. The soil survey for each county was reviewed to determine those soils most capable of producing good yields of these specialty crops—artichokes, broccoli, brussels sprouts and cauliflower. The best production areas for these crops in this region are in San Mateo County, have soils of the Tunitas - Lockwood and Watsonville - Elkhorn soil associations, and are within the Maritime plantclimate zone. These soil and climate conditions were compared to the remaining counties, and generally similar soil and climate conditions were selected for inclusion within the prime agricultural lands classification. The next - best areas for the production of these crops also have soils of the Tunitas-Lockwood and Watsonville-Elkhorn soil associations, but are in the Coastal plant-climate zone, just inland from the Maritime zone.

Publications

Association of Bay Area Governments, ***General Soil Map.*** 1966

———, ***Land Capability Classification*** (map). 1966.

United States, Department of Agriculture, Soil Conservation Service, ***Soil Survey, San Mateo Area, California.*** 1954.

———, ***A Supplement to Soil Survey, San Mateo Area, California.*** 1969.

———, ***Report for General Soil Map, Marin County, California.*** 1967.

Personal Communications

Gilbert, Dewayne E., Extension Bioclimatologist, Department of Agricultural Engineering, Agricultural Extension Service, University of California, Davis. Personal communication and working maps of plantclimates for Sonoma, Marin, San Francisco and San Mateo Counties. February, 1972.

Kimball, Marston H., Extension Bioclimatologist (retired), Agricultural Extension Service, University of California, Davis. January, 1972.

Miller, Vernon C., Soil Scientist, United States Department of Agriculture, Soil Conservation Service. Sonoma County. Personal communication and mimeographs of selected soil series descriptions. March, 1972.

Vegetation and Grazing Soils

Mapped soils information together with the county soil surveys were reviewed to determine those soils most suited to grazing operations. These were grouped as follows:

Best Grazing Soils

Pajaro Association (Sonoma, Marin)
Yorkville-Suther Association (Sonoma)
Pleasanton-Zamora Association (Marin)
Sweeney-Mindego Association (San Mateo)

Good Grazing Soils

Rohnerville-Kneeland Association (Sonoma, Marin)
Steinbeck-Los Osos Association (Sonoma, Marin)
Los Osos Association (Marin)
Santa Lucia Association (Marin)
Lobitos-Gazos Association (San Mateo)
Los Gatos-Hull Association (San Mateo)
Tierra-Colma Association (San Mateo)
Watsonville-Elkhorn Association (San Mateo)

Adequate Grazing Soils

Hugo-Laughlin- Josephine Association, Sonoma)
Miramar Association (Marin, San Mateo)
Laughlin-Parrish Association (Marin)
Miramar-Sheridan Association (San Mateo)

Soils Not Suitable for Grazing

Because of management constraints or general unsuitability for grazing, all other soil associations were included in this category.

Publications

Association of Bay Area Governments, ***General Soil Map.*** 1966.

——, ***Land Capability Classification*** (map). 1966.

United States, Department of Agriculture, Soil Conservation Service, ***Soil Survey, San Mateo Area, California.*** 1954.

——, ***A Supplement to Soil Survey, San Mateo Area, California.*** 1969.

——, ***Report for General Soil Map, Marin County, California.*** 1967.

Personal Communication

Miller, Vernon C., Soil Scientist, United States Department of Agriculture, Soil Conservation Service, Sonoma County. Personal communication and mimeographs of selected soil series descriptions. March, 1972.

As a refinement to the soils interpretations, vegetation data was also added to determine those suitable soils upon which grazing would be feasible without extensive range improvement. All areas of grasses were included.

Publications

County of San Mateo, Forest Resources Study Committee, ***Forest Resources of San Mateo County,*** Plate II, General Vegetative Types. 1971.

County of Sonoma, Planning Department, ***Spring, 1971 Land Use Overlay for 7½ Minute U.S.G.S. Orthophoto Quadrangle,*** various sheets for study area. Advance copies, subject to change. May, 1972.

United States, Department of the Interior, Geological Survey. Miscellaneous 7.5 Minute Series (Topographic) Quadrangles for the study area.

——, Menlo Park, California. Aerial color infrared transparencies taken in March and June, 1971.

Slope

Slope information is useful for broadly determining suitability of specific sites for various activities, as well as an important factor in the analysis of hazards to public safety that is detailed below. Preliminary slope information for the study area was available from the U. S. Geological Survey. From that information, maps delineating slope in six categories were prepared by the consultants: 0 - 5%, 5 - 15%, 15 - 30%, 30 - 50%, 50 - 70%, and over 70%. The United States Department of the Interior, Geological Survey, Topographic Division, in Menlo Park, California supplied advance copies of photo-mechanically-derived color separations of selected slope categories for this analysis.

Seismic Response

All of the geologic formations within the area studied are subject to seismic effects since they are generally adjacent to a major active fault and are therefore in close proximity to epicentral zones of strong earthquakes. Within this area physical resistance to seismic shaking is of greater importance than proximity to a fault trace or zone.

The formations, vibrating in response to an earthquake, are considered a hazard in two respects. The shaking may be transmitted to man-made structures, causing damage or failure, or landsliding may be induced on those sloping areas which are susceptible to failure. The latter areas are largely accounted for in the "critical formations at 30%+ slope" category on the Earth Stability and Flood Hazard map.

Based on available generalized information, three categories have been described: high, medium and low or unknown relative seismic response.

High Relative Response: "mud", "bay mud", "marine deposits: mud, gritty mud, silt and sand in Bodega Head quadrangle", older artificial fills, landslides.

Moderate Relative Response: alluvium, old alluvium, slope wash and debris, sand, sand dunes, beaches, older beaches, terrace deposits.

Low or Unknown Relative Response: all other formations.

The ranking was based on references by professional geologists to specific formations with known engineering properties. Therefore, many other formations not ranked as high or moderate may exhibit noteworthy seismic response. It was assumed that the formations noted in the literature are, however, the more commonly critical ones.

Publications

Rice, Salem J. and Rudolph G. Strand. ***Preliminary Report to Accompany Geologic and Slope Stability maps of the Tennessee Valley, Lucas Valley and North Coastal Areas.*** State of California, Division of Mines & Geology, San Francisco, California. 1971.

Schlocker, J., M. G. Bonilla and D. H. Radbruch. ***Geology of the San Francisco North Quadrangle, California.*** Misc. Geologic Investigations, Map 1 - 272, U. S. Department of Interior, Geological Survey, Menlo Park, California. 1958.

Earth Stability and Flood Hazard

This mapping included: known critical formations, landslides, known and estimated flood-prone areas and relative erosion susceptibility of coastal geologic formations.

Known Critical Formations and Landslides

A critical formation was defined as one which is known to be significantly susceptible to mass slope failure such as landsliding as a result of natural weathering and degrada-

tion. "Significantly susceptible" formations are those which exhibit low or moderate slope stability characteristics in terms of engineering properties or are known by field and map study to have failed in notable area-wide amounts.

Some of the important and/or larger of these formations are:

Landslides
Merced Formation
Monterey Shale (Marin County)
Purisima Formation
Santa Cruz Mudstone
Franciscan Melange or Sheared Franciscan

In reality, in all formations, some amount of slope failure is possible under a given set of conditions. Construction activities by man can significantly increase failure —particularly in the critical formations.

Publications

Blake, M. C., Judith Terry Smith, Carl M. Wentworth and Robert H. Wright. ***Preliminary Geologic Map of Western Sonoma County and Northernmost Marin County, California.*** Basic Data Contribution No. 12, United States Department of the Interior, Geological Survey, Menlo Park, California. 1971.

Bonilla, M. G. ***Preliminary Geologic Map of the San Francisco South Quadrangle and Part of the Hunter's Point Quadrangle, California*** (Misc. Field Studies Map MF-311) Basic Data Contribution No. 29, United States Department of the Interior, Geological Survey, Menlo Park, California. 1971.

Brabb, Earl E. ***Preliminary Geologic Map of the Central Santa Cruz Mountains, California.*** Basic Data Contribution No. 6, United States Department of the Interior, Geological Survey, Menlo Park, California. 1970.

Gluskoter, Harold T. ***Geology of a Portion of Western Marin County, California.*** Map Sheet 11, State of California, Division of Mines & Geology, San Francisco, California. 1969.

Huffman, Michael E. ***Preliminary Map - Landslides and Related Deposits, Russian River to Fort Ross.*** Advance information received prior to publication, incomplete and subject to change. State of California, Resources Agency, Department of Conservation, Division of Mines and Geology. March, 1972.

Rice, Salem J. and Rudolph G. Strand. ***Preliminary Report to Accompany Geologic and Slope Stability maps of the Tennessee Valley, Lucas Valley and North Coastal Areas.*** State of California, Division of Mines & Geology, San Francisco, California. 1971.

Schlocker, J., M. G. Bonilla and D. H. Radbruch. ***Geology of the San Francisco North Quadrangle, California.*** Misc. Geologic Investigations, Map 1-272, United States Department of the Interior, Geological Survey, Menlo Park, California. 1958.

Personal Communications

Brabb, Earl. United States Department of the Interior, Geological Survey, Menlo Park, California. March, 1972.

Cummings, Jon C., Professor and Chairman, Department of Geology, California State College, Hayward, California. 1970.

Rice, Salem J., State of California, Division of Mines and Geology, San Francisco, California. 1972.

Wentworth, Carl. United States Department of the Interior, Geological Survey. January and March, 1972.

Known Flood Prone Areas

Known flood prone areas were derived from published sources. These were assumed based on known storm-flood records or "project storm" figures. The minimum watershed area for which flood prone areas were recorded is 25 square miles in urban areas and 250 square miles in rural areas.

Publications

United States Army Engineer District, San Francisco, California, Corps of Engineers. ***Report on Floods of December, 1964 in Northern California Coastal Streams.*** Volume III. December, 1965.

United States, Department of the Interior, Geological Survey, San Francisco Bay Region Environment and Resources Planning Study, ***Flood-Prone Areas Between Point Reyes Station and Bolinas, Marin County, California.*** Basic Data Contribution 19. 1971.

———, ***Flood-Prone Areas of Coastal San Mateo County, California.*** Basic Data Contribution 20. 1971.

Estimated Flood Prone Areas

Where map data on inland flooding in such larger watersheds did not extend westerly to the coastal outlet of major streams, an estimation was made based on location of alluvial deposits and study of topographic information.

In the case of smaller watersheds only flat (0-5%) areas of alluvium (from geology map) are shown. It was assumed that these are potential flood areas since all alluvium must be water-borne. The evidence was sufficient to assume this to be the case until more detailed information can prove otherwise.

Where such alluvial deposits meet a flat terrace deposit, it is probable that flooding has occurred or can take place even though not enough alluvium exists to be recorded on the geologist's map. Therefore, an estimated area of appropriate width was

shown along the stream channel to indicate a potential flood area. Here again evidence was sufficient to assume this to be the case until more specific study can prove otherwise.

Publications

Blake, M. C., Judith Terry Smith, Carl M. Wentworth and Robert H. Wright. ***Preliminary Geologic Map of Western Sonoma County and Northernmost Marin County, California,*** Basic Data Contribution No. 12, United States Department of Interior, Geological Survey, Menlo Park, California.1971.

Bonilla, M. G. ***Preliminary Geologic Map of the San Francisco South Quadrangle and Part of the Hunter's Point Quadrangle, California*** (Misc. Field Studies Map MF-311). Basic Data Contribution No. 29, United States Department of Interior, Geological Survey, Menlo Park, California. 1971.

Brabb, Earl E. ***Preliminary Geologic Map of the Central Santa Cruz Mountains, California.*** Basic Data Contribution No. 6, United States Department of Interior, Geological Survey, Menlo Park, California. 1970.

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Relative Erosion Susceptibility of Coastal Geologic Formations

This mapping was based upon interpretations of generalized mapped geologic formations and conceptual models under development by researchers at the U. S. Geological Survey. Their studies are limited to a theoretical estimation of susceptibility of individual formations to erosion and not to erosion rates. The concept centers on the inherent erosion resistance of the formation and the presence of related theoretically static protective elements which could condition wave impact, such as shallow foreshores and rocky tidepool areas.

Sand budget, the critical element in determining cliff retreat rate, is not included. Appropriate data was not available and the budget might be considerably altered by land uses within any watershed. Since the nature of such land use changes may not be predictable, policies based on this classification system should include appropriate information as the changes occur, specifying how they might alter the sand budget, and therefore indirectly the rate of cliff retreat.

Erosion susceptibility was ranked and mapped according to the following sets of conditions:

High Susceptibility to Coastal Erosion:

Landslides and other slope failures

Weak formations—unprotected
Weak formations—protected, but at an active fault
Moderately resistant formations, unprotected at an active fault

Moderate Susceptibility to Coastal Erosion:

Weak formations— protected
Moderately resistant formations—protected, but at an active fault
Moderately resistant and resistant formations—unprotected
Resistant formations—unprotected at an active fault

Low Susceptibility to Coastal Erosion:

Moderately resistant and resistant formations—protected

Erosion resistance of geologic formations used in the erosion susceptibility rankings above are as follows:

Weak Formations: Franciscan melange and Sheared Franciscan sandstone, the Merced and Purisima Formations, areas of landslides and other slope failures, alluvium, slope wash, terrace deposits and sand dunes

Moderately Resistant Formations: all formations not considered "Weak" or "Resistant"

Resistant Formations: formations that consist largely of chert, granite, limestone or similar rocks

Publications

Blake, M. C., Judith Terry Smith, Carl M. Wentworth and Robert H. Wright. ***Preliminary Geologic Map of Western Sonoma County and Northernmost Marin County, California,*** Basic Data Contribution No. 12, United States Department of Interior, Geological Survey, Menlo Park, California. 1971.

Bonilla, M. G. ***Preliminary Geologic Map of the San Francisco South Quadrangle and Part of the Hunter's Point Quadrangle, California*** (Misc. Field Studies Map MF-311). Basic Data Contribution No. 29, United States Department of Interior Geological Survey, Menlo Park, California. 1971.

Brabb, Earl E. ***Preliminary Geologic Map of the Central Santa Cruz Mountains, California.*** Basic Data Contribution No. 6, United States Department of Interior Geological Survey, Menlo Park, California. 1970.

Gluskoter, Harold T. ***Geology of a Portion of Western Marin County, California,*** Map Sheet 11, State of California, Division of Mines & Geology, San Francisco, California. 1969.

Schlocker, J., M. G. Bonilla and D.H. Radbruch. ***Geology of the San Francisco North Quadrangle, California,*** Misc. Geologic Investigations, Map 1-272, United States Department of Interior Geological Survey, Menlo Park, California. 1958.

Personal Communications

Lajoie, Kenneth. United States Department of the Interior, Geological Survey, Menlo Park, California. January and February, 1972.

Lajoie, Kenneth and John Tinsley. United States Department of the Interior, Geological Survey. March, 1972.

Known Problem Soils

In spite of the generality of the soil mapping upon which this interpretation was based, it appears possible to select zones in which soil characteristics represent an unusual hazard and/or significant economic constraint to structural development or appear particularly susceptible to damage from physical impacts. These interpretations were derived from the individual county soil reports from the Soil Conservation Service, backed by the consultant's knowledge of specific field situations, and mapped at the soil association level.

In general, it was assumed that all soils on slopes 30% or greater represent at least a moderate erosion hazard and therefore a significant, though not absolute, economic as well as environmental constraint to construction. The known problems soils were categorized as follows:

Extreme soil problems: these include steep eroded loams over dense clay subsoils and terrace escarpments, which are associated with landsliding and therefore represent the most significant soils constraint.

High soil problems: these include soils with an unusually high erosion potential, and are areas that should be subject to policies designed to minimize these effects should construction be allowed.

Medium soil problems: these are very poorly-drained soils or soils having a very high potential for wind erosion. Both of these situations suggest delicate ecological balances as well as economic constraints to construction.

Low soil problems: all others.

Publications

Association of Bay Area Governments, *General Soil Map.* 1966.

United States, Department of Agriculture, Soil Conservation Service, *Soil Survey, San Mateo Area, California.* 1954.

———, *A Supplement to Soil Survey, San Mateo Area, California.* 1969.

———, *Report for General Soil Map, Marin County, California.* 1966.

———, *Report for General Soil Map, San Francisco County, California.* 1966.

———, *Report for General Soil Map, Sonoma County, California.* 1966.

Seismic Sea Wave Hazard

This mapping indicates those coastal sections within which seismic sea waves could be expected to encroach inland. The distance and configuration of runup are not shown. The mapping was based on information derived from a study then underway by scientists at the U. S. Geological Survey. In that study, the following criteria were used:

A 20-foot runup line was assumed; the 20 foot elevation from the Geological Survey's 7.5 Minute, 1:24,000 scale Quadrangles was delineated as the potential runup line along open coastline; this runup assumption has been modified as local bathymetric conditions would affect wave energy; all possible oceanward directions of wave arrival were assumed; depth of inundation was not shown or estimated.

Publications

Ritter, John R. and William R. Dupre, ***Maps Showing Areas of Potential Inundation by Tsunamis in the San Francisco Bay Region,*** California, advance information received prior to publication and subject to change. United States Department of Interior, Geological Survey, Menlo Park, California.

Land Use

Existing land use patterns have been determined through collection of information provided by various public agencies.

Publications

Association of Bay Area Governments, ***Preliminary Regional Plan Report,*** Land Use, 1965 (map). 1966.

———, ***Ocean Coastline Study,*** Map 5: Land Use, 1965. 1970.

County of San Mateo, Planning Commission, land use map (untitled, undated, 1" = 5,000').

County of Sonoma, Planning Department, ***Spring 1971 Land Use Overlay for 7½ Minute U.S.G.S. Orthophoto Quadrangle,*** advance copies, subject to change. May, 1972.

State of California, Resources Agency, Department of Navigation and Ocean Development, Comprehensive Ocean Area Plan. ***General Inventory, Land Use-Site Characteristics.*** 1971.

Infrastructure

Information regarding the jurisdictions and facilities of the numerous sewer and water districts, as well as the locations of existing and proposed roads and highways was collected and mapped.

Publications

County of San Mateo, ***Map of Sanitary Sewerage Service Areas and Existing Facilities*** (1" =5,000'). 1970.

City and County of San Francisco, Department of Public Works, Bureau of Engineering, sewer services map (untitled). 1970.

City and County of San Francisco, Water Department, ***Diagram of System.*** Undated.

Coastside County Water District, District Boundary and Service Area Map. 1972.

Daly City, service area boundary and District Boundary (sewer service). undated.

Daly City, Municipal Water System and Dimond Public Utility District, ***Water System Map,*** 1" = 500', 1970.

Frahm, Edler & Associates, ***Half Moon Bay Basin Water Pollution Control Study,*** Figures I and II.

North Coast County Water District, Boundary Map, with water system added. February, 1972.

State of California, Business and Transportation Agency, Department of Public Works, Division of Highways, ***State Highway Map,*** 1971.

———, District IV, miscellaneous Route Adoption Maps for proposed State Highways.

United States Department of the Interior. Geological Survey, ***Map Showing Areas Serviced by Municipal and Private Sewerage Agencies, San Francisco Bay Region, 1970.***

———, ***Map Showing Areas Serviced by Municipal and Private Water-Distribution Agencies, San Francisco Bay Region, 1970.***

Personal Communications

City of Pacifica, Personal Communication and map of proposed construction of sewerage facilities. March, 1972.

Coast Springs Water Company, Personal Communication and map of services. March, 1972.

County of San Mateo, personal communication and work map showing water districts and service area (1" = 5,000'). February, 1972.

County of Sonoma, personal communication with water district and water company boundaries (approximate) map, 1:125,000. March, 1972.

Duck Cove Water Company, Personal Communication, February, 1972.

Jenner Water System, Personal Communication and map of services. March, 1972.

Marin Municipal Water District, Personal Communication and map of District. March, 1972.

Olema Water System, Personal Communication and map of system. March, 1972.

Land Use Controls

Zoning and agricultural preserve (Land Conservation Act of 1965) lands information was made available by the County Planning departments. All of the counties involved in this study maintain zoning classification systems, but the differences among the ordinances proved significant. A working classification was prepared to assist the consultants in comparing the implications of current zoning for the coastal area. This was based upon the intent, expressed and implied, of the individual zoning categories and their respective definitions.

Publications

City of Half Moon Bay, ***Zoning Plan Map,*** undated.

City of Pacifica, ***Municipal Code,*** Chapter 4, Title 9, Zoning (includes maps). undated.

County of Marin, Planning Department, ***Marin County Agricultural Preserves*** (map, 1:48,000). April, 1970.

County of Marin, Planning Department, zoning maps for: Bolinas, Dillon Beach, Inverness, Marshall, Muir Beach, Nicasio, Olema, Point Reyes Station and Inverness Park, San Geronimo Valley, Stinson Beach and Tomales (1" = 300').

County of San Mateo, ***Agricultural Preserves*** (map, 1" = 5000") 1971-1972.

County of Sonoma, Planning Department, ***Agricultural Preserves*** (map), April, 1971.

——, miscellaneous ***Composite Zoning Maps*** for south Sonoma County coastal area. 1972.

Personal Communication

County of San Mateo, Planning Commission. Personal communication and work map of zoning, 1" = 5,000'. February, 1972.

CONSERVATION AND DEVELOPMENT OPPORTUNITIES AND CONSTRAINTS

Pertinent and selected information from the thematic work maps described above was compiled into the following Conservation and Development Opportunities and Constraints (CDOC) map series:

Wildlife Habitats
Recreation Resources
Agricultural Resources
Environmental Hazards to Public Safety

The data selected and the method of determination for each of the CDOC maps are described in the sections that follow.

Wildlife Habitats

Three zones are mapped: 1) marine and coastal wildlife habitats, 2)primary habitat impact areas, and 3) secondary habitat impact areas.

Zone 1- Wildlife Habitats

Included in this zone are important coastal bays and estuaries, mudflats, shellfish beds, salt and fresh water marshes, major rocky intertidal areas, beaches, sand dunes, sand spits and important steelhead and salmon spawning streams, as shown on the Ocean Coastal Marine Resource work map, as well as on the work map, Scientific and Educational Study Areas.

Zone II - Primary Impact Areas

The primary impact areas identified are associated with the various water-related coastal resources. The health or quality of these resources is specifically dependent upon the land use and management activities employed within the watersheds—a watershed being all the land area which drains into a stream or estuary. Within each watershed, some lands are more critical, or can, if improperly managed, contribute to significant degradation of the marine resource quality. Two types of land areas were identified: 1) steep slopes immediately adjacent to the designated resource, and 2) flat valley areas having high water tables.

Steep slopes (30% or greater) adjacent to stream channels are critical for the maintenance of natural erosion and siltation processes. Poor agricultural practices, removal of vegetation, or disruption of soil mantle in such areas can accelerate soil erosion and increase siltation in the stream or estuary. Significant increases can lead to the destruction of spawning areas for fish and shellfish beds for oysters.

Flat valley areas immediately adjacent to estuaries or streams, especially those with high water tables, are important for the maintenance of water quality essential to the protection of marine habitats. Critical physical attributes are salinity, temperature and discharge. These can be easily affected by land uses in the flat valley areas which involve chemical application, waste discharges, water extraction (either from wells or the resource itself), etc. thus suggesting the need for precise impact management policies.

Zone III - Secondary Impact Areas

Two secondary impact areas were identified 1) areas associated with marine or water-related habitats, and 2) areas important for the protection of beaches and sand dunes.

Entire watersheds were identified as the secondary impact zone for the marine habitats. While Zone II represents critical impact areas, land use impacts on any of the lands draining to the resource will affect its quality. The watershed is an important impact zone because of the role that the hydrological system plays as agent for transport of pollutants or increased sediment loads from the area of change to the marine habitat.

An offshore area to the 10 fathom line was identified as an impact zone important for the protection of beaches. This is the maximum depth generally associated with littoral drift (the longshore transport of sand). The sand supply for beaches is derived from many sources, including stream sediment from erosion processes in the upland watersheds and coastal cliff erosion, and is carried by littoral movement, so man-made facilities within this zone frequently have had far-reaching effects. In many instances, the construction of breakwaters, groins, etc. has resulted in the disappearance of beaches due to the blocking of sand transport along the coast.

Recreation Resources

All recreation resources shown on the Acknowledged Recreation Resources data map were included, as well as areas identified by the consultants as having significant and vulnerable visual attributes or valuable landscape characteristics that appeared to be of regional public importance for recreational purposes.

Agricultural Resources

All areas identified on the Climate and Agricultural Soils data map as suitable for production of coastal-dependent specialty vegetable crops and areas shown on the Vegetation and Grazing Soils data map as suitable for grazing.

Environmental Hazards to Public Safety

This is a generalized and interpretive composite of slope, seismic response, earth stability and flood hazard, known problem soils and seismic sea wave hazard.

Much of the information included in the work maps is incomplete due to insufficient data availability. Thus, while this hazard determination was sufficiently precise for the establishment of regional policy zones, further, more detailed studies may reveal small areas within these policy zones of lesser or greater hazard potential.

The mapping was based on a threshold approach, wherein the presence of any one of the conditions of the following sets was considered sufficient to warrant inclusion of a given area in that category.

Severe Relative Hazard

Major landslides, slumps and other slope failures
Known critical formations, greater than 30% slope
Known active fault trace or zone
High relative seismic response
Known flood prone areas
High susceptibility to coastal erosion
Extreme soil problem areas

High Relative Hazard

Known critical formations at less than 30% slope
Other formations at greater than 30% slope
Moderate relative seismic response
Estimated flood prone areas
Moderate susceptibility to coastal erosion
High soil problem areas

Moderate Relative Hazard

Moderate soil problem areas
Other 5% to 30% slopes not included above

Low Relative Hazard

Other 0% to 5% slopes not included above

OPEN SPACE VALUES AND CONSTRAINTS

To determine the areas having the highest open space value and most severe hazards to public safety, selected information from the Conservation and Development Opportunities and Constraints map series was combined into the Open Space Values and Constraints map in Chapter III of this report. Following is a list of information selected from the CDOC map series for inclusion in that map.

Wildlife Habitats
marine and coastal wildlife habitats
primary habitat impact areas

Recreation Resources
all areas mapped

Agricultural Resources
prime coastal-dependent agricultural lands
lands suitable for grazing

Environmental Hazards to Public Safety
Severe relative hazards

ACKNOWLEDGEMENT

To assist in preparation and review of this plan, ABAG assembled a Citizens Advisory Committee and a Technical Advisory Committee. The Citizens Advisory Committee included several hundred persons who participated in one or more of the many public meetings held during preparation of the plan. The Technical Advisory Committee included representatives from approximately 100 public agencies who were advised of the progress of the program and graciously responded with advice. In addition, many other citizens and organizations made significant contributions to this planning effort. They and the members of the two advisory committees are far too numerous to mention individually, but their initiative, involvement, assistance and continuing interest are gratefully acknowledged.

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About The Association

The Association of Bay Area Governments was created in January, 1961. It was founded in recognition of the fact that the physical, economic and social well-being of the entire region and its individual communities depends upon continuing, areawide cooperation and coordination of many policies, plans and services.

The primary function of the Association is to provide the framework for dealing with regional problems on a cooperative, coordinated basis. The Association provides the means by which strong, vital units of city and county government work together in solving regional problems and in formulating and implementing regional conservation and development policies.

Formal organization for the Association is provided by contractual agreement between the member cities and counties acting under the authority of the Joint Exercise of Powers Act of the State of California. Present membership includes seven counties and 85 cities representing collectively more than 96 per cent of the total Bay Area population.

The major goal of the Association is: to develop and implement policies which help local governments plan and act cohesively on issues of regional significance. The Association attempts to achieve this goal through four major strategies:

The identification and study of the problems, functions and services of the San Francisco Bay metropolitan area, and the making of appropriate policy or action recommendations.

The review of proposals for metropolitan or regional governmental functions and the development of appropriate policy or action recommendations.

The coordination of planning activities of local and regional agencies.

Such other metropolitan or regional functions as are determined by the Association to be appropriate for consideration.

The Association is currently active in the following fields: regional growth policy; land use and transportation planning; airport planning; water, sewer and drainage planning; open space and parks planning; ocean coastline planning; regional housing and community development planning; criminal justice planning; regional information systems; urban growth models; solid waste management; plan and project review.

The Association's Comprehensive Regional Planning Program is designed to: maintain and improve the Regional Plan; prepare related special-element plans; continue the planning process; provide technical services to local jurisdictions; develop implementation measures to guide the future growth and development of the region; and assist local planning agencies in the preparation and implementation of local plans. A full-time planning staff works in cooperation with city, county, state, federal, and other area-wide planning agencies to develop, coordinate, and implement regional plans and programs.

The Association's programs are financed by membership dues and special assessments and by grants in funds and services from other regional agencies and the state and federal governments.

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