San Francisco Bay Plan

San Francisco Bay Conservation and Development Commission

In memory of Senator J. Eugene McAteer, a leader in efforts to plan for the conservation of San Francisco Bay and the development of its shoreline.

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Tidal features, salt ponds, and other diked areas, derived from the EcoAtlas Version 1.0bc, 1996, San Francisco Estuary Institute.

STATE OF CALIFORNIA PETE WILSON, Governor

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To the People of the San Francisco Bay Region and
Friends of San Francisco Bay Everywhere:

The San Francisco Bay Plan was completed and adopted by the San Francisco Bay Conservation and Development Commission in 1968 and submitted to the California Legislature and Governor in January 1969. The Bay Plan was prepared by the Commission over a three-year period pursuant to the McAteer-Petris Act of 1965 which established the Commission as a temporary agency to prepare an enforceable plan to guide the future protection and use of San Francisco Bay and its shoreline. In 1969, the Legislature acted upon the Commission's recommendations in the Bay Plan and revised the McAteer-Petris Act by designating the Commission as the agency responsible for maintaining and carrying out the provisions of the Act and the Bay Plan for the protection of the Bay and its great natural resources and the development of the Bay and shoreline to their highest potential with a minimum of Bay fill.

The McAteer-Petris Act directs the Commission to exercise its authority to issue or deny permit applications for placing fill, extracting materials, or changing the use of any land, water, or structure within the area of its jurisdiction, in conformity with the provisions and policies of both the McAteer-Petris Act and the San Francisco Bay Plan. Thus the Commission is directed by the Act to carry out its regulatory process in accord with the Bay Plan policies and Bay Plan maps which guide the protection and development of the Bay and its marshes, managed wetlands, salt ponds, and shoreline.

To keep pace with changing conditions and to incorporate new information concerning the Bay, the McAteer-Petris Act specifies that the Commission may amend or make other changes to the Bay Plan provided the changes are consistent with provisions of the Act. The Act and the Commission's administrative regulations further specify that a Bay Plan amendment may be proposed by the Commission or any other person, and that a descriptive notice of the proposed amendment must be given in advance of a public hearing concerning the amendment, after which the Commission may vote whether or not to amend the Plan. An affirmative vote of two-thirds of the Commission members (18 members) is required under the Act to change the Bay Plan.

Since its adoption by the Commission in 1968, the Bay Plan has been amended periodically. The date of the most recent amendment adopted by the Commission is printed at the end of any amended policy section.

Robert R. Tufts
Chairman

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Part I
Summary

Introduction

San Francisco Bay is an irreplaceable gift of nature that man can either abuse and ultimately destroy—or improve and protect for future generations.

The Bay Plan presented in this report recognizes that the Bay is a single body of water, in which changes affecting one part may also affect other parts, and that only on a regional basis can the Bay be protected and enhanced.

The Bay can serve human needs to a much greater degree than it does today. The Bay can play an increasing role as a major world port. Around its shores, many job-producing new industries can be developed. And new parks, marinas, beaches, and fishing piers can provide close-to-home recreation for the Bay Area's increasing population.

But the Bay must be protected from needless and gradual destruction. The Bay should no longer be treated as ordinary real estate, available to be filled with sand or dirt to create new land. Rather, the Bay should be regarded as the most valuable natural asset of the entire Bay region, a body of water that benefits not only the residents of the Bay Area but of all California and indeed the nation.

Implementation of the Plan presented in this report will guarantee to future generations their rightful heritage from the present generation: San Francisco Bay maintained and enhanced as a magnificent body of water that helps sustain the economy of the western United States, provides great opportunities for recreation, moderates the climate, combats air pollution, nourishes fish and wildlife, affords scenic enjoyment, and in countless other ways helps to enrich man's life.

Foundations of the Bay Plan

The Bay Plan was prepared during three years of study and public deliberation by the members of the San Francisco Bay Conservation and Development Commission. This document presents the two essential parts of the Bay Plan: the *policies* to guide future uses of the Bay and shoreline, and the *maps* that apply these policies to the present Bay and shoreline.

In making its study of the Bay, the Commission had the help of numerous consultants and received extensive and invaluable aid from city, county, state, and federal agencies, and from specialists on university faculties and on the staffs of business organizations. In addition, the Commission was assisted by an Advisory Committee, whose 19 members contributed greatly in the review of the Commission's work.

The Commission's study resulted in the publication of 23 volumes of technical reports. Summaries of the studies are printed as a supplement to this Plan, and the detailed reports are available for reference in numerous public libraries and in the offices of the Commission.

Also printed as a supplement to the Plan is an analysis of the hazards of building on filled land (hazards during normal settling of fills and during earthquakes), and of the engineering steps necessary to reduce these risks to acceptable limits. This supplementary report was prepared by a Board of Consultants appointed by the Commission and consisting of some of the Bay Area's leading geologists, structural engineers, architects, and civil engineers specializing in soil mechanics.

Major Conclusions and Policies

From its studies of San Francisco Bay, the Commission has concluded that:

1. **The Bay**. The Bay is a single body of water, and a Bay Plan can be effectively carried out only on a regional basis.

2. **Uses of the Bay**. The most important uses of the Bay are those providing substantial public benefits and treating the Bay as a body of water, not as real estate.

3. **Uses of the Shoreline**. All desirable, high-priority uses of the Bay and shoreline can be fully accommodated without substantial Bay filling, and without loss of large natural resource areas. But shoreline areas suitable for priority uses—ports, water-related industry, airports, wildlife refuges, and water-related recreation—exist only in limited amount, and should be reserved for these purposes.

4. **Justifiable Filling**. Some Bay filling may be justified for purposes providing substantial public benefits if these same benefits could not be achieved equally well without filling. Substantial public benefits are provided by:

    a. Developing adequate port terminals, on a regional basis, to keep San Francisco Bay in the forefront of the world's great harbors during a period of rapid change in shipping technology.

    b. Developing adequate land for industries that require access to shipping channels for transportation of raw materials or manufactured products.

    c. Developing new recreational opportunities—shoreline parks, marinas, fishing piers, beaches, hiking and bicycling paths, and scenic drives.

    d. Developing expanded airport terminals and runways *if* regional studies demonstrate that there are no feasible sites for major airport development away from the Bay.

    e. Developing new freeway routes (with construction on pilings, not solid fill) *if* thorough study determines that no feasible alternatives are available.

    f. Developing new public access to the Bay and enhancing shoreline appearance—over and above that provided by other Bay Plan policies—through filling limited to Bay-related commercial recreation and public assembly.

5. **Effects of Bay Filling.** Bay filling should be limited to the purposes listed above, however, because any filling is harmful to the Bay, and thus to present and future generations of Bay Area residents. All Bay filling has one or more of the following harmful effects:

    a. Filling destroys the habitat of fish and wildlife. Future filling can disrupt the ecological balance in the Bay, which has already been damaged by past fills, and can endanger the very existence of some species of birds and fish. The Bay, including open water, mudflats, and marshlands, is a complex biological system, in which microorganisms, plants, fish, waterfowl, and shorebirds live in a delicate balance created by nature, and in which seemingly minor changes, such as a new fill or dredging project, may have far-reaching and sometimes highly destructive effects.

    b. Filling almost always increases the danger of water pollution by reducing the ability of the Bay to assimilate the increasing quantities of liquid wastes being poured into it. Filling reduces both the surface area of the Bay and the volume of water in the Bay; this reduces the ability of the Bay to maintain adequate levels of oxygen in its waters, and also reduces the strength of the tides necessary to flush wastes from the Bay.

    c. Filling reduces the air-conditioning effects of the Bay and increases the danger of air pollution in the Bay Area. Reducing the open water surface over which cool air can move in from the ocean will reduce the amount of this air reaching the Santa Clara Valley and the Carquinez Strait in the summer—and will increase the frequency and intensity of temperature-inversions, which trap air pollutants and thus cause an increase in smog in the Bay Area.

    d. Indiscriminate filling will diminish the scenic beauty of the Bay.

6. **Pressures to Fill.** As the Bay Area's population increases, pressures to fill the Bay for many purposes will increase. New flat land will be sought for many urban uses because most, if not all, of the flat land in communities bordering the Bay is already in use—for residences, businesses, industries, airports, roadways, etc. Past diking and filling of tidelands and marshlands has already reduced the size of the Bay from about 787 square miles in area to approximately 548. Although some of this diked land remains, at least temporarily, as salt ponds or managed wetlands, it has nevertheless been removed from the tides of the Bay. The Bay is particularly vulnerable to diking and filling for two reasons:

    a. The Bay is shallow. About two-thirds of it is less than 18 feet deep at low tide; in the South Bay and in San Pablo Bay, the depth of the water two or three miles offshore may, at low tide, be only five or six feet, or even less.

    b. Ownership of the Bay is divided. Private owners claim about 22 percent of the Bay (including extensive holdings in the South

Bay) as a result of sales by the state government 90 or more years ago. Cities and counties have received free grants of land from the state totaling about 23 percent of the Bay. The state now owns only about 50 percent of the Bay, and the federal government owns about 5 percent. The lands that are closest to shore, most shallow, and thus easiest to fill are held by either private owners or local governments that may wish to fill for various purposes irrespective of the effects of filling on the Bay as a whole.

7. **Water Quality.** San Francisco Bay receives wastes from many municipal, industrial, and agricultural sources. Because of the regulatory authority of the State Water Resources Control Board, the San Francisco Bay Regional Water Quality Control Board, the U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers, the Bay Plan does not deal extensively with the problems and means of pollution control. Nevertheless, the entire Bay Plan is founded on the belief that water quality in San Francisco Bay can and will be maintained at levels sufficiently high to protect the beneficial uses of the Bay.

8. **Fill Safety.** Virtually all fills in San Francisco Bay are placed on top of Bay mud. The construction of buildings on such fills creates a greater number of potential hazards to life and property, during normal settling and during earthquakes, than does construction on rock or on dense, hard soil deposits. Adequate design measures can be taken, however, to reduce these potential hazards to acceptable levels.

An Engineering Criteria Review Board, appointed by the Commission, consists of leading geologists, soils engineers, structural engineers, and architects. The Board reviews projects in pending permit applications for the purpose of evaluating the adequacy of safety provisions and proposed structural methods and specifications and, when necessary, makes recommendations for changes. This work complements the functions of local building and planning departments, none of which are presently staffed to provide soils inspections.

Major Plan Proposals

1. **Develop Maritime Ports.** Port expansion and development should be planned for Alameda, Benicia, Oakland, Redwood City, Richmond, San Francisco, and Selby.

2. **Deepen Shipping Channels.** Major shipping channels from the Golden Gate to the Delta, and to Oakland, Redwood City, Richmond, and San Francisco should be deepened if they limit marine terminal activity and are economically and environmentally acceptable.

3. **Develop and Preserve Land for Water-Related Industry.** Waterfront land now used by industries that require access to deep water shipping should be continued in this use, and sufficient additional waterfront acreage should be reserved for future water-related industry.

4. **Develop Waterfront Parks and Recreation Facilities.** New shoreline parks, beaches, marinas, fishing piers, scenic drives, and hiking or bicycling pathways should be provided in many areas. The Bay and its shoreline offer particularly important opportunities for recreational development in urban areas where large concentrations of people now live close to the water but are shut off from it. Highest priority should be given to recreational development in these areas, as an important means of helping immediately to relieve urban tensions.

5. **Expand Airport Facilities on Land.** Airports around the Bay serve the entire Bay Area, and future airport planning can be effective only on a regional basis. The Bay provides an open area for aircraft to take off and land without having to fly over densely populated areas, and this is an excellent use of the water. But terminals and other airport facilities should be on existing land wherever feasible. Future airport development should be based on a regional airport plan, which should be prepared as soon as possible by a governmental agency with regionwide responsibilities for transportation planning. Studies leading to this airport plan should evaluate all reasonable alternatives for meeting the Bay Area's growing need for aviation facilities, and should specifically evaluate the needs of commercial, military, and general (small plane) aviation. Airport expansion or construction on Bay fill should be permitted only if no feasible alternatives are available.

6. **Maintain Wildlife Areas in Diked Historic Baylands.** Prime wildlife refuges in diked-off areas around the Bay should be maintained and several major additions should be made to the existing refuge system.

7. **Encourage Private Shoreline Development.** Private investment in shoreline development should be vigorously encouraged. For example, shoreline areas can be developed in many places for attractive, water-oriented housing.

Carrying out the Bay Plan

1. **General.** As required by the McAteer-Petris Act, the San Francisco Bay Plan was submitted to the Legislature and the Governor of California in 1969. During the legislative session that year, revisions were enacted into the McAteer-Petris Act designating the San Francisco Bay Conservation and Development Commission as the permanent agency responsible for carrying out the Bay Plan. The 1969 revisions to the Act further specified the area and scope of the Commission's authority and established the permit system for the regulation of the Bay and shoreline.

2. **Permits for Bay Filling and Dredging.** The Commission is empowered to grant or deny permits for all Bay filling or dredging in accordance with the provisions of the McAteer-Petris Act and the standards in the Bay Plan. Any public agency or owner of privately-owned Bay property is required to obtain a permit before proceeding with fill or dredging. (Although federal agencies would not legally be subject to the jurisdiction of the Commission, it is federal policy to conform generally to state laws and plans if they do not unduly interfere with national purposes or objectives, and federal cooperation in carrying out the Bay Plan should be sought and expected.) For purposes of this Plan, fill is defined to include earth or any other substance or material placed in the Bay, including piers, pilings, and floating structures moored in the Bay for extended periods. Public hearings must be held on all permit applications except those of a minor nature.

3. **Permits for Shoreline Development.** The Commission has limited jurisdiction over development in shoreline areas. This is necessary: (1) to insure that prime shoreline sites are reserved for priority uses—ports, water-related industry, airports, wildlife refuges, and water-related recreation; (2) to insure that public access to the Bay is provided to the maximum extent feasible; (3) to insure that if any salt ponds or managed wetlands are proposed for development, consideration is given to public purchase and return of these areas to the Bay; or alternatively, that any development is in accordance with the guidelines recommended in the Bay Plan; (4) to insure that shoreline areas not needed for priority uses are developed in ways that do not preclude public access to the Bay; and (5) to encourage attractive design of shoreline development. The Commission's jurisdiction in shoreline areas, as defined in the McAteer-Petris Act, is limited to a band measured 100 feet landward of and parallel to the shoreline of the Bay.

Terms

As used in this Plan, ***San Francisco Bay*** means all the open water and slough areas from the Golden Gate and the southern end of the Bay to the eastern end of Suisun Bay and Montezuma Slough (a line between Stake Point and Simmons Point, extended northeasterly to the mouth of Marshall Cut), including submerged lands (which are always under water), tidelands (which are covered and uncovered by the daily tides), and marshlands (which are between mean high tide and five feet above mean sea level).

As used in this Plan, ***shoreline areas*** or ***shoreline lands*** are the uplands bordering the Bay.

As used in this Plan, ***salt ponds*** are areas diked off from the Bay and used for making salt by solar evaporation, and ***managed wetlands*** are marshes diked off from the Bay and managed as wildfowl habitat (generally under the ownership of duck-hunting clubs).

As used in this Plan, ***Commission*** and ***BCDC*** refer to the San Francisco Bay Conservation and Development Commission.

As used in this Plan, ***should*** is mandatory.

Conclusion

The Bay is a single physical mechanism in which actions affecting one part may also affect other parts. The Bay Plan provides a formula for developing the Bay and shoreline to their highest potential, while protecting the Bay as an irreplaceable natural resource.

The San Francisco Bay Conservation and Development Commission is the agency designated to carry out the Bay Plan.

Part II
Objectives

Objective 1

Protect the Bay as a great natural resource for the benefit of present and future generations.

Objective 2

Develop the Bay and its shoreline to their highest potential with a minimum of Bay filling.

Part III
The Bay as a Resource: Findings and Policies

Fish and Wildlife

Findings and Policies Concerning Fish and Wildlife in the Bay

Findings

a. San Francisco Bay is by far the largest estuary along California's long coastline. It is an essential resting place, feeding area, and wintering ground for millions of birds on the Pacific Flyway from Canada to Mexico. Nearly one hundred species of fish are also supported by the estuarine environment that includes marshlands, mudflats, salt production lands, and open water.

b. Human benefit from the fish and wildlife of the Bay includes food, economic gain, recreation, scientific research, education, and an environment for living. No comprehensive estimate of the value of fish and wildlife for these purposes is available, but such value can only increase unless man diminishes the Bay. In future decades the Bay may become of inestimable additional value as a fish and marine plant "farm," augmenting the nation's and the world's food resources for a rapidly-growing population.

c. Maintaining fish and wildlife depends upon availability of: (1) sufficient oxygen in the Bay waters; (2) adequate amounts of the proper foods; (3) sufficient shelter space; and (4) proper temperature, salt content, and velocity of the water. Requirements vary according to the species of fish and wildlife. Maintenance of these habitat requirements is essential to insure for present and future generations of Californians the benefit of fish and wildlife in the Bay. The key elements of the Bay fish and wildlife habitat are: marshes and mudflats; total water volume and total surface area of the Bay; good water circulation; and some fresh water inflow.

d. Plan Map No. 8, Natural Resources of the Bay, indicates the shoreline areas of greatest value for shorebirds and waterfowl. All parts of San Francisco Bay are assumed to be important for the perpetuation of fish and other marine life because any reduction of habitat reduces the marine population in some measure.

Policies

1. The benefits of fish and wildlife in the Bay should be insured for present and future generations of Californians. Therefore, to the greatest extent feasible, the remaining marshes and mudflats around the Bay, the remaining water volume and surface area of the Bay, and adequate fresh water inflow into the Bay should be maintained.

2. Specific habitats that are needed to prevent the extinction of any species, or to maintain or increase any species that would provide substantial public benefits, should be protected, whether in the Bay or on the shoreline behind dikes. Such areas on the shoreline are designated as Wildlife Areas on the Plan maps.

Water Quality

Findings and Policies Concerning Water Quality in the Bay

Findings

a. San Francisco Bay receives a variety of wastes from numerous sources throughout its tributary drainage area. These include industrial and municipal waste, urban and agricultural surface runoff, sedimentation from upland erosion, vessel wastes, oil and chemical spills, and leachate from landfills and toxic dumps. Pollution occurs when waste discharges unreasonably interfere with, damage, or destroy one or more of the beneficial uses of the waters of the Bay. Pollutants include substances that are toxic, that unduly stimulate organic growth in the Bay, or that deplete dissolved oxygen. Polluted waters may be offensive to the senses, unsafe for human contact or use, damaging or lethal to aquatic life, or unsuitable for industrial use.

b. Pollution from past waste discharges resulted in harm to fish and wildlife and the Bay's beneficial uses. Implementation of state and federal water pollution control programs by public agencies, particularly the U.S. Environmental Protection Agency, the State Water Resources Control Board, and the San Francisco Bay Regional Water Quality Control Board, have decreased significantly the pollutant levels in waste discharges to the Bay, resulting in dramatic improvements in the quality of Bay waters. However, water pollution still impairs Bay water quality and the beneficial uses of the Bay. Of particular concern is the potential for cumulative long-term effects on the Bay from toxic pollutants. Water quality varies significantly within the Bay due to the pattern of waste discharges and the varying capability of the Bay to disperse, flush, and assimilate pollutants. Certain localized areas are seriously polluted with toxic substances. Additionally, toxic disposal sites on the shoreline threaten both Bay water quality and the development and use of certain areas of the shoreline by the public.

c. Many strategies can be used to reduce the discharge of pollutants to the Bay, including: (1) assuring adequate treatment of wastes discharged to the Bay and its tributaries in compliance with standards set by the State Water Resources Control Board, San Francisco Bay Regional Water Quality Control Board, and the U.S. Environmental Protection Agency; (2) directing treated waste discharges to the ocean (after assuring that the marine environment will be protected); (3) eliminating discharge of toxic substances into the Bay; (4) cleaning up existing toxic sites in the Bay, on the shoreline, or in upland areas that drain into the Bay; and (5) preventing increased sedimentation of the Bay by controlling upland soil erosion, particularly during the land development process.

d. The harmful effects of pollutants reaching the Bay can be reduced by maximizing its capacity to assimilate, disperse, and flush pollutants. Key elements that affect the Bay's natural capacity to assimilate, disperse, and flush wastes are: (1) the volume and circulation of water flowing in and out with the tides and in fresh water inflow; (2) the rate of oxygen interchange at the surface of the Bay; and (3) the extent and distribution of tidal marshes.

e. The State Water Resources Control Board is responsible for formulating and adopting state policy for water quality control pursuant to the state Porter-Cologne Water Quality Control Act and federal Clean Water Act. The State Board is responsible for approving the water quality control plans of the nine regional water quality control boards, and establishing salinity standards for the Bay and Delta to protect the beneficial uses of these waters. The San Francisco Bay Regional Water Quality Control Board is charged with designating, protecting, and enhancing the beneficial uses of the waters of the San Francisco Bay Basin. The San Francisco Bay Regional Water Quality Control Board states the beneficial uses of the Bay waters and the water quality objectives and waste discharge standards in its Water Quality Control Plan, San Francisco Bay Basin, which it carries out through adoption and enforcement of waste discharge requirements and certification of Army Corps of Engineers' permits.

Policies

1. To the greatest extent feasible, the Bay marshes, mudflats, and water surface area and volume should be maintained and, whenever possible, increased. Fresh water inflow

into the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses. Bay water pollution should be avoided.

2. Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the San Francisco Bay Regional Water Quality Control Board's Basin Plan. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the San Francisco Bay Regional Water Quality Control Board, should be the basis for carrying out the Commission's water quality responsibilities.

3. Shoreline projects should be designed and constructed in a manner that reduces soil erosion and protects the Bay from increased sedimentation through the use of appropriate erosion control practices.

4. Polluted runoff from projects should be controlled by the use of best management practices in order to protect the water quality and beneficial uses of the Bay, especially where water dispersion is poor and near shellfish beds and other significant biotic resources. Whenever possible, runoff discharge points should be located where the discharge will have the least impact. Approval of projects involving shoreline areas polluted with hazardous substances should be conditioned so that they will not cause harm to the public or the beneficial uses of the Bay.

Amended March 1987

Water Surface Area and Volume

Findings and Policies Concerning Bay Water Surface Area and Volume

Findings

a. Dissolved oxygen is needed to support marine life and to help break down pollutants in the water. The amount of oxygen in the Bay is largely determined by the surface area of the Bay because primary sources of oxygen are: (1) churning waves that trap oxygen from the air; (2) the water surface, which absorbs oxygen from the air; and (3) the exposed mudflats, which both produce and absorb oxygen while the tide is out and transfer it to the water when the tide comes in.

b. Water circulation might be greatly improved by some of the major barrier proposals that have been made for the Bay. But barriers affect—for better or for worse—the appearance and ecology of the Bay, sedimentation, flood control, and existing and proposed uses of the shores of the Bay. They are also very costly. For all barrier proposals fully evaluated thus far, disadvantages outweigh advantages.

c. About 40 percent of the original surface area of the Bay has been diked off or filled in since 1850. Because this has involved some of the most effective oxygenation areas, the ability of the Bay to take up oxygen has been sharply reduced.

d. The dissolved oxygen that is absorbed at the Bay surface or from the mudflats must be transmitted to the deeper waters by mixing of the water. The necessary mixing is accomplished by tidal interchange, by fresh water inflow from tributaries, and by circulation resulting from wind action upon the surface of the Bay. The strength of tidal flow and water circulation are greatly affected by the shape of the Bay bottom and the shoreline; fills, dikes, and piers can speed or retard water circulation, depending upon both the water circulation pattern in the affected area and the shape of the fill, dike, or pier.

Policies

1. The surface area of the Bay and the total volume of water should be kept as large as possible in order to maximize active oxygen interchange, vigorous circulation, and effective tidal action. Filling and diking that reduce surface area and water volume should therefore

be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative.

2. Water circulation in the Bay should be maintained, and improved as much as possible. Any proposed fills, dikes, or piers should be thoroughly evaluated to determine their effects upon water circulation and then modified as necessary to improve circulation or at least to minimize any harmful effects.

3. Because further study is needed before any barrier proposal to improve water circulation can be considered acceptable, the Bay Plan does not include any barriers. Before any proposal for a barrier is adopted in the future, the Commission will be required to replan all of the affected shoreline and water area.

Marshes and Mudflats

Findings and Policies Concerning Marshes and Mudflats Around the Bay

Findings

a. Salt marshes are extraordinarily fertile. Living marsh plants fix the energy of sunlight into their tissues through photosynthesis, and expel oxygen into the surrounding environment. One type of marsh plant, cordgrass, has seven times the energy-generating capacity or food value of an equal acreage of wheat.

b. Large numbers of birds, including ducks and geese, come to the marshes to feed on the lush vegetation or on the brackish-water animals that thrive there. Their wastes, together with the decomposition products of plant decay and other elements of the complex food web, contribute nutrients from the marshes to the mudflats and the shallows of the Bay margin, supporting a vast marine life nursery.

c. Most marine life in the Bay either depends directly on the marshes and mudflats for its sustenance or indirectly depends upon them by feeding upon other marine life so nourished. Shorebirds depend upon the marshes and mudflats for both food and shelter.

d. Algae on the mudflats, exposed to abundant light alternating with abundant water, produce and expel oxygen into the water and into the air. This is an important source of oxygen that water must have both to support marine life and to combat water pollution.

e. The marshlands bordering the Bay now total about 75 square miles. In 1850, before diking and filling had been begun, marshlands covered some 300 square miles.

Policies

1. Marshes and mudflats should be maintained to the fullest possible extent to conserve fish and wildlife and to abate air and water pollution. Filling and diking that eliminate marshes and mudflats should therefore be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative. Marshes and mudflats are an integral part of the Bay tidal system and therefore should be protected in the same manner as open water areas.

2. Any proposed fills, dikes, or piers should be thoroughly evaluated to determine their effects on marshes and mudflats, and then modified as necessary to minimize any harmful effects.

3. To offset possible additional losses of marshes due to necessary filling and to augment the present marshes: (a) former marshes should be restored when possible through removal of existing dikes; (b) in areas selected on the basis of competent ecological study, some new marshes should be created through carefully placed lifts of dredged spoils; and (c) the quality of existing marshes should be improved by appropriate measures whenever possible.

Smog and Weather

Findings and Policies Concerning Effect of the Bay on Smog and Weather

Findings

a. The Bay plays a significant role in determining the climate of the Bay Area.

b. The waters of the Bay maintain a relatively constant temperature, and this helps to moderate extremes of heat and cold in surrounding areas. The Bay surface provides a cool pathway for summertime ocean winds, enabling them to help cool areas at the “ends” of the Bay (the Santa Clara Valley and the Carquinez Strait areas).

c. Present research indicates that filling a substantial part of the Bay—as much as 25 percent—would cause: (1) higher summertime temperatures and reduced rainfall in the Santa Clara Valley and the Carquinez Strait-Suisun Bay area; and (2) increases in the frequency and thickness of both fog and smog in the Bay Area. Converting Bay surface to land would increase smog-producing temperature inversions in the Bay Area; in addition, the new land would probably be used for smog-producing concentrations of urban developments, including automobiles.

Policies

1. To the greatest extent feasible, the remaining water volume and surface area of the Bay should be maintained.

Shell Deposits

Findings and Policies Concerning Shell Deposits in the Bay

Findings

a. Oyster shells are dredged from the Bay floor primarily for use as lime in the production of cement. A small portion of the shells are used as soil conditioner, as cattle feed, and as poultry grit by local poultry and egg producers.

b. The shell deposits are an important mineral resource because the other principal source of lime, limestone, is more distantly located in Santa Clara, Santa Cruz, and San Benito Counties to the south. Cement is expensive to transport over great distances, so a nearby source of lime is important to the Bay Area economy.

Policies

1. Filling or diking that adversely affect known shell deposits, illustrated in Plan Map No. 8, Natural Resources of the Bay, should be allowed only for purposes providing more public benefit than the availability of the shells.

Fresh Water Inflow

Findings and Policies Concerning Fresh Water Inflow into the Bay

Findings

a. Fresh water flowing into the Bay, most of which is from the Delta, dilutes the salt water of the ocean flowing into the Bay through the Golden Gate. The Bay waters thus provide a gradual change from the salt water of the ocean to the fresh water flows of the Sacramento and San Joaquin Rivers. This delicate relationship between fresh and salt water helps to determine the ability of the Bay to support a variety of aquatic life and wildlife in and around the Bay.

b. The gradual change in the salt content of the Bay appears necessary for the survival of anadromous fish such as king salmon, steelhead, striped bass, and American shad, as they progress upstream toward their spawning grounds, and for the survival of their fingerlings as they descend to salt water. An abrupt change in the salt content of Bay water would probably end the anadromous fish runs.

c. The fresh water flow from the Sacramento and San Joaquin Rivers is an important (but not major) source of the oxygen necessary in the waters of the Bay to support marine life and to abate pollution, and it assists in flushing parts of the Bay system, particularly during peak flows of the spring when the snows melt in the Sierra.

d. Fresh water flow into the Bay during the winter and spring months is of particular importance in maintaining the health of the Suisun Marsh, the largest remaining marsh around the Bay and a waterfowl habitat of nationwide importance.

e. The fresh water flows from the Sacramento and San Joaquin Rivers into the Delta and the Bay have been reduced in the past by diversions of federal, state, and local governments for agricultural, industrial, and domestic uses. Additional diversions are being sought, and further substantial diversions could change the salt content of Bay water and thereby adversely affect the ability of the Bay to support a great variety of aquatic life.

f. In periodically reviewing existing diversions under its reserved jurisdiction, the State Water Resources Control Board issued Decision

1485 and the Delta Plan in 1978. The Decision and the Delta Plan set water quality standards for the Delta and the Suisun Marsh and continued to reserve jurisdiction over salinity control, fish and wildlife resources and coordination of the federal and state water projects so that the standards can be reviewed periodically. The Delta Plan noted that the protection of historical levels of fish and wildlife resources (1922-1967) should be the standard for future water diversions. In addition, the Delta Plan recognized for the first time, the State Water Resources Control Board's statutory responsibility to set standards for San Francisco Bay to protect beneficial uses of the Bay. Although the Board did not establish standards for the Bay because of a lack of information, the Board directed that studies be conducted to develop that information, the Board also determined that alternative water supplies must be found for the Suisun Marsh and completed by 1984. Although the Decision and the Delta Plan have certain flaws, such as their use of "without project" conditions as a standard at this time, and their inability to stop the decline in the striped bass populations, the State Board has recognized the need to address these problems and has begun studies to that end. It is important that such studies be conducted expeditiously to preserve what remains of the fishery and to develop information about the Bay before vast sums of money are committed to water development projects that will reduce fresh water inflow to the Bay in the future.

Policies

1. Diversions of fresh water should not reduce the inflow into the Bay to the point of damaging the oxygen content of the Bay, the flushing of the Bay, or the ability of the Bay to support existing wildlife.

2. High priority should be given to the preservation of Suisun Marsh through adequate protective measures including maintenance of fresh water inflows.

3. The impact of diversions of fresh water inflow into the Bay should be monitored by the State Water Resources Control Board, which should set standards to restore historical levels (1922-1967) of fish and wildlife resources. The Bay Commission should cooperate with the State Board and others to ensure that adequate fresh water inflows to protect the Bay are made available.

Amended May 1982

Part IV
Development of the Bay and Shoreline: Findings and Policies

Safety of Fills

Findings and Policies Concerning Safety of Fills in the Bay

Findings

a. To reduce risk of life and damage to property, special consideration must be given to construction on filled lands in San Francisco Bay. (Similar hazards exist on the poor soils throughout the Bay Area, including soft natural soils, steep slopes, earthquake fault zones, and extensively graded areas.)

b. Virtually all fills in San Francisco Bay are placed on top of Bay mud. Under most of the Bay there is a deep, packed layer of old Bay mud. More recent deposits, called younger Bay mud, lie on top of the older muds. The top layer of young mud presents many engineering problems. The construction of a sound fill depends in part on the stability of the base upon which it is placed.

c. Safety of a fill also depends on the manner in which the filling is done, and the materials used for the fill. Similarly, safety of a structure on fill depends on the manner in which it is built and the materials used in its construction. Construction of a fill or building that will be safe enough for the intended use requires: (1) recognition and investigation of all potential hazards—including (a) settling of a fill or building over a long period of time, (b) ground failure caused by the manner of constructing the fill or by shaking during a major earthquake, and (c) height above high water level—and (2) construction of the filling or building in a manner specifically designed to minimize these hazards. While the construction of buildings on fills overlying Bay deposits involves a greater number of potential hazards than construction on rock or on dense hard soil deposits, adequate design measures can be taken to reduce the hazards to acceptable levels. Similarly, while the construction of a building on fill over the Bay or on the shoreline can involve tidal flooding risk because of extreme high water levels, storms, and rise in sea level, adequate project design measures can be taken to minimize the hazards to an acceptable risk.

d. There are no minimum construction codes regulating construction of fills on Bay mud because of the absence of sufficient data upon which to base such a code. Hazards vary with different geologic and foundation conditions, use of the fill, and the type of structures to be constructed on new fill areas. Therefore, the highest order of skilled judgment, utilizing the available knowledge of all affected disciplines, is required to: (1) recognize and investigate all potential hazards of constructing a fill; and (2) design the fill and any construction thereon to minimize these hazards.

e. In the absence of adequate fill construction standards or codes, the Commission appointed a Board of Consultants consisting of geologists, civil engineers specializing in soils engineering, structural engineers, and other specialists, to review, on the basis of available knowledge, all new fills that might be permitted in the Bay Plan, so that no fills would be included upon which construction might be unsafe. No specific fills are included in the Plan, but the Board of Consultants has completed an initial set of criteria (published separately as “Carrying Out the Bay Plan: The Safety of Fills”) as a guide to future consideration of specific fill proposals.

f. Flood damage to fills and shoreline areas can result from a combination of heavy rainfall, high tides, and winds blowing onshore. To prevent such damage, structures on fill or near the shoreline should be above the highest expected water level during the expected life of the project or should be protected for the expected life of the project by levees of an adequate height.

g. Bay water levels are likely to increase in the future because of a relative rise in sea level. Relative rise in sea level is the sum of: (1) a rise in global sea level and (2) land elevation change (lifting or subsidence) around the Bay.

If historic trends continue, global sea level should increase between four and five inches in the Bay in the next 50 years and could increase approximately one and one-half to five feet by the year 2100 depending on the rate of accelerated rise in sea level caused by the "greenhouse effect," the long-term warming of the earth's surface from heat radiated off the earth and trapped in the earth's atmosphere by gases released into the atmosphere. The warming would bring about an accelerated rise in sea level worldwide through thermal expansion of the upper layers of the oceans and melting of some of the earth's glaciers and polar ice packs. Land elevation change caused by tectonic (geologic including seismic) activity, consolidation or compaction of soft soils such as Bay muds, and extraction of subsurface groundwater or natural gas extraction, is variable around the Bay. Consequently, some parts of the Bay will experience a greater relative rise in sea level than other areas. For example, in Sausalito, the land area has been gradually lifting while in the South Bay excessive pumping from underground fresh water reservoirs has caused extensive subsidence of the ground surface in the San Jose area and as far north as Dumbarton Bridge. Indications are that if heavy groundwater pumping is continued indefinitely in the South Bay area, land in the Alviso area (which has already subsided about seven feet since 1912) could subside up to seven feet more; if this occurs, extensive levees may be needed to prevent inundation of low-lying areas by the extreme high water levels.

Policies

1. The Commission has appointed the Engineering Criteria Review Board consisting of geologists, civil engineers specializing in geotechnical and coastal engineering, structural engineers, and architects competent to and adequately empowered to: (a) establish and revise safety criteria for Bay fills and structures thereon; (b) review all except minor projects for the adequacy of their specific safety provisions, and make recommendations concerning these provisions; (c) prescribe an inspection system to assure placement of fill according to approved designs; and (d) gather, and make available, performance data developed from specific projects. These activities would complement the functions of local building departments and local planning departments, none of which are presently staffed to provide soils inspections.

2. Even if the Bay Plan indicates that a fill may be permissible, no fill or building should be constructed if hazards cannot be overcome adequately for the intended use in accordance with the criteria prescribed by the Engineering Criteria Review Board.

3. To provide vitally-needed information on the effects of earthquakes on all kinds of soils, installation of strong-motion seismographs should be required on all future major land fills. In addition, the Commission encourages installation of strong-motion seismographs in other developments on problem soils, and in other areas recommended by the U.S. Coast and Geodetic Survey, for purposes of data comparison and evaluation.

4. To prevent damage from flooding, structures on fill or near the shoreline should have adequate flood protection including consideration of future relative sea level rise as determined by competent engineers. As a general rule, structures on fill or near the shoreline should be above the wave runup level or sufficiently set back from the edge of the shore so that the structure is not subject to dynamic wave energy. In all cases, the bottom floor level of structures should be above the highest estimated tide elevation. Exceptions to the general height rule may be made for developments specifically designed to tolerate periodic flooding.

5. To minimize the potential hazard to Bay fill projects and bayside development from subsidence, all proposed developments should be sufficiently high above the highest estimated tide level for the expected life of the project or sufficiently protected by levees to allow for the effects of additional subsidence for the expected life of the project, utilizing the latest information available from the U.S. Geological Survey and the National Ocean Service.

Rights-of-way for levees protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional levee height so that no fill for levee widening is placed in the Bay.

6. Local governments and special districts with responsibilities for flood protection should assure that their requirements and criteria reflect future relative sea level rise and should assure that new structures and uses attracting people are not approved in flood prone areas or in areas that will become flood prone in the future, and that structures and uses that are approvable will be built at stable elevations to assure long-term protection from flood hazards.

Amended January 1989

Protection of the Shoreline

Findings and Policies Concerning Shoreline Protection Around the Bay

Findings

a. Erosion control projects are often needed to protect shoreline property and improvements from erosion. Because so much shoreline consists of soft, easily eroded soils, protective structures are usually required to stabilize and establish a permanent shoreline. These structures often require periodic maintenance and reconstruction.

b. Most erosion control projects involve some fill which can adversely affect natural resources such as water surface area and volume, tidal circulation, wildlife use, marshes, and mudflats.

c. Shoreline protection structures, such as riprap and sea walls, are most effective and less damaging to natural resources if they are the appropriate kind of structure for the project site and erosion problem, and are properly designed, constructed, and maintained. Because factors affecting erosion vary considerably, no single protective method or structure is appropriate in all situations. When a structure is not appropriate or improperly designed and constructed to meet the unique conditions of and the erosion forces at a project site, the structure is more likely to fail, require additional fill to repair, have higher long-term maintenance costs because of higher frequency of repair, and cause greater disturbance and displacement of the site's natural resources.

d. Nonstructural erosion control methods, such as marsh plantings, are typically effective only in areas experiencing mild erosion. However, in some instances, it may be possible to combine marsh restoration with structural approaches to control shoreline erosion, thereby minimizing the erosion control project's impact on natural resources.

e. Loose dirt, concrete slabs, asphalt, bricks, scrap wood and other kinds of debris, are generally ineffective in halting shoreline erosion and may lead to increased fill. Although providing some short-term shoreline protection, protective structures constructed of such debris materials typically fail rapidly in storm conditions because the material slides bayward or is washed offshore. Repairing these

ineffective structures requires additional material to be placed along the shoreline, leading to unnecessary fill and disturbance of natural resources.

Policies

1. New shoreline erosion control projects and the maintenance or reconstruction of existing erosion control facilities should be authorized if: (a) the project is necessary to protect the shoreline from erosion; (b) the type of the protective structure is appropriate for the project site and the erosion conditions at the site; and (c) the project is properly designed and constructed. Professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes, should participate in the design of erosion control projects.

2. Riprap revetments, the most common shoreline protective structure, should be constructed of properly sized and placed material that meet sound engineering criteria for durability, density, and porosity. Armor materials used in the revetment should be placed according to accepted engineering practice, and be free of extraneous material, such as debris and reinforcing steel. Generally, only engineered quarrystone or concrete pieces that have either been specially cast or carefully selected for size, density, durability, and freedom of extraneous materials from demolition debris will meet these requirements. Riprap revetments constructed out of other debris materials should not be authorized.

3. Authorized protective projects should be regularly maintained according to a long-term maintenance program to assure that the shoreline will be protected from tidal erosion and that the effects of the erosion control project on natural resources during the life of the project will be the minimum necessary.

4. Shoreline protective projects should include provisions for nonstructural methods such as marsh vegetation where feasible. Along shorelines that support marsh vegetation or where marsh establishment has a reasonable chance of success, the Commission should require that the design of authorized protective projects include provisions for establishing marsh and transitional upland vegetation as part of the protective structure, wherever practicable.

Adopted March 1989

Dredging

Findings and Policies Concerning Dredging in the Bay

Findings

a. Much of the Bay bottom is shallow. It averages 20 feet in depth, and the bottom is covered with accumulated sediment—silt, sand, and clay sediment is carried into the Bay annually in tributary waterway flows, most of it settling to the Bay bottom. In addition, over 100 million cubic yards of sediment—inflowing and resuspended—lodges in harbors and navigable channels from which it must be dredged at considerable cost.

b. Dredging consists of excavating or extracting materials from the Bay. Dredging is often necessary to provide and maintain safe navigation channels and harbors for port facilities, water-related industries, and recreational boating, and for flood control channels.

c. Past and present waste disposal practices have resulted in the introduction of pollutants into the Bay, some of which have degraded Bay sediments. These pollutants are not distributed evenly in the Bay and localized areas are highly contaminated. Dredging and subsequent aquatic disposal of contaminated sediments in the Bay can resuspend and redistribute pollutants in the water column, making them accessible to Bay organisms, and result in possible adverse impacts on natural resources of the Bay.

d. Material dredged from the Bay has historically been disposed of aquatically in the Bay. In more recent times, most aquatic disposal has occurred at one of four Bay U.S. Army Corps of Engineers designated disposal sites where the material is expected to disperse and the maximum amount would be carried out the Golden Gate on the ebb tides and cause the least environmental impact as possible. These sites are: (1) off Alcatraz Island; (2) in San Pablo Bay; (3) in the Carquinez Strait; and (4) in the Suisun Bay Channel. But even at the site nearest the ocean, off Alcatraz Island, less than half of the disposed material is carried out to sea by the tides.

e. Capacity at the Alcatraz Island disposal site is limited because over years of use a large mound of material has formed which, unless future disposal is properly managed, may adversely affect water circulation and Bay aquatic life, and pose a hazard to maritime navigation.

f. Alternate locations to Bay aquatic disposal include non-tidal upland and ocean sites. Only small amounts of material have been disposed in non-tidal sites historically. Additional non-tidal sites with increased capacity should be available for dredged material disposal projects in early 1993, and ocean disposal sites are expected to be available for use in early 1994. Some non-tidal upland sites may be categorized as waters of the United States pursuant to federal law.

g. Certain dredged material can be used beneficially rather than treated as a waste. The material can be used to bolster levees and dikes, create and restore tidal marshes and managed wetlands, cover and seal sanitary landfills, and as fill in construction projects.

h. Dredged material disposed at sea could return to the Bay with tidal currents or could cause damage to marine organisms or beach sites. These conditions are capable of being analyzed prior to disposal at sea.

i. The San Francisco Bay Regional Water Quality Control Board and the U.S. Environmental Protection Agency are responsible for determining appropriate dredged material pollutant testing and discharge standards and for assuring that dredging and the disposal of dredged materials are consistent with the maintenance of Bay water quality. The U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers have joint federal responsibility for regulating ocean, Bay, and wetland disposal.

j. The Long Term Management Strategy (LTMS), initiated by the U.S. Army Corps of Engineers in 1991, is a multiple federal and state agency initiative to study comprehensively Bay dredging issues and prepare by 1995, a long-range Bay dredging and dredged material disposal management plan and

implementation program. When completed, the LTMS is expected to provide the basis for uniform federal and state dredged material disposal policies and regulations.

k. Underground fresh water supplies are an important supplement to surface water now brought into the Bay Area by aqueduct from mountain reservoirs. Deep dredging of Bay mud, or excavation for tunnels or bridge piers, could strip the "cover" from the top of a fresh water reservoir under the Bay, allowing the salt water to contaminate the fresh water, or allowing the fresh water (if artesian) to escape in large quantities and thus cause land to sink. The precise location of groundwater reservoirs under the Bay is not yet well known, however.

Policies

1. Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected; and (d) the materials would be disposed in accordance with Policy 2.

2. Disposal of dredged materials should be encouraged in non-tidal areas where the materials can be used beneficially, or in the ocean. Disposal in tidal areas of the Bay should be authorized when the Commission can find that: (a) the applicant has demonstrated that non-tidal and ocean disposal is infeasible because there are no alternate sites available or likely to be available for use in a reasonable period, or the cost of disposal at alternate sites is prohibitively expensive; (b) disposal would be at a site designated by the Commission; (c) the quality and volume of the material to be disposed is consistent with the advice of the San Francisco Bay Regional Water Quality Control Board; and (d) the period of disposal is consistent with the advice of the Department of Fish and Game and the National Marine Fisheries Service.

3. When the annual amount of dredged material proposed to be disposed in tidal areas of the Bay exceeds the disposal volume targets established by the Commission, in determining which projects to authorize, the Commission shall be guided by all relevant factors concerning the proposed projects, including, but not limited to, need for the dredging and the dredging project, regional economic impact, environmental impact, and other regional effects of the project, and the economic feasibility of using alternate disposal sites.

4. To ensure adequate capacity for necessary Bay dredging projects and to protect Bay natural resources, acceptable non-tidal disposal sites should be secured and ocean disposal sites designated. Further, disposal projects should maximize use of dredged material as a resource, such as creating, enhancing, or restoring tidal and managed wetlands, creating and maintaining levees and dikes, providing cover and sealing material for sanitary landfills, and filling at approved construction projects.

5. Once non-tidal or ocean disposal sites have been secured or designated, and prior to completion of the LTMS, the maximum feasible amount of dredged material should be disposed at non-tidal sites or in the ocean. Until non-tidal upland disposal sites are secured and ocean disposal sites designated, aquatic disposal in the Bay should be authorized at sites designated by the U.S. Army Corps of Engineers and the Commission. Dredged materials disposed aquatically in the Bay, particularly at the Alcatraz Island disposal site, should be carefully managed to ensure that the amount and timing of disposal does not create navigational hazards, adversely affect Bay currents or natural resources of the Bay, or foreclose the use of the site by projects critical to the economy of the Bay Area.

6. All proposed channels should be carefully designed so as not to undermine the stability of any adjacent dikes, fills or fish and wildlife habitats.

7. The Commission should encourage increased efforts by soil conservation districts and public works agencies in the 50,000-square-mile Bay tributary area to continuously reduce soil erosion as much as possible.

8. To protect underground fresh water reservoirs (aquifers): (a) all proposals for dredging or construction of work that could penetrate the mud "cover" should be reviewed by the San Francisco Bay Regional Water Quality Control Board and the State Department of Water Resources; and (b) dredging or construction work should not be permitted that might reasonably be expected to damage an underground water reservoir. Applicants for permission to dredge should be required to provide additional data on groundwater conditions in the area of construction to the extent necessary and reasonable in relation to the proposed project.

9. Interested agencies and parties are encouraged to explore and find funding solutions for the additional costs incurred by transporting dredged materials to non-tidal upland and ocean disposal sites, either by general funds contributed by ports and other relevant parties, dredging applicants or otherwise.

10. Dredged materials should only be used to create artificial islands in the Bay if competent studies demonstrate that these fill islands would have no harmful effect on Bay natural resources.

11. The Commission should encourage, sponsor and participate in the LTMS and other initiatives conducting research on Bay sediment movement, the effects of dredging and disposal on Bay natural resources, alternatives to Bay aquatic disposal, and funding additional costs of transporting dredged materials to non-tidal upland and ocean disposal sites.

Amended May 1992

Water-Related Industry

Findings and Policies Concerning Water-Related Industry on the Bay

Findings

a. Certain industries require a waterfront location on navigable, deep water to receive raw materials and distribute finished products by ship, thereby gaining a significant transportation cost advantage. These industries are defined as *water-related industries*.

b. The navigable, deep water sites around the Bay are a unique and limited resource and should be protected for uses requiring deep draft ship terminals, such as water-related industries and ports.

c. There is little foreseeable future demand for new water-related industrial sites around the Bay. Expansion of water-related industry can be accommodated at existing water-related industries. Because waterfrontage with access to navigable, deep water is scarce in the Bay Area, existing and future water-related industrial sites must be efficiently planned and managed.

d. Many other industries compete with water-related industries for waterfront sites: (1) industries that use large volumes of water for cooling or processing purposes and therefore often seek sites near the shoreline, these are defined as "water using industries"; (2) industries that benefit from or support the operation of water-related industries and therefore seek locations near them, these are defined as "linked industries"; and (3) other industries that simply seek locations close to freeways and railroads, or that seek a waterfront site because of favorable land costs.

Policies

1. Sites designated for both water-related industry and port uses in the Bay Plan should be reserved for those industries and port uses that require navigable, deep water for receiving materials or shipping products by water in order to gain a significant transportation cost advantage.

2. Linked industries, water-using industries, and industries which gain only limited economic benefits by fronting on navigable water, should be located in adjacent upland areas.

However, pipeline corridors serving such facilities may be permitted within water-related industrial priority use areas, provided pipeline construction and use does not conflict with present or future water-transportation use of the site.

3. Land reserved for both water-related industry and port use will be developed over a period of years. Other uses may be allowed in the interim that, by their cost and duration, would not preempt future use of the site for water-related industry or port use.

4. Water-related industry and port sites should be planned and managed so as to avoid wasteful use of the limited supply of waterfront land. The following principles should be followed to the maximum extent feasible in planning for water-related industry and port use:

    a. Extensive use of the shoreline for storage of raw materials, fuel, products, or waste should not be permitted on a long-term basis. If required, such storage areas should generally either be at right angles to the main direction of the shoreline or be as far inland as feasible, so other use of the shoreline may be made possible.

    b. Where large acreages are available, site planning should strive to provide access to the shoreline for all future plants and port facilities that might locate in the same area. (As a general rule, therefore, the longest dimension of plant sites should be at right angles to the shoreline.) Marine terminals should also be shared as much as possible among industries and port uses.

    c. Waste treatment ponds for water-related industry and port uses should occupy as little land as possible, be above the highest recorded level of tidal action, and be as far removed from the shoreline as possible.

    d. Any new highways, railroads, or rapid transit lines in existing or future water-related industrial and port areas should be located sufficiently far away from the waterfront so as not to interfere with industrial use of the waterfront. New access roads to waterfront industrial and port areas should be approximately at right angles to the shoreline, topography permitting.

5. Water-related industry and port uses should be planned so as to make the sites attractive (as well as economically important) uses of the shoreline. The following criteria should be employed to the maximum extent possible:

    a. Air and water pollution should be minimized through strict compliance with all relevant laws, policies and standards. Mitigation, consistent with the Commission's policy concerning mitigation, should be provided for all unavoidable adverse environmental impacts.

    b. When bayfront hills are used for water-related industries, terracing should generally be required and leveling of the hills should not be permitted.

    c. Important Bay overlook points, and historic areas and structures that may be located in water-related industrial and port areas, should be preserved and incorporated into the site design, if at all feasible. In addition, shoreline not actually used for shipping facilities should be used for some type of public access or recreation, to the maximum extent feasible. Public areas need not be directly accessible by private automobiles with attendant parking lots and driveways; access may be provided by hiking paths or by forms of public transit such as elephant trains or aerial tramways.

    d. Regulations, tax arrangements, or other devices should be drawn in a manner that encourages industries and port uses to meet the foregoing objectives.

6. The Commission, together with the relevant local governments, should cooperatively plan for use of vacant and underutilized water-related industrial priority use areas. Such planning should include regional, state and federal interests where appropriate, as well as public and special interest groups. Resulting plans should include: (a) a program for joint

use of waterfront facilities where this is beneficial and feasible; (b) a regulatory or management program for reserving the entire waterfront site or parcel for water-related industrial and port use; and (c) a program for minimizing the environmental impacts of future industrial and port development. Such plans, if approved by the relevant local governments and by the Commission, could be amended into the Bay Plan as special area plans.

7. The Bay Plan water-related industrial findings, policies, and priority use areas, together with any detailed plans as described above in 6., should be included as the waterfront element of any Bay regional industrial siting plan or implementation program.

Amended January 1987

Ports

Findings and Policies Concerning Ports on the Bay

Findings

a. San Francisco Bay is one of the world's great natural harbors, and maritime commerce is of primary importance to the entire economy of the Bay Area.

b. Adequate modern port terminals and ground access facilities and deeper shipping channels will be needed to preserve and enhance the standing of the Bay Area as a major world harbor and to keep pace with changes in shipping technology.

c. Of particular importance for Bay planning is the expected growth in containerized cargo handling, which require large, specially designed terminals and supporting transportation facilities. Also important are the expected growth in automobiles, iron and steel, and dry bulk cargoes (requiring fewer, generally smaller terminals than containerized cargo) and the continued surplus of break-bulk terminals expected as general cargo is increasingly containered or handled at combination container/break-bulk terminals.

d. There are enough shoreline sites to accommodate currently projected cargo growth to the year 2020, with a minimum of Bay filling. However, to do so, new terminals must be built at the most suitable sites. Bay fill for new terminals must be minimized to conform to the provisions of the McAteer-Petris Act, the efficiency of existing and new terminals must continue to increase, and all of the available sites must be reserved for terminals. This will require careful coordination of port development with other shoreline uses, local government protection of sufficient port lands to accommodate port-related uses and terminal back land expansions, redevelopment of some existing terminals and industry for new terminals, and deepening channels where it would increase the efficiency of existing terminals.

e. If some ports in the regional system do not have the funds necessary to complete facilities needed by the region, a regional agency may be required to finance or develop them. Otherwise, there will be tremendous pressure to allow the ports with the strongest finances

to provide all of the regional facilities, even though this might result in pressures to fill the Bay unnecessarily.

f. No single port agency is responsible for coordinated planning and development of Bay port terminals. In the absence of a seaport plan for the Bay Area, there is a risk that new port facilities could be built by whichever individual port can command the necessary financing even though another site might serve regional needs equally well but with less Bay fill. In addition, a major investment by one publicly-operated port could be jeopardized by the unnecessarily duplicating actions of another publicly-operated Bay Area port. And, of particular importance to proper use of the Bay, parts of the Bay could be filled, and shoreline areas taken, for unnecessarily competing port uses.

   To minimize these risks and to coordinate the planning and development of Bay port terminals, the San Francisco Bay Area Seaport Plan has been developed.

g. Bay Area ports are not supported completely by revenues from shipping, but also derive revenues from other uses of port-owned property.

Policies

1. Port planning and development should be governed by the policies of the Seaport Plan and other applicable policies of the Bay Plan. The Seaport Plan provides for:

   a. Expansion and/or redevelopment of port facilities at Alameda, Benicia, Oakland, Redwood City, Richmond, and San Francisco, and development of new port facilities at Vallejo and Selby;

   b. Further deepening of ship channels needed to accommodate expected growth in ship size and improved terminal productivity;

   c. The maintenance of up-to-date cargo forecasts and existing cargo handling capability estimates to guide the permitting of port terminals; and

   d. Development of port facilities with the least potential adverse environmental impacts while still providing for reasonable terminal development.

2. Some filling and dredging will be required to provide for necessary port expansion, but any permitted fill or dredging should be in accord with the Seaport Plan.

3. Port priority use areas should be protected for marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers, and marine services. Other uses, especially public access and public and commercial recreational development, should also be permissible uses provided they do not significantly impair the efficient utilization of the port area.

Amended April 1996

Airports

Findings and Policies Concerning Airports on the Bay

Findings

a. The shoreline of the Bay is a favored location for airports because the Bay provides an open space for takeoffs and landings away from populated areas. A Bay shore location is also conveniently close to present population centers.

b. The introduction of larger and faster aircraft has caused rapid rises in passenger volume and has made air transportation of cargo increasingly economical. Further sharp increases in passenger and cargo volume may be expected.

c. The growth of aviation in the Bay Area will require additional land area for: (1) expansion of terminals; (2) aircraft operating, loading, and parking; (3) automobile parking; (4) surface transportation routes linking airports with major population centers; and (5) cargo storage. In addition, land near airports will be sought by industries that ship large quantities of products by air, and by warehousing firms and others heavily dependent on air commerce.

d. Effective, long-term operation of airports requires that a buffer zone be created to keep tall buildings and residential areas at some distance from aircraft operations.

e. The aviation needs of the Bay Area are regional in extent, and effective planning to provide for the growth of aviation can only be done on a comprehensive, regional basis.

Policies

1. To enable the Bay Area to have adequate airport facilities, and to minimize the harmful effects of airport expansion upon the Bay, a regional airport system plan should be prepared at the earliest possible time by a responsible regional agency. The study should have the full participation of all governmental agencies having regionwide planning responsibilities and all other agencies, including private groups, having a substantial interest in the Bay Area's present or future aviation needs and facilities. The plan should include as a minimum:

   a. An analysis of expected air traffic in the Bay Area, by types—commercial, military, and general (small plane);

   b. An analysis of alternative sites for building new airports or expanding present ones, taking into account the effect of each site on the surrounding environment;

   c. An analysis of the surface transportation necessary to serve the alternative sites for future airports; and

   d. An analysis of the effects of new airports upon the location of jobs and homes within the Bay Area.

2. Pending completion of a comprehensive airport system plan, and recognizing that various classes of airports must be included in any plan for the region or the Bay, it is assumed that:

   a. A system of **reliever airports** will be created throughout the region instead of one or two very large facilities. Some short-range traffic (500 miles or less, e.g., San Francisco-Los Angeles), which is a major portion of total air carrier traffic, will be diverted to reliever airports, and improved ground and air transportation links will be provided among the airports in the system. Under this concept, it is assumed that San Francisco and Oakland International Airports will continue to service most long-distance flights and that pressures for continued expansion of these airports can be reduced by diverting a portion of the short-range and general aviation traffic to reliever airports in such cities as San Jose, Santa Rosa, and Napa.

   It is assumed that three years will be needed to complete an adequate regional airport system plan, and as many as five to seven years thereafter to build facilities proposed in the plan. Therefore, pending completion of the comprehensive airport system plan, capital investment in, and any Bay filling for, major airports in the Bay region should be limited to improvements needed within the next 10 years (i.e., before 1979).

b. Airports for **general aviation** can and should be at inland sites whenever possible. New airports for this purpose should be constructed away from the Bay; Bay shore sites and Bay filling should be allowed only if there is no feasible alternative. Expansion of existing general aviation airports should be permitted on Bay fill only if no feasible alternative is available.

c. **Heliports** may in some instances need to be located on the shores of the Bay to be close to a traffic center with minimum noise interference. In general, existing piers should be used for this purpose and new piers, floats, or fill should be permitted only if it is demonstrated that no feasible alternative is available.

3. Airports on the shores of the Bay should be permitted to include within their premises terminals for passengers, cargo, and general aviation; parking and supporting transportation facilities; and ancillary activities such as aircraft maintenance bases that are necessary to the airport operation. Airport-oriented industries (those using air transportation for the movement of goods and personnel or providing services to airport users) may be located within airports designated in the Bay Plan if they cannot feasibly be located elsewhere, but no fill should be permitted to provide space for these industries directly or indirectly.

4. If some airports in the regional system do not have the funds necessary to complete facilities needed by the region, a regional agency may be required to finance or develop them. Otherwise, there will be tremendous pressure to allow the airports with the strongest finances to provide all of the regional facilities, even though this might result in unnecessary filling of the Bay.

5. To enable airports to operate without additional Bay filling, tall buildings and residential areas should be kept from interfering with aircraft operations. The Commission should prevent incompatible developments within its area of jurisdiction around the shoreline.

Amended November 1995

Transportation

Findings and Policies Concerning Transportation On and Around the Bay

Findings

a. Local transportation planning for the Bay Area is coordinated by the Metropolitan Transportation Commission. The California Department of Transportation is responsible for state highway planning in the Bay Area. The California Transportation Commission sets priorities for funding transportation projects.

b. Primary emphasis in recent years has been placed on freeways, which in some instances have been built on fill in the Bay because acceptable routes could not be found ashore. Little attention has been given in recent years to using the waters of the Bay for modern boat transportation.

c. Massive use of the automobile during a time of rapid population growth in the Bay Area endangers the environment both because of the air pollutants emitted by automobiles and because of the space required by automobiles for roadways and for parking.

d. Primary reliance on the automobile for surface transportation in the Bay Area means further pressures to use the Bay as a route for future freeways. Therefore, a primary goal of transportation planning, from the point of view of preserving and properly using the Bay, should be substantial reduction in dependence on the automobile. While the private car will still be needed and used for many types of travel, the goal should be development of new systems of transportation that can carry large volumes of people and goods without damaging the environment of the Bay Area.

e. Roads are not water-oriented uses because roads do not need to be located in the water to function properly and do not take advantage of some unique feature of water.

Policies

1. The Bay represents a great but, at present, little-used resource for transportation within the region. New types of faster barges may be able to move trucks and freight from point to point within the region at low cost and without adding to surface congestion. Also, a system

of modern ferries (capable of high speeds with minimum noise and waves) may be able to provide service between major traffic generators (e.g., between downtowns, or between downtowns and airports) and eventually to provide scheduled service from one end of the Bay to the other for both commuting and pleasure use. The Bay Plan maps indicate possible sites for commuter ferry terminals and shallow-draft ports.

2. Because of the continuing vulnerability of the Bay to filling for roads, the Commission should continue to take an active role in Bay Area transportation planning affecting the Bay, particularly to encourage alternative methods of transportation to be used within the Bay Area that do not require fill. The Metropolitan Transportation Commission, the California Department of Transportation, the California Transportation Commission, the Federal Highway Administration, and other public and private transportation authorities should avoid planning or funding roads that would require fill in waterways.

3. If any additional bridge is proposed across the Bay, adequate research and testing should determine whether an alternative could overcome the particular congestion problem without such a route in the Bay and, if not, whether a tunnel beneath the Bay is at all feasible.

4. If a route must be located across a waterway, the following provisions should apply:

   a. The crossing should be placed on a bridge or in a tunnel, not on solid fill.

   b. Structures should provide adequate clearance for commercial ships, Navy ships, and pleasure boats to have uninterrupted passage at all times.

   c. Toll plazas, service yards, or other ancillary features should not be located on new fill.

   d. To provide maximum ultimate capacity on any new route that is allowed over or under a waterway (and thus to minimize the number that might have to be allowed in the Bay), the design of the route should, if feasible, accommodate future mass transit facilities and subsequent installation of automatic power and guidance elements for vehicles.

Amended October 1989

Commercial Fishing

Findings and Policies Concerning Commercial Fishing, Shellfishing, and Mariculture in the Bay

Findings

a. The construction and use of commercial fishing facilities are consistent with state and federal policies promoting public trust and water-oriented uses of the state's waters.

b. Existing commercial fishing facilities in the San Francisco Bay Area are centered principally in three areas: the Fisherman's Wharf area of San Francisco; north of the Dennison Street Bridge in Oakland; and south of the Army Corps of Engineers' Operations Base in Sausalito. Facilities at each location include boat docking and mooring and fish unloading, handling, cleaning, filleting, and distribution facilities. There are no public fish markets at these facilities.

c. Commercial fishing continues to be a valuable part of the Bay Area economy and culture. The commercial fishing industry provides fresh fish for area residents and restaurants and generates primary and secondary economic benefits to the state. Additionally, because visitors are attracted by commercial fishing activities, the industry is an important part of the Bay Area's multi-billion dollar tourist industry.

d. Because of the relatively low direct economic return and the character of commercial fishing operations, there is pressure to convert fishing boat berths to recreational boat berths and to replace commercial fishing facilities with retail, commercial, recreational, and other uses.

e. If the existing facilities are protected, it is not necessary to reserve shoreline areas for commercial fishing.

f. Although clam and native oyster beds are located throughout the Bay Area, shellfish harvesting is currently limited to recreational harvesting due primarily to Bay water quality problems.

g. If and when not needed for salt production, salt ponds may have continued commercial value for mariculture operations. Managed wetlands are low-lying seasonal wetlands which could be appropriate sites for construction of mariculture ponds.

Policies

1. Commercial fishing facilities are water-oriented uses (port and water-related industry) for which the Commission can allow some Bay fill subject to the fill policies contained in the McAteer-Petris Act and elsewhere in the Bay Plan.

2. Modernization of existing commercial fishing facilities and construction of new commercial fishing boat berthing, fish off-loading, and fish handling facilities on fill may be permitted at appropriate sites with access to fishing grounds and to land transportation routes, if no alternative upland locations are feasible. Support facilities for the resident fleet and transient fishing vessel crew use, such as restrooms, parking, showers, storage facilities, and public fish markets should be provided, and, where feasible, located on land.

3. Existing commercial fishing mooring areas, berths, and onshore facilities should not be displaced or removed unless adequate new facilities are provided or the Commission determines that adequate facilities of the same or better quality are available.

4. New commercial fishing facilities should be approved at any suitable area on the shoreline, preferably with good land transportation and space for fish handling and directly related ancillary activities. Because commercial fishing boats do not need deep water to dock and off-load cargo, they should not preempt deep water berthing needed for marine terminals or water-related industry.

5. If commercial shellfish harvesting is reactivated in the Bay Area, handling and depuration facilities should be allowed only on land. Commercial shellfish harvesting facilities and activities should not interfere unduly with recreational uses of San Francisco Bay or cause significant adverse impacts on fish and wildlife resources. New Bay projects should not destroy or otherwise adversely impact existing shellfish beds.

6. Where consistent with the protection of fish and wildlife, mariculture operations should be permitted in salt ponds if salt production is no

longer economically feasible or if the mariculture operations would not interfere with the overall economic viability of salt production.

7. Consistent with the protection of fish and wildlife resources, mariculture ponds should be permitted in managed wetlands that cannot be retained in their existing uses.

Adopted June 1986

Recreation

Findings and Policies Concerning Recreation On and Around the Bay

Findings

a. In 1963, only about four miles of the approximately 1,000-mile Bay shoreline were being used for waterfront parks. Since then, increased interest in the Bay has resulted in development of additional parks, marinas, and other forms of water-oriented recreation. But the full recreational potential of the Bay has by no means been reached.

b. The demand for recreational facilities including parks, marinas, launching ramps, fishing piers, and beaches in the Bay Area will increase even more rapidly than the population increases, and will be accelerated if the work week is shortened and spending power per capita increases. Many more recreational facilities will be needed.

c. Planning for park uses along the Bay and shoreline should anticipate needs as far into the future as possible. For parks, there is no practical estimate of the acreage that should be provided on the shoreline of the Bay, but it is assumed the largest possible portion of the total regional requirement should be provided adjacent to the Bay. All sites near the Bay that may be needed for parks in the future should be reserved now; otherwise, most of this land will have been taken for other uses by the time it is needed. At the present time, 50 years appears to be the farthest into the future that any needs can be projected reasonably, so park needs to the year 2020 should be considered.

d. Boating allows residents to take advantage of the unique recreational opportunities provided by the Bay. As of July, 1981, the Commission had authorized approximately 6,500 new berths, bringing the regional total to approximately 19,200 berths. Additional berths and launching ramps will be needed in the future. Some locations are unsuitable for marinas or launching facilities because of high rates of sedimentation, valuable habitat, and insufficient upland for support facilities. An adequate number of conveniently located restrooms and vessel sewage pumpout facilities at recreational boat marinas will assist significantly in reducing wastewater discharges from vessels.

e. Live-aboard boats are designed and used for active navigation but are distinguished from other navigable boats in that they are also used as a primary place of residence. Although residential use is neither a water-oriented nor a public trust use, live-aboard boats can be converted easily to a navigable, recreational use and, when properly located within a recreational boat marina, can provide a degree of security to the marina.

f. A major supplement to parks, marinas, and other forms of water-oriented recreation are the several areas of water-oriented commercial recreation and public assembly that have been developed around the Bay, such as the Ghirardelli Square-Fisherman's Wharf-Northern Waterfront area in San Francisco, Jack London Square in Oakland, and the downtown waterfronts of Sausalito and Tiburon.

g. Additional commercial recreation and public assembly are desirable uses of the shoreline if they permit large numbers of persons to have direct and enjoyable access to the Bay. These uses can often be provided by private development at little or no direct cost to the public.

Policies

1. As the population of the Bay region increases, more people will use their leisure time in water-oriented recreation activities. Water-oriented recreation facilities such as marinas, launch ramps, beaches, and fishing piers should be provided to meet those needs. For parks, there is no practical estimate of the acreage that should be provided on the shoreline of the Bay, but it is assumed the largest possible portion of the total regional requirement should be provided adjacent to the Bay.

2. The Commission should also allow additional marinas, boat-launching lanes, and fishing piers elsewhere on the Bay, provided they would not preempt land or water area needed for other priority uses and provided they would be feasible from an engineering viewpoint, would not have significant adverse effects on water quality and circulation, would not result in inadequate flushing, would not destroy valuable marshes or mudflats, and would not harm identified valuable fish and wildlife resources.

3. The Bay Plan maps include about 5,000 acres of existing shoreline parks and 5,800 acres of new parks on the waterfront. In addition, 4,400

acres of military establishments (especially around the Golden Gate) are proposed as parks if and when military use is terminated.

4. The following general standards have been used in determining locations for each type of recreational facility (and should be used as a guide in allowing additional ones):

   a. **General.** Each type of facility should be well distributed around the shores of the Bay to the extent consistent with more specific criteria below. Any concentrations of facilities should generally be as close to major population centers as is feasible. Recreational facilities should not preempt sites needed for ports, waterfront industry, or airports, but efforts should be made to integrate recreation into such facilities to the extent they might be compatible. Different types of compatible public and commercial recreational facilities should be clustered to the extent feasible to permit joint use of ancillary facilities and provide greater range of choice for users.

   b. **Marinas.** (1) Marinas should be allowed at any suitable site on the Bay. Unsuitable sites are those that tend to fill up rapidly with sediment; have insufficient upland; contain valuable marsh, mudflat, or other wildlife habitat; or are subject to unusual amounts of fog. At suitable sites, the Commission should encourage new marinas, particularly those that result in the creation of new open water through the excavation of areas not part of the Bay and not containing valuable wetlands. (2) Fill should be permitted for marina facilities that must be in or over the Bay, such as breakwaters, shoreline protection, boat berths, ramps, launching facilities, pumpout and fuel docks, and short-term unloading areas. Fill for marina support facilities may be permitted at sites with difficult land configurations provided that the fill in the Bay is the minimum necessary and any unavoidable loss of Bay habitat, surface area, or volume is offset to the maximum amount feasible, preferably at or near the site. (3) No new marina or expansion of any existing marina should be approved unless water quality and circulation will be adequately protected and, if possible, improved, and an adequate number of vessel sewage pumpout facilities that are convenient in location and time of operation to recreational boat users should be provided free of charge or at a reasonable fee, as well as receptacles to dispose of waste oil. (4) In addition, all projects approved should provide public amenities such as viewing areas, restrooms, and public parking; substantial physical and visual access; and maintenance for all facilities. Frequent dredging should be avoided.

   c. **Live-aboard boats.** Live-aboard boats should be allowed only in marinas and only if: (1) The number would not exceed ten percent of the total authorized boat berths unless the applicant can demonstrate clearly that a greater number of live-aboard boats is necessary to provide security or other use incidental to the marina use; (2) The boats would promote and further the recreational boating use of the marina (for example, providing a degree of security), and are located within the marina consistent with such purpose; (3) The marina would provide, on land, sufficient and conveniently located restrooms, showers, garbage disposal facilities, and parking adequate to serve live-aboard boat occupants and guests; (4) The marina would provide and maintain an adequate number of vessel sewage pumpout facilities in locations that are convenient in location and time of operation to all boats in the marina, particularly live-aboard boats, and would provide the service free of charge or at a reasonable fee; and (5) There would be adequate tidal circulation in the marina to mix, dilute, and carry away any possible wastewater discharge. Live-aboard boats moored in a marina on July 1, 1985, but unauthorized by the Commission, should be allowed to remain in the marina provided the tests of (2), (3), (4), and (5) above are met. Where existing live-aboard boats in a marina exceed ten percent of the authorized berths, or a greater number is demonstrated to be

clearly necessary to provide security or other use incidental to the marina use, no new live-aboard boats should be authorized until the number is reduced below that number and then only if the project is in conformance with tests (1), (2), (3), (4), and (5) above.

d. **Launching Lanes.** (1) Launching lanes should be placed where wind and water conditions would be most favorable for smaller boats. (2) Some launching lanes should be located near prime fishing areas and others near calm, clear water suitable for waterskiing. (3) Additional launching facilities should be located around the Bay shoreline, especially where there are few existing facilities. These facilities should be available free or at moderate cost. Launching facilities should include adequate car and trailer parking, restrooms, and public access. (4) In marinas, launching facilities should be encouraged where there is adequate upland to provide needed support facilities. (5) Fill for ramps into the water, docks, and similar facilities should be permitted. Other fill should not be permitted.

e. **Fishing Piers.** Fishing piers should not block navigation channels, nor interfere with normal tidal flow.

f. **Beaches.** Beaches for swimming and sunbathing should generally be in warm areas protected from the wind. Some new beaches could be planned adjacent to power plants or other industrial plants that warm the nearby waters as they discharge heated water that has been used to cool industrial machinery.

g. **Water-oriented commercial-recreation.** Water-oriented commercial-recreational establishments, such as restaurants, specialty shops, theaters, and amusements, should be encouraged in urban areas adjacent to the Bay. Some suggested locations for this type of activity are indicated on the Plan maps. Effort should be made to link commercial-recreation centers (and major shoreline parks) by a fleet of small, inexpensive ferries similar to those operating on some European lakes and rivers.

5. To assure optimum use of the Bay for recreation, the following facilities should be encouraged in shoreside parks and in or near yacht harbors or commercial ferryboat facilities.

   a. **In shoreside parks.** (1) Where possible, parks should provide some camping facilities accessible only by boat, and docking and picnic facilities for boaters. (2) To capitalize on the attractiveness of their bayfront location, parks should emphasize hiking, bicycling, riding trails, picnic facilities, viewpoints, beaches, and fishing facilities. Recreational facilities that do not need a waterfront location, e.g., golf courses and playing fields, should generally be placed inland, but may be permitted in shoreline areas if they are part of a park complex that is primarily devoted to water-oriented uses. (3) Where shoreline open space includes areas used for hunting waterbirds, public areas for launching rowboats should be provided so long as they do not result in overuse of the hunting area. (4) Public launching facilities for a variety of boats should be provided in shoreside parks where feasible. (5) Where open areas include ecological reserves, access via catwalk or other means should be provided for nature study to the extent that such access does not excessively disturb the natural habitat. (6) Limited commercial recreation facilities, such as small restaurants, should be permitted within waterfront parks provided they are clearly incidental to the park use, are in keeping with the basic character of the park, and do not obstruct public access to and enjoyment of the Bay. Limited commercial development may be appropriate (at the option of the park agency responsible) in all parks shown on the Plan maps except where there is a specific note to the contrary.

   b. **In yacht harbors and ferryboat terminals.** In or near yacht harbors or commercial ferryboat facilities, private boatels and

restaurants should be encouraged where adequate shoreline land is available. Public docks for visiting boaters should be provided where feasible in order to give public access from the water.

c. **In all recreation facilities.** Access to marinas, launch ramps, beaches, fishing piers, and other recreation facilities should be clearly signed and easily available from parking reserved for the public or from public streets.

6. All the waterfront land needed for waterfront parks and beaches by the year 2020 should be reserved now, because delay may mean that needed shoreline will otherwise be preempted for other uses. However, recreational facilities need not be built all at once; their development can proceed in accordance with recreational demand over the years.

7. In addition to the major recreational facilities indicated on the Plan maps, public access should be included wherever feasible in any shoreline development, as described in the policies for Public Access to the Bay. That policy is intended to result in much more access to the Bay than can be provided by public parks alone, especially in urban areas, and to encourage private development of the shoreline.

8. Further study should be given to the feasibility of dredging a network of channels paralleling the shoreline in shallow areas, for use by small boats and recreational ferries. Channels could open up large areas, particularly in the South Bay and San Pablo Bay, for recreational boating, could make possible the development of marinas and launching lanes at more frequent intervals, and could add visual interest to shoreline areas. In addition, the channels could separate marshes and mudflats from dry land, thus enhancing the wildlife value of these areas.

9. To enhance the appearance of shoreline areas, and to permit maximum public use of the shores and waters of the Bay, flood control projects should be carefully designed and landscaped and, whenever possible, should provide for recreational uses of channels and banks.

10. Because of the need to increase the recreational opportunities available to Bay Area residents, small amounts of Bay filling may be allowed for shoreline parks and recreational areas that provide substantial public benefits and that cannot be developed without some filling.

Amended March 1986

Public Access

Findings and Policies Concerning Public Access to the Bay

Findings

a. San Francisco Bay is a dominant feature of the nine-county Bay Area. It provides an environment for numerous forms of public enjoyment including viewing, photography, nature study, fishing, wading, walking, bicycling, jogging, or just sitting beside the water. As an outstanding visual resource, the Bay is an important focal point for the entire region that serves to orient people to its various parts.

b. Public access required by the Commission usually consists of pedestrian access to and along the shoreline and beaches of San Francisco Bay. It may include certain improvements, such as paving, landscaping, and street furniture; and it may allow for additional uses, such as bicycling, fishing, picnicking, nature education, etc. Visual access to the Bay is a critical part of public access. The Design Review Board was formed in 1970 of professional designers to advise the Commission on the adequacy of public access of proposed projects in accordance with the Bay Plan.

c. Although public access to the approximately 1,000-mile Bay shoreline has increased significantly since the adoption of the Bay Plan in 1968, there is still only a small part of the shoreline open to the public. The full potential for access to the Bay, particularly along urban waterfronts, has by no means yet been reached.

d. Public agencies have contributed to improved Bay access by providing a substantial number of the parks shown in the Bay Plan maps. In addition, many agencies and communities continue to examine the waterfronts in their jurisdictions and have proposed new points of public access to the Bay. However, other demands for governmental services will necessarily limit funds for the provision of shoreline access by these agencies. Clearly, additional public access to the Bay is needed, and this can be provided, in part at least, by private capital in a wide variety of shoreline developments.

e. Although opportunities for views of the Bay from public access areas have increased since the Bay Plan was adopted in 1968, there are still a significant number of shoreline areas where there exists little or no visual access to the Bay.

f. Public access areas obtained through the permit process are most utilized if they provide physical access, provide connections to public rights-of-way, are related to adjacent uses, are designed, improved, and maintained clearly to indicate their public character, and provide visual access to the Bay.

g. In some cases, certain uses may unduly conflict with accompanying public access. For example, uncontrolled public access may adversely impact sensitive wildlife areas, or some port or water-related industrial activities may pose a substantial hazard to public access users.

Policies

1. In addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline, whether it be for housing, industry, port, airport, public facility, or other use, except in cases where public access is clearly inconsistent with the project because of public safety considerations or significant use conflicts. In these cases, access at other locations preferably near the project, should be provided whenever feasible.

2. Public access to some natural areas should be provided to permit study and enjoyment of these areas (e.g., by boardwalks or piers in or adjacent to some sloughs or marshes). However, some wildlife may be sensitive to human intrusion. For this reason, projects in such areas should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided.

3. Whenever public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed. This should be done wher-

ever appropriate by requiring dedication of fee title or easements at no cost to the public, in the same manner that streets, park sites, and school sites are dedicated to the public as part of the subdivision process in cities and counties.

4. Public access improvements provided as a condition of any approval should be consistent with the project and the physical environment, including protection of natural resources, and provide for the public's safety and convenience. The improvements should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for the physically handicapped to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs.

5. In some areas, a small amount of fill may be allowed if the fill is necessary and is the minimum absolutely required to develop the project in accordance with the Commission's public access requirements.

6. Access to the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available.

7. Roads near the edge of the water should be designed as scenic parkways for slow-moving, principally recreational traffic. The roadway and right-of-way design should maintain and enhance visual access for the traveler, discourage through traffic, and provide for safe, separated, and improved physical access to and along the shore. Public transit use and connections to the shoreline should be encouraged where appropriate.

8. Federal, state, regional, and local jurisdictions, special districts, and the Commission should cooperate to provide new public access, especially to link the entire series of shoreline parks and existing public access areas to the extent feasible without additional Bay filling or adversely affecting natural resources. State, regional, and local agencies that approve projects should assure that provisions for public access to and along the shoreline are included as conditions of approval and that the access is consistent with the Commission's requirements and guidelines.

9. The Public Access Supplement to the Bay Plan should be used as a guide in determining whether a project provides maximum feasible public access. The Design Review Board should advise the Commission regarding the adequacy of the public access proposed.

Amended March 1979

Appearance, Design, and Scenic Views

Findings and Policies Concerning Appearance, Design, and Scenic Views of Development Around the Bay

Findings

a. Much too often, shoreline developments have not taken advantage of the magnificent setting provided by the Bay. Some shoreline developments are of poor quality or are inappropriate to a waterfront location. These include uses such as parking lots and some industrial structures, which neither visually complement the Bay nor take advantage of a waterfront location. Over time, existing shoreline development of poor quality and inappropriate uses will be phased out or upgraded by normal market forces and by public action or a combination of both.

b. Unsightly debris, such as plastic bottles, old tires, and other refuse continues to mar the appearance of the shoreline, particularly of marshes, mudflats, and sloughs.

c. The appearance of the Bay, and people's enjoyment of it as a scenic resource, contribute to the enjoyment of daily life in the Bay Area. As a special kind of open space, the Bay acts as both the unifying element of the entire Bay region and as a physical divider of its parts. The wide surface of the Bay, and the distant vistas it affords, offer relief from the crowded, often chaotic, urbanized scene and help to create a sense of psychological well-being.

d. Probably the most widely enjoyed "use" of the Bay is simply viewing it—from the shoreline, from the water, and from afar; a Bay view can add substantially to the value of a home, office, or apartment building. Also, the Bay is a major visitor attraction for the tourist industry.

e. As a world renowned scenic resource, the Bay is viewed and appreciated from many locations in the region. However, full advantage has not been taken of the dramatic view potential from the hills and other inland locations surrounding the Bay, often because of poor road and street layout and poorly located buildings or landscaping. While some jurisdictions have adopted controls on building heights and locations, there is still no general attention to maximizing views from streets and roads and to obtaining public view areas. In particular, along many urban waterfronts, man-made obstructions such as buildings, parking lots, utility lines, fences, billboards, and even landscaping have eliminated or severely diminished views of the Bay and shoreline.

f. One of the visual attractions of San Francisco Bay is its abundance of wildlife, particularly birds which are constantly moving around the Bay waters, marshes, and mudflats in search of food and refuge.

Policies

1. To enhance the visual quality of development around the Bay and to take maximum advantage of the attractive setting it provides, the shores of the Bay should be developed in accordance with the Public Access Design Guidelines.

2. All bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore. To this end, planning of waterfront development should include participation by professionals who are knowledgeable of the Commission's concerns, such as landscape architects, urban designers, or architects, working in conjunction with engineers and professionals in other fields.

3. In some areas, a small amount of fill may be allowed if the fill is necessary—and is the minimum absolutely required—to develop the project in accordance with the Commission's design recommendations.

4. Structures and facilities that do not take advantage of or visually complement the Bay should be located and designed so as not to impact visually on the Bay and shoreline. In particular, parking areas should be located away from the shoreline. However, some small parking areas for fishing access and Bay viewing may be allowed in exposed locations.

5. To enhance the maritime atmosphere of the Bay Area, ports should be designed, whenever feasible, to permit public access and viewing of port activities by means of (a) view points (e.g., piers, platforms, or towers), restaurants, etc., that would not interfere with port operations, and (b) openings between buildings and other site designs that permit views from nearby roads.

6. Additional bridges over the Bay should be avoided, to the extent possible, to preserve the visual impact of the large expanse of the Bay. The design of new crossings deemed necessary should relate to others nearby and should be located between promontories or other land forms that naturally suggest themselves as connections reaching across the Bay (but without destroying the obvious character of the promontory). New or remodeled bridges across the Bay should be designed to permit maximum viewing of the Bay and its surroundings by both motorist and pedestrians. Guard rails and bridge supports should be designed with views in mind.

7. Access routes to Bay crossings should be designed so as to orient the traveler to the Bay (as in the main approaches to the Golden Gate Bridge). Similar consideration should be given to the design of highway and mass transit routes paralleling the Bay (by providing frequent views of the Bay, if possible, so the traveler knows which way he or she is moving in relation to the Bay). Guardrails, fences, landscaping, and other structures related to such routes should be designed and located so as to maintain and to take advantage of Bay views. New or rebuilt roads in the hills above the Bay and in areas along the shores of the Bay should be constructed as scenic parkways in order to take full advantage of the commanding views of the Bay.

8. Shoreline developments should be build in clusters, leaving open area around them to permit more frequent views of the Bay. Developments along the shores of tributary waterways should be Bay-related and should be designed to preserve and enhance views along the waterway, so as to provide maximum visual contact with the Bay.

9. “Unnatural” debris should be removed from sloughs, marshes, and mudflats that are retained as part of the ecological system. Sloughs, marshes, and mudflats should be restored to their former natural state if they have been despoiled by human activities.

10. Towers, bridges, or other structures near or over the Bay should be designed as landmarks that suggest the location of the waterfront when it is not visible, especially in flat areas. But such landmarks should be low enough to assure the continued visual dominance of the hills around the Bay.

11. In areas of the Bay where oil and gas drilling or production platforms are permitted, they should be treated or screened, including derrick removal, so they will be compatible with the surrounding open water, mudflat, marsh or shore area.

12. In order to achieve a high level of design quality, the Commission’s Design Review Board, composed of design and planning professionals, should review, evaluate, and advise the Commission on the proposed design of developments that affect the appearance of the Bay in accordance with the Bay Plan findings and policies on Public Access; on Appearance, Design, and Scenic Views; and the Public Access Design Guidelines. City, county, regional, state, and federal agencies should be guided in their evaluation of bayfront projects by the above guidelines.

13. Local governments should be encouraged to eliminate inappropriate shoreline uses and poor quality shoreline conditions by regulation and by public actions (including development financed wholly or partly by public funds). The Commission should assist in this regard to the maximum feasible extent by providing advice on Bay-related appearance and design issues, and by coordinating the activities of the various agencies that may be involved with projects affecting the Bay and its appearance.

14. Views of the Bay from vista points and from roads should be maintained by appropriate arrangements and heights of all develop-

ments and landscaping between the view areas and the water. In this regard, particular attention should be given to all waterfront locations, areas below vista points, and areas along roads that provide good views of the Bay for travelers, particularly areas below roads coming over ridges and providing a “first view” of the Bay (shown in Bay Plan Map No. 8, Natural Resources of the Bay).

15. Vista points should be provided in the general locations indicated in the Plan maps. Access to vista points should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where parking or public transportation is available. In some cases, exhibits, museums, or markers would be desirable at vista points to explain the value or importance of the areas being viewed.

Amended March 1979

Salt Ponds and Other Managed Wetlands

Findings and Policies Concerning Salt Ponds and Other Managed Wetlands Around the Bay

Findings

a. Salt ponds total some 36,000 acres in the South Bay and some 10,000 acres in the North Bay. About 4,200 acres of salt ponds have been removed from salt production and are now being converted into the Redwood Shores community, which will ultimately house some 60,000 persons.

b. The salt ponds are an economically important and productive use of the waters of the Bay (for extracting salt), and the salt is an important raw material for the Bay Area chemical industry.

c. The ponds provide 15 percent of the total Bay and pond water surface. This large pond surface area supplements the water surface of the Bay and thus helps to moderate the Bay Area climate and to prevent smog.

d. The ponds are used as a habitat by shorebirds.

e. More than 50,000 acres of managed marshland, adjacent to the Bay but diked off from it, are maintained as duck hunting preserves, game refuges, and occasionally as farming areas. In most of these areas, tide gates permit occasional intakes of Bay water.

f. The diked marshlands are as important to wildlife as the tidal marshes. Substantial further diminution would result in a proportionate reduction in the amount of wildlife the Bay system can support.

g. The ponds and other wetlands provide some of the open space character of the Bay.

h. Salt ponds are currently used to raise and harvest between one-half and three-quarters of a million pounds of brine shrimp per year and have commercial value for mariculture operations.

Policies

1. As long as is economically feasible, the salt ponds should be maintained in salt production and the wetlands should be maintained in their present use. Property tax policy should assure that rising property taxes do not force

conversion of the ponds and other wetlands to urban development. In addition, the integrity of the salt production system should be respected (i.e., public agencies should not take for other projects any pond or portion of a pond that is a vital part of the production system).

2. If, despite these provisions, the owner of the salt ponds or the owner of any managed wetland desires to withdraw any of the ponds or marshes from their present uses, the public should make every effort to buy these lands, breach the existing dikes, and reopen these areas to the Bay. This type of purchase should have a high priority for any public funds available, because opening ponds and managed wetlands to the Bay represents man's last substantial opportunity to enlarge the Bay rather than shrink it. (In some cases, if salt ponds are opened to the Bay, new dikes will have to be built on the landward side of the ponds to provide the flood control protection now being provided by the salt pond dikes.)

3. If public funds do not permit purchase of all the salt ponds or marshes proposed for withdrawal from their present uses, and if some of the ponds or marshes are therefore proposed for development, consideration of the development should be guided by the following criteria:

    a. Just as dedication of streets, parks, etc., is customary in the planned unit development and subdivision laws of many local governments, dedication of some of the pond or marsh areas as open water can and should be required as part of any development. Highest priority to such dedication should be given to ponds that (1) would, if opened to the Bay, significantly improve water circulation, (2) have especially high wildlife values, or (3) have high potential for water-oriented recreation.

    b. Depending on the amount of pond or marsh area to be dedicated as open water, the public may wish to purchase additional areas. Plans to purchase any ponds or marshes should give first consideration to the priorities in paragraph a. above.

    c. Development of the ponds or marshes should provide for retaining substantial amounts of open water, should provide for substantial public access to the Bay, and should be in accord with the Bay Plan policies for non-priority uses of the shoreline.

    d. Mariculture operations should be encouraged in abandoned salt ponds to provide salt pond owners with an economic use of their property that does not require the ponds to be drained or filled. Managed wetlands no longer used as duck clubs may be developed for mariculture to allow an economic use of the land which does not require filling.

4. As soon as possible, recreational developments such as marinas and small parks should be built in appropriate areas outboard of the present salt ponds, or in sloughs; but these developments should in no way jeopardize the salt production system or be so located as to prevent opening of ponds to the Bay at any future time.

5. The Commission should study the possibility of public purchase of "development rights" to the ponds. If these rights were bought by the public, the owner of the ponds would remain fully able to continue using them for salt production but would not be able to fill the ponds for urban development. Similar study should be given to acquisition of "development rights" to the duck clubs and other diked wetlands, to continue them in their present uses.

Amended June 1986

Other Uses of the Bay and Shoreline

Findings and Policies Concerning Other Uses of the Bay and Shoreline

Findings

a. In addition to the foregoing uses of the Bay and its shores, there are at present many others including:

   Housing
   Public facilities (prisons, military installations, etc.)
   Public utilities (power transmission lines, pipelines, etc.)
   Industry not related to the Bay
   Recreation facilities not related to the Bay
   Commercial facilities not related to the Bay
   Refuse disposal sites

b. Some uses of the shore take no advantage of the water as an asset, and some current uses abuse and despoil the water frontage.

c. Houseboats are designed for and used as permanent private residences and occasionally for office and similar non-navigation purposes and are not used for active navigation. A houseboat is neither a water-oriented use nor a use that furthers the public trust and does not serve a statewide public benefit. Because of size and bulk, houseboats can restrict views of the Bay from the shoreline, block sunlight penetration to Bay waters, and, in shallow areas, reduce wind and wave action that can result in sedimentation and detrimentally affect the Bay. Houseboat marinas also compete for sites needed for future recreational boat berths, other recreational activities, open space, and wildlife habitat.

Policies

1. Shore areas not proposed to be reserved for a priority use should be used for any purpose (acceptable to the local government having jurisdiction) that uses the Bay as an asset and in no way affects the Bay adversely. This means any use that does not adversely affect enjoyment of the Bay and its shoreline by residents, employees, and visitors within the site area itself or within adjacent areas of the Bay or shoreline.

2. Accessory structures such as boat docks and portions of a principal structure may extend on piles over the water when such extension is necessary to enable actual use of the water, e.g., for mooring boats, or to use the Bay as an asset in the design of the structure.

3. Wherever waterfront areas are used for housing:

   (a) the amount of shoreline and the surface area of the Bay should be increased to the maximum extent feasible by dredging additional channels inland from the Bay; and

   (b) whenever feasible, high densities should be encouraged to provide the advantages of waterfront housing to larger numbers of people.

4. Because of the requirements of existing law, the Commission should not allow new houseboat marinas. The Commission should authorize houseboats used for residential purposes in existing houseboat marinas only when each of the following conditions is met:

   (a) The project would be consistent with a special area plan adopted by the Commission for the geographic vicinity of the project;

   (b) As to marina expansions, the houseboats would be limited in number and would be only a minor addition to the existing number of authorized houseboat berths;

   (c) All wastewater producing facilities would be connected directly to a shoreside sewage treatment facility;

   (d) No additional fill would be required except for the houseboat itself, a pedestrian pier on pilings, and for minor fill for improving shoreline appearance or for producing new public access to the Bay;

   (e) The houseboats would float at all stages of the tide to reduce impacts on benthic organisms and to allow light penetration to the Bay bottom, unless it is demonstrated that requiring flotation at all tidal stages would have a greater adverse environmental effect on the Bay, and would not result in increased sedimentation in the area;

(f) The houseboats would not block views of the Bay significantly from the shoreline;

(g) The project would comply with local government plans and enforceable regulations and standards for mooring locations and safety, wastewater collection, necessary utilities, building and occupancy standards, periodic monitoring and inspection, and provide for the termination of the residential use when the lands are needed for public trust purposes;

(h) The project would be limited in cost and duration so that the tidelands and submerged lands could be released for water-oriented uses and public trust needs and, in no case, would the initial or any subsequent period of authorization exceed 20 years. The Commission should conduct a study of public trust needs of the project area within five years of project authorization or reauthorization and every five years thereafter. If the Commission determines within the first five years of authorization that the area is needed for water-oriented uses and public trust needs, the project should be terminated at the end of the 20-year authorization period. If after the first five-year period of project authorization the Commission determines that the area is needed for water-oriented uses and public trust needs, the project should be terminated no less than 15 years from the date of Commission determination. In any event, the original 20 years of the permit's authorization period cannot be extended or renewed by the Commission unless an application is filed for such purpose; and

(i) The project would be consistent with the terms of any legislative grant for the area.

Houseboats moored in recreational boat marinas in the Bay on July 1, 1985 but unauthorized by the Commission should be allowed to remain in the marina provided that the total number of houseboats and live-aboard boats would meet all the live-aboard boat policy tests and the tests of houseboat policies (b), (c), (d), (e), (f), (g), (h), and (i) above.

5. High voltage transmission lines should be placed in the Bay only when there is no reasonable alternative. Whenever high voltage transmission lines must be placed in the Bay or in shoreline areas:

   (a) New routes should avoid interfering with scenic views and with wildlife, to the greatest extent possible; and

   (b) The most pleasing tower and pole design possible should be used. High voltage transmission lines should be placed underground as soon as this is technically and economically feasible.

6. Power distribution and telephone lines should either be placed underground (or in an attractive combination of underground lines with streamlined overhead facilities) in any new residential, commercial, public, or view area near the shores of the Bay.

7. Whenever waterfront areas are used for sewage treatment or wastewater reclamation plants, the plants should be located where they do not interfere with and are not incompatible with residential, recreational, or other public uses of the Bay and shoreline.

8. New AM and short-wave radio transmitters may be placed in marsh or other natural areas. Whenever possible, however, consolidation of transmitting towers should be encouraged.

9. Desalinization and power plants may be located in any area where they do not interfere with and are not incompatible with residential, recreational, or other public uses of the Bay and shoreline, provided that any pollution problems resulting from the discharge of large amounts of heated brine into Bay waters, and water vapor into the atmosphere, can be precluded.

10. Pipeline terminal and distribution facilities near the Bay should generally be located in industrial areas but may be located elsewhere if they do not interfere with, and are not incompatible with, residential, recreational, or other public uses of the Bay and shoreline.

11. To eliminate any further demand to fill any part of the Bay solely for refuse disposal sites, new waste disposal systems should be developed; these systems should combine economical disposition with minimum consumption of land. Pending development of new waste disposal systems, immediate waste disposal problems should be solved through full utilization of existing dump sites and through development of new dump sites, if needed, in acceptable inland locations.

12. Types of development that could not use the Bay as an asset (and therefore should not be allowed in shoreline areas) include:

    (a) refuse disposal (except as it may be found to be suitable for an approved fill);

    (b) use of deteriorated structures for low-rent storage or other nonwater-related purposes; and

    (c) junkyards.

Amended March 1986

Part V
Carrying Out the Plan

The San Francisco Bay Plan

The San Francisco Bay Plan was completed and adopted by the San Francisco Bay Conservation and Development Commission in 1968 and was transmitted to the California Legislature and the Governor in 1969. In those actions the Commission completed the original charge given to it in the provisions of the McAteer-Petris Act of 1965. That Act created the Commission and mandated its study of the Bay and the preparation and submittal of a final report to the California Legislature in 1969. The Commission's final report, the San Francisco Bay Plan, covered the following matters as specifically required by the law:

1. The results of the Commission's detailed study of the Bay;

2. The comprehensive plan adopted by the Commission for the conservation of the water of San Francisco Bay and the development of its shoreline;

3. The Commission's recommendation of the appropriate agency to maintain and carry out the Bay Plan;

4. The Commission's estimate of the approximate amount of money that would be required to maintain and carry out the provisions of the Plan for the Bay;

5. Other information and recommendations the Commission deemed desirable.

The California Legislature received and acted upon the Commission's report and recommendations in 1969. The revised McAteer-Petris Act adopted by the Legislature and signed into law by the Governor designated the Commission as the agency responsible for maintaining and carrying out the provisions of the law and the Bay Plan for the maintenance and protection of San Francisco Bay. The San Francisco Bay Plan was designated as the Commission's Plan for the Bay, until otherwise ordered by the Legislature. The Commission may amend the Bay Plan from time to time so long as the changes are consistent with the findings and declarations of policy in the law. Consistent with that provision, the Commission has adopted a number of amendments to the Bay Plan policies and maps and such amendments to date have been incorporated in this document. The McAteer-Petris Act also specified the composition of the Commission, the scope of its authority, and the area of its jurisdiction over San Francisco Bay and the shoreline. Since 1969 the Legislature has amended the McAteer-Petris Act several times, but the general character, scope of authority, and area of jurisdiction remain. The amendments to the law have dealt, for the most part, with refining or making more specific jurisdictional limits and with representation of governmental agencies on the Commission. Other amendments have included: provisions classifying violations of the McAteer-Petris Act as misdemeanors; procedures for dealing with claims of exemption from Commission jurisdiction; and provisions for the issuance of cease and desist orders by the Commission or its Executive Director and to provide civil penalties for violations of such orders.

The Commission

The San Francisco Bay Conservation and Development Commission consists of 27 members who represent various interests in the Bay, including federal, state, regional, and local governments and the public of the San Francisco Bay region. Seven public representatives, required to be residents of the San Francisco Bay area, are appointed: five by the Governor; one by the Senate Committee on Rules; and one by the Speaker of the Assembly. All are subject to confirmation by the California Senate. The Chairman and Vice-Chairman are selected by the Governor from the five public members subject to his or her appointment. Local governments in the Bay region are represented by one Commissioner from each Board of Supervisors in the nine counties and by four representatives of bayside cities appointed by the Association of Bay Area Governments. State representatives on the Commission are appointed from the staffs of the Department of Business and Transportation, the Resources Agency, the Department of Finance, and the State Lands Commission. One member of the San Francisco Bay Regional Water Quality Control Board is appointed by that Board to serve on the Commission. One Commissioner represents the U.S. Army Corps of Engineers and one the U.S. Environmental Protection Agency. Each Commissioner has an alternate representative designated to attend meetings and vote in his or her absence.

In addition to the regular Commission representation described above, two members of the California Legislature, one senator and one member of the assembly, are appointed to meet with the Commission and participate in its activities to the extent such participation is not inconsistent with their duties as legislators.

Scope of Authority

Protection of the Bay and enhancement of its shoreline are inseparable parts of the Bay Plan. Clearly what happens to the shoreline helps determine what happens to the Bay; if, for example, the relatively few shoreline areas suitable for water-oriented industry are used for housing, pressures will develop to provide new industrial land by filling the Bay. Therefore, in the public interest, the Commission is authorized to control both: (1) Bay filling and dredging, and (2) Bay-related shoreline development.

Area of Jurisdiction

The area over which the Commission has jurisdiction for the purpose of carrying out the controls described above is defined in the McAteer-Petris Act and includes:

1. **San Francisco Bay**, being all areas that are subject to tidal action from the south end of the Bay to the Golden Gate (Point Bonita-Point Lobos) and to the Sacramento River line (a line between Stake Point and Simmons Point, extended northeasterly to the mouth of Marshall Cut), including all sloughs, and specifically, the marshlands lying between mean high tide and five feet above mean sea level; tidelands (land lying between mean high tide and mean low tide); and submerged lands (land lying below mean low tide).

2. **A shoreline band** consisting of all territory located between the shoreline of San Francisco Bay as defined in 1. of this section and a line 100 feet landward of and parallel with that line, but excluding any portions of such territory which are included in 1., 3., and 4. of this section; provided that the Commission may, by resolution, exclude from its area of jurisdiction any area within the shoreline band that it finds and declares is of no regional importance to the Bay.

3. **Salt ponds** consisting of all areas which have been diked off from the Bay and have been used during the three years immediately preceding the effective date of the amendment of this section during the 1969 Regular Session of the Legislature for the solar evaporation of Bay water in the course of salt production.

4. **Managed wetlands** consisting of all areas which have been diked off from the Bay and have been maintained during the three years immediately preceding the effective date of the amendment of this section during the 1969 Regular Session of the Legislature as a duck hunting preserve, game refuge, or for agriculture.

5. **Certain waterways** (in addition to areas included within 1., consisting of all areas that are subject to tidal action, including submerged lands, tidelands, and marshlands up to five feet above mean sea level, on, or tributary to, the listed portions of the following waterways:

   a. Plummer Creek in Alameda County, to the eastern limit of the salt ponds.

   b. Coyote Creek (and branches) in Alameda and Santa Clara Counties, to the easternmost point of Newby Island.

   c. Redwood Creek in San Mateo County, to its confluence with Smith Slough.

   d. Tolay Creek in Sonoma County, to the northerly line of Sears Point Road (State Highway 37).

   e. Petaluma River in Marin and Sonoma Counties, to its confluence with Adobe Creek and San Antonio Creek to the easterly line of the Northwestern Pacific Railroad right-of-way.

   f. Napa River, to the northernmost point of Bull Island.

g. Sonoma Creek, to its confluence with Second Napa Slough.

h. Corte Madera Creek in Marin County, to the downstream end of the concrete channel on Corte Madera Creek which is located at the U.S. Army Corps of Engineers Station No. 318 50 on the Corte Madera Creek Flood Control Project.

Where necessary, particular portions of the Commission's jurisdiction may be further clarified by the Commission's regulations.

Control of Filling and Dredging in the Bay

1. **Permit Procedures for Filling and Dredging.** Bay filling (including placement of piers, pilings, and floating structures moored in the Bay for extended periods of time) and dredging are controlled through the permit system established by the McAteer-Petris Act. The Commission is authorized to issue or deny permits for any filling and dredging in the Bay. Any public agency or owner of privately-held lands is required to obtain a permit before proceeding with fill or dredging.

   Permits are granted or denied only after public hearings (except for permits for emergency or minor repairs to existing installations or minor improvements as provided in the Commission's regulations, which may be approved by the Executive Director) and only after the city or county having jurisdiction over the area of the proposed project has made its views known to the Commission (or has failed to do so within 90 days after notification). The McAteer-Petris Act requires the Commission to take action on a permit matter within 90 days after it has received the report from the city or county or within 90 days after it has received and filed an application from the applicant, whichever date is later. These and other requirements and procedures for permit processing are specified in the McAteer-Petris Act (Title 7.2 of the California Government Code) and in the Commission's regulations (Title 14, Division 5 of the California Administrative Code).

The Commission's decisions on permit matters are governed by the provisions of the McAteer-Petris Act and the policies of the Bay Plan. The Commission should approve a permit application if it specifically determines that a proposed project meets the following conditions, each of which is necessary for effectively carrying out the Bay Plan.

a. **Fills in Accord with Bay Plan.** A proposed project should be approved if the filling is the minimum necessary to achieve its purpose, and if it meets one of the following five conditions:

   (1) The filling is in accord with the Bay Plan policies as to the Bay-related purposes for which filling may be needed (i.e., ports, water-related industry, and water-related recreation) and is shown on the Bay Plan maps as likely to be needed; or

   (2) The filling is in accord with Bay Plan policies as to purposes for which some fill may be needed if there is no other alternative (i.e., airports, roads, and utility routes); or

   (3) The filling is in accord with the Bay Plan policies as to minor fills for improving shoreline appearance or public access; or

   (4) The filling would provide on privately-owned property for new public access to the Bay and for improvement of shoreline appearance—in addition to what would be provided by the other Bay Plan policies—and the filling would be for Bay-oriented commercial recreation and Bay-oriented public assembly purposes, with a substantial part of the project built on existing land. The Commission should issue permits under this criterion provided:

      (a) The proposed project would limit the use of area to be filled to:

         (i) public recreation (beaches, parks, etc.); and

(ii) Bay-oriented commercial recreation and Bay-oriented public assembly, defined as facilities specifically designed to attract large numbers of people to enjoy the Bay and its shoreline, such as restaurants, specialty shops, and hotels.

(b) The proposed project would be designed so as to take advantage of its nearness to the Bay, and would provide opportunities for enjoyment of the Bay in such ways as viewing, boating, fishing, etc., by keeping a substantial portion of the development, and a substantial portion of the new shoreline created through filling, open to the public free of charge (though an admission charge could apply to other portions of the project).

(c) The proposed private project would not conflict with the adopted plans of any agency of local, regional, state, or federal government having jurisdiction over the area proposed for filling, and would be in an area where governmental agencies have not planned or budgeted for projects that would provide adequate access to the Bay.

(d) The proposed project would either provide recreational development in accordance with the Bay Plan maps or would provide additional recreational development that would not unnecessarily duplicate nearby facilities.

(e) A substantial portion of the project would be built on existing land, and the project would be planned to minimize the need for filling. (For example, all automobile parking should, wherever possible, be provided on nearby land or in multi-level structures rather than in extensive parking lots.)

(f) The proposed project would result in permanent public rights to use specific areas set aside for public access and recreation; these areas would be improved at least by filling to finished grade and by installation of necessary basic utilities, at little or no cost to the public.

(g) The proposed project would, to the maximum extent feasible, establish a permanent shoreline in a particular area of the Bay, through dedication of lands and other permanent restrictions on all privately-owned and publicly-owned property Bayward of the area approved for filling.

(h) The proposed project would provide, to the maximum extent feasible, for enhancement of fish, wildlife, and other natural resources in the area of the development.

(5) The filling would provide on privately-owned or publicly-owned property, for new public access to the Bay and for improvement of shoreline appearance—in addition to what would be provided by the other Bay Plan policies—and the filling would be limited to replacement piers for Bay-oriented commercial recreation and Bay-oriented public assembly purposes, covering less of the Bay than was being uncovered. The Commission should issue permits under this criterion provided:

(a) The proposed replacement fill in its entirety, including all parts devoted to public recreation, open space, and public access to

the Bay, would cover an area of the Bay smaller in size than the area being uncovered by removal of piers (pile-supported platforms), and those parts of the replacement fill devoted to uses other than public recreation, open space, and public access would cover an area of the Bay no larger than 50 percent of the area being uncovered (or such greater percentage as was previously devoted to such other uses that were destroyed involuntarily, in whole or in part, by fire, earthquake, or other such disaster, and will be devoted to substantially the same uses).

(b) The volume (mass) of structures to be built on the replacement pier (pile-supported platform) would be limited to the minimum necessary to achieve the purposes of the project.

(c) The replacement fill would be limited to piers (pile-supported platforms), rather than earth or other solid material, and, wherever possible, a substantial portion of the replacement project would be built on existing land.

(d) The pier (pile-supported platform—not a bridge) to be removed from the Bay must have:

(i) been destroyed involuntarily, in whole or in part, by fire, earthquake, or other such disaster, or

(ii) become obsolete through physical deterioration, or

(iii) become obsolete because changes in shipping technology make it no longer needed or suitable for maritime use.

If the platform itself, or the structures on it, have become obsolete, but the pilings that support the platform are structurally sound, consideration must be given to using the existing pilings in any replacement project.

(e) The proposed project must be consistent with a comprehensive special area plan for the geographic vicinity of the project, a special area plan that the Commission has determined to be consistent with the policies of the San Francisco Bay Plan, except that this provision would not apply to any project involving replacement of only a pier that had been destroyed involuntarily.

(f) The proposed project would involve replacement fill and removal of material in the same geographic vicinity (as set forth in the applicable special area plan).

(g) The proposed replacement pier would not extend into the Bay any farther than (i) the piers (pile-supported platforms) to be removed from the Bay as part of the project or (ii) adjacent existing piers.

(h) The proposed project would limit the use of the replacement pier to:

(i) public recreation (beaches, parks, etc.); and

(ii) Bay-oriented commercial recreation and Bay-oriented public assembly, defined as facilities specifically designed to attract large numbers of people to enjoy the Bay and its shoreline, such as restaurants, specialty shops, and hotels.

(i) The proposed project would be designed so as to take advantage of its nearness to the Bay, and would provide opportunities for enjoyment of the Bay in such ways as viewing, boating, fishing, etc., by keeping a substantial portion of the development, and a substantial portion of the new shoreline created on the replacement pier, open to the public free of charge (though an admission charge could apply to other portions of the project).

(j) The proposed project would not conflict with the adopted plans of any agency of local, regional, state, or federal government having jurisdiction over the area proposed for the replacement piers, and would be in an area where governmental agencies have not planned or budgeted for projects that would provide adequate access to the Bay.

(k) The proposed project would either provide recreational development in accordance with the Bay Plan maps or would provide additional recreation development that would not unnecessarily duplicate nearby facilities.

(l) The project would be planned to minimize the need for filling. (For example, all automobile parking should, wherever possible, be provided on nearby land or in multi-level structures rather than in extensive parking lots.)

(m) The proposed project would result in permanent public rights to use specific areas set aside for public access and recreation; these areas would be improved at least to finished grade and by installation of necessary basic utilities, at little or no cost to the public.

(n) The proposed project would, to the maximum extent feasible, establish a permanent shoreline in a particular area of the Bay, through dedication of lands and other permanent restrictions on all privately-owned and publicly-owned property bayward of the area approved for piers.

(o) The proposed project would provide, to the maximum extent feasible, for enhancement of fish and wildlife and other natural resources in the area of the development, and in no event would result in net damage to these values.

b. **Safety.** A proposed project should be approved by the Commission if its Engineering Criteria Review Board determines that the proposed project is in accordance with the policies for Safety of Fills. The Engineering Criteria Review Board, appointed by the Commission in accordance with the policies for Safety of Fills, consists of 11 members who are leading professionals in the fields of geology, structural engineering, and civil engineering (with specialty in soils engineering).

c. **Public Access.** A proposed fill project should increase public access to the Bay to the maximum extent feasible, in accordance with the policies for Public Access to the Bay.

d. **Effects on the Bay.** A permit for a proposed fill, dike, or pier, should be approved if it has been evaluated on the basis of the policies on Water Quality, Smog and Weather, Water Surface Area and Volume, and Marshes and Mudflats, and modified as necessary to minimize any harmful effects. Proposed dredging should be in accordance with the Dredging policies.

e. **Valid Title.** Because there is some question as to the conditions under which some private parties originally received lands in

the Bay, a private claimant should be required to show that he or she has a valid title to any Bay lands proposed for filling. Ordinarily, this could be done by submission of a current title insurance report including the derivation of title from original sale by the state. Where titles are disputed, the legal issues should be resolved as soon as possible by court action or other appropriate steps.

f. **Public Trust.** Virtually all the publicly and privately-held unfilled tidelands and submerged lands within the jurisdiction of the Commission are subject to the public trust. The public trust is a paramount public property right held in trust by the state for the benefit of the public. Title to this public trust ownership is vested in the State Lands Commission or legislative grantees. The purpose of the public trust is to assure that the lands to which it pertains are kept for trust uses, such as commerce, navigation, fisheries, wildlife habitat, recreation, and open space. The McAteer-Petris Act and the Bay Plan are an exercise of authority by the Legislature over public trust lands and establish policies for meeting public trust needs. As a result, the public trust ownership provides additional support for Commission decisions affecting such lands. When the Commission takes any action affecting lands subject to the public trust, it should assure that the action is consistent with the public trust needs for the area and, in case of lands subject to legislative grants, should also assure that the terms of the grant are satisfied and the project is in furtherance of statewide purposes.

g. **Appearance.** Plans for a proposed fill project should be submitted to the Design Review Board appointed by the Commission and consisting of professionals in the fields of urban design, architecture, and landscape architecture. The Design Review Board should determine whether the proposed project is in accordance with the policies for Appearance, Design, and Scenic Views, and should report its recommendations to the Commission before a permit is issued. The jurisdiction over appearance and design is advisory, and the Commission encourages local governing bodies to exercise their controls in accordance with the Commission's policies on Appearance and Design and the Design Review Board's recommendations.

h. **Mitigation.** Mitigation for the unavoidable adverse environmental impacts of any Bay fill should be considered by the Commission in determining whether the public benefits of a fill project clearly exceed the public detriment from the loss of water areas due to the fill, and whenever mitigation is necessary for the Commission to comply with the provisions of the California Environmental Quality Act. Whenever mitigation is needed, the mitigation program should be provided as part of the project. Mitigation should consist of measures to compensate for the adverse impacts of the fill to the natural resources of the Bay, such as to water surface area, volume, or circulation and to fish and wildlife habitat or marshes or mudflats. Mitigation is not a substitute for meeting the other requirements of the McAteer-Petris Act concerning fill. When mitigation is necessary to offset the unavoidable adverse impacts of approvable fill, the mitigation program should assure:

(1) That benefits from the mitigation would be commensurate with the adverse impacts on the resources of the Bay and consist of providing area and enhancement resulting in characteristics and values similar to the characteristics and values adversely affected;

(2) That the mitigation would be at the fill project site, or if the Commission determines that on-site mitigation is not feasible, as close as possible;

(3) That the mitigation measures would be carefully planned, reviewed, and approved by or on behalf of the

Commission, and subject to reasonable controls to ensure success, permanence, and long-term maintenance;

(4) That the mitigation would, to the extent possible, be provided concurrently with those parts of the project causing adverse impacts; and

(5) That the mitigation measures are coordinated with all affected local, state, and federal agencies having jurisdiction or mitigation expertise to ensure, to the maximum practicable extent, a single mitigation program that satisfies the policies of all the affected agencies.

If more than one mitigation program is proposed that satisfies all five factors above, the Commission should consider the cost of the alternatives in determining the appropriate program.

To encourage cost effective and comprehensive mitigation programs, the Commission should extend credit for certain fill removal and encourage land banking provided that any credit or land bank is recognized pursuant to written agreement executed by the Commission. In considering credit or land bank agreements, the Commission should assure that the five factors listed above will be met.

2. **Permit Decisions.** If a permit application meets the standards listed above, a permit should be granted. If the proposal does not meet these standards, a permit should not be issued. In some cases, however, a permit could be conditionally approved subject to the applicant's later meeting clearly-specified requirements relating to one or more of the eight standards above. In other cases, an applicant might be able to change his or her proposal to conform to the Bay Plan policies, and he or she could then reapply after 90days have elapsed since the date the original permit application was denied.

Developing the Bay and Shoreline to Their Highest Potential

In addition to the controls over filling and dredging in the Bay, the Commission has limited control over the Bay shoreline as specified in the McAteer-Petris Act. Such limited shoreline jurisdiction is necessary to reduce pressures for Bay filling that would result from poor use of available shoreline land, and to assure that public access to the Bay is provided wherever feasible. The Commission's shoreline jurisdiction, as defined in the McAteer-Petris Act, consists of the area between the Bay shoreline, as defined in the Act, and a line 100 feet landward of and parallel to the shoreline. The Act further specifies that certain water-oriented land uses should be permitted on the shoreline, including ports, water-related industries, airports, wildlife refuges, water-oriented recreation and public assembly, desalinization plants, and power plants requiring large amounts of water for cooling purposes. Priority use areas designated for such uses in the Bay Plan are to be reserved for them in order to minimize the need for future filling in the Bay for such uses. Within the 100-foot shoreline jurisdiction but outside of the areas designated for priority uses, the Commission may deny an application for a permit for a proposed project only on the grounds that the project fails to provide maximum feasible public access, consistent with the proposed project, to the Bay and the shoreline.

The Commission also has, under the McAteer-Petris Act, limited jurisdiction over salt ponds and managed wetlands.

1. **Permit Procedures for Shoreline Development.** The permit system for controlling development within the Commission's shoreline jurisdiction is essentially the same as the system established for the control of filling and dredging in the Bay. Any public agency or private owner holding shoreline lands is required to obtain a permit from the Commission before proceeding with development. Permits may be granted or denied only after public hearings (except for emergency or minor repairs or minor improvements which may be granted by the Executive Director) and after the process for review and comment by the city or county has been completed.

2. **Purposes for Which a Permit for Shoreline Development May Be Issued.** The Commission should approve a permit for

shoreline development if the agency specifically determines that the proposed project is in accordance with the standards listed below for (a) use of the shoreline, (b) provision of public access, and (c) advisory review of appearance.

a. **Use of Shoreline**

(1) **Priority Uses.** The Commission has designated on the Plan maps those areas which should be reserved for priority land uses on the Bay shoreline. Within those areas, in accordance with provisions of the McAteer-Petris Act, the Commission has set and described the specific boundaries of the 100-foot shoreline band within which it is authorized to grant or deny permits for shoreline development. Permits for development within the priority boundary areas of the 100-foot shoreline band should be granted or denied based on the appropriate Bay Plan development policies:

(a) Ports

(b) Water-related Industry

(c) Water-oriented Recreation

(d) Airports

(e) Wildlife Areas

(2) **Salt Ponds and Other Managed Wetlands** (as shown on the Bay Plan maps).

(3) **All Other Shoreline Areas** should be used in any manner that would not adversely affect enjoyment of the Bay and shoreline by residents, employees, and visitors within the area itself or within adjacent areas of the Bay and shoreline, in accordance with the policies for Other Uses of the Bay and Shoreline. The McAteer-Petris Act specifies that for areas outside the priority use boundaries, the Commission may deny a permit application for a proposed project only on the grounds that the project fails to provide maximum feasible public access to the Bay and shoreline consistent with the project.

b. **Public Access.** The Commission should ensure that each new shoreline development increases public access to the Bay to the maximum extent feasible, in accordance with the policies for Public Access to the Bay.

c. **Appearance.** The Commission has appointed a Design Review Board made up of representatives of the design professions including architecture, landscape architecture, and engineering. The Board reviews and makes recommendations to the Commission on the appearance and design of proposed projects, evaluating them in light of the policies for Appearance, Design, and Scenic Views. Its recommendations are advisory only and are not of themselves grounds for denying a permit.

3. **Inland Advisory Role.** Outside the area of the Commission's jurisdiction where permits for development from the Commission are not required, the McAteer-Petris Act specifies that the provisions of the Bay Plan pertaining to such areas are advisory only.

4. **Regional Development Policies.** Many regional matters, such as air pollution control, regulation of water quality, planning and construction of waste disposal facilities, airport development, and regional transportation, are directly related to the future of the Bay. Some of these regional matters are now within the jurisdiction of state and regional agencies, but others are not now being dealt with at all on a regional basis. Some or all of these regional matters could be made the responsibility of a limited regional government, which would in addition carry out the Bay Plan, but obviously they could not be made the responsibility of a single-purpose Bay agency. In any event, however, it is essential that many regional policies directly related to the Bay be carried out if the Bay Plan is to be effective. For example:

a. Water quality should be maintained in accordance with the policies on Water Quality.

b. Port planning and development should be carried out in accordance with the policies on Ports.

c. Airport planning and development should be carried out in accordance with the policies on Airports.

d. Views from vista points and from public roads should be protected and scenic roads and trails should be built in accordance with the policies on Appearance, Design, and Scenic Views.

e. Inland industrial sites should be provided in accordance with the policies on Water-Related Industry.

Applying and Amending the Bay Plan

The McAteer-Petris Act specifies that the Commission may make amendments or other changes to all or any part of the Bay Plan consistent with provisions of the Act. The Act further directs that in exercising its power to grant or deny permit applications the Commission shall do so in conformity with the provisions of both the McAteer-Petris Act and the San Francisco Bay Plan. Thus, the Commission is directed to carry out the Bay Plan, i.e., to guide the development of the Bay and shoreline in accordance with the Bay Plan policies and Bay Plan maps.

Because the policies and maps are necessarily general in nature, the Commission, as indicated above, is authorized to clarify, interpret, and apply them as necessary. The Commission is empowered to issue regulations containing more detailed standards and procedures based on the Plan policies, to assist in preparation of specific plans for shoreline areas, and to publish information to assist planners, architects, and engineers in the design of projects affecting the Bay.

In those instances where it is desirable to amplify and to apply Bay Plan maps, recommendations, and policies to specific shoreline areas, the Commission should do so through a special area plan. These plans should be separate documents and should be referred to on the appropriate Bay Plan maps. In all cases, special area plans should be read in conjunction with the provisions of both the Bay Plan and the McAteer-Petris Act.

In amending the Bay Plan policies and maps or making other changes in the Plan, the Commission acts in accordance with the provisions of the McAteer-Petris Act, including:

1. The Commission is directed to make continuing studies of any matters related to the Bay that, in the Commission's judgment, are necessary to keep the Bay Plan policies and Bay Plan maps up to date.

2. The Commission is required to conduct a public hearing on any proposal to change the Bay Plan policies or the Bay Plan maps.

3. The Commission may amend the Bay Plan policies upon the affirmative vote of two-thirds of the members of the Commission, such vote not to be taken less than 90 days following public notice of the hearing on the proposed policy amendment. The Commission may make nonpolicy amendments to the Bay Plan maps upon the affirmative vote of a majority of the Commission, such vote to be taken not less than 30 days following notice of the hearing on the proposed change.

Special area plans, as described above, are subject to the same procedures for public notice, hearing, and voting as other amendments or changes in the Bay Plan policies and maps. Special area plans that have been adopted by the Commission and are specified by area on the appropriate Bay Plan maps.

The Suisun Marsh Protection Plan was adopted by the Commission in 1976 and submitted to the Legislature and the Governor as required under provisions of the Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974. The Suisun Marsh Protection Plan has as its objectives the preservation and enhancement of the quality and diversity of the 85,000-acre aquatic and wildlife habitats of the area and to assure retention of upland areas adjacent to the Marsh in uses com-

patible with its protection. The Protection Plan was designed to be a more specific application of the general, regional policies of the San Francisco Bay Plan and to supplement such policies where appropriate because of the unique characteristics of the Suisun Marsh. The Suisun Marsh Preservation Act of 1977 established primary and secondary management areas and directed the establishment of procedures for carrying out provisions of the Plan and the Act in those areas. The Act specifies that appropriate policies of the San Francisco Bay Plan and the Suisun Marsh Protection Plan shall apply to the Commission's area of jurisdiction and that if a conflict occurs between the two Plans the policies of the Suisun Marsh Protection Plan shall control. References to the Suisun Marsh Protection Plan are noted on the appropriate Bay Plan maps.

Management Program for San Francisco Bay

The federal Coastal Zone Management Act of 1972, as amended, is a voluntary law enacted to encourage coastal states and territories to develop and implement programs to manage the nation's coastal resources. The Commission was one of the first agencies to participate in the federal program. In February 1977, the U.S. Department of Commerce approved the Commission's coastal management program for the San Francisco Bay segment of the California coastal zone. The Commission's coastal management program is based on the provisions and policies of the McAteer-Petris Act, the Suisun Marsh Preservation Act of 1977, the San Francisco Bay Plan, the Suisun Marsh Protection Plan, and the Commission's administrative regulations.

Under the Coastal Zone Management Act, federal agencies are generally required to carry out their activities and programs in a manner "consistent" with the Commission's coastal management program. To implement this provision, federal agencies make "consistency determinations" on their proposed activities, and applicants for federal permits, licenses, other authorization, or federal financial assistance make "consistency certifications." The Commission then has the opportunity to review the consistency determinations and certifications and to either concur with them or object to them. The Commission's decisions on federal consistency matters are governed by the provisions of the Coastal Zone Management Act and the Department of Commerce regulations. Four different and distinct consistency requirements exist, each applying to a different kind of situation.

1. A federal activity that directly affects land or water uses within the coastal zone must be consistent to the maximum extent practicable with the coastal management program.

2. A federal development project located within the coastal zone must be consistent to the maximum extent practicable with the coastal management program.

3. A project that affects land or water uses located within the coastal zone and that requires a federal permit, license, or other authorization must comply with and be conducted in a manner that is fully consistent with the coastal management program.

4. A state or local project that affects land or water uses within the coastal zone and that is supported by federal financial assistance must comply with and be conducted in a manner that is fully consistent with the coastal management program.

Within the Commission's areas of concern, the coastal zone consists of all areas located within the Commission's permit jurisdiction except those lands that the federal government owns, leases, holds in trust, or over which the federal government has sole discretion.

If the Commission objects to a consistency determination under 1 or 2 above, the federal agency can still proceed with the activity if it determines that the proposed project is "consistent to the maximum extent practicable" with the coastal management program. The Commission can appeal that decision to the courts or can request the Secretary of Commerce to mediate its dispute with the federal agency. In contrast, if the Commission objects to a consistency certification under 3 or 4 above, the activity cannot proceed.

The project sponsor can, however, appeal the Commission's objection to the Secretary of Commerce. If the Secretary finds that the activity would be consistent with the objectives of the Coastal Zone Management Act, or necessary for national security, the Secretary can authorize the activity despite the Commission's objection.

The Commission considers consistency determinations and certifications in the same manner it considers permit applications. Consistency concurrence or objection occurs only after public hearings (except for consistency determinations or certifications for emergency or minor repairs to existing installations or minor improvements as provided in the Commission's regulations and which may be approved by the Executive Director). The Commission must take action on a consistency determination matter within 45 days after it has received the federal agency determination, unless the federal agency agrees to a time extension. Consistency certifications must be acted upon within six months.

Part VI
The Plan Maps

Using the Bay Plan Maps

The maps that follow are an integral part of the Bay Plan. They are based on—and show how to apply—the Bay Plan policies. The maps also identify the shoreline priority use areas and illustrate the Commission's tidal water jurisdiction. The Plan map notes and suggestions, which accompany each map, are advisory and are not Commission policies.

1. **Plan Map Policies.** The "Bay Plan Policies" listed opposite each corresponding Bay Plan map are enforceable policies and have the same authority as the policies in the text of the Bay Plan.

2. **Plan Map Notes and Suggestions.** Comments that are not part of the Bay Plan policies—e.g., suggestions for further study, clarification of policy, and alternative proposals—appear as "Plan Map Notes" and "Commission Suggestions" opposite the corresponding map. These comments are not enforceable policies of the Commission.

3. **Priority Use Areas.** All shoreline sites designated for priority uses (as identified in the Bay Plan policies) are indicated on the Plan maps. Development of these sites should be governed by the Bay Plan policies for each specific use. The specific boundaries of the priority use areas are set in Commission Resolution No. 16. The Commission's staff should be consulted concerning questions of precise priority use area boundaries. Development of shoreline areas not proposed for any specific use should be consistent with the Bay Plan policies for Other Uses of the Bay and Shoreline.

4. **Commission Jurisdiction**. The Plan maps are not intended to delineate the Commission's jurisdiction. The Commission's legal jurisdiction is described in the McAteer-Petris Act and the Commission's regulations, and has been affected by certain court decisions. The Commission's staff should be consulted concerning questions of precise jurisdiction. Areas of the Bay subject to tidal action (and thus subject to the jurisdiction of the Commission for control of filling and dredging) are illustrated on the maps in light blue as are certain tributaries in which filling and dredging are also controlled because of their ecological importance.

Special Area Plans

Special area plans, which apply Bay Plan policies in greater detail to specific shoreline areas, are identified on the Plan maps. The purpose of special area plans is to more precisely guide public agencies and private parties as to what fill, dredging, or change of use of a shoreline area would be consistent with the McAteer-Petris Act and the Bay Plan policies. The special area plans adopted by the Commission are:

1. **San Francisco Waterfront Special Area Plan** (adopted April 1975)—applies to the San Francisco shoreline from the east side of the Hyde Street Pier to the south side of India Basin.

2. **Benicia Waterfront Special Area Plan** (adopted April 1977)—applies to the Benicia shoreline from West Second Street to the Benicia-Martinez Bridge.

3. **South Richmond Shoreline Special Area Plan** (adopted May 1977)—applies to the Richmond shoreline from the west side of Shipyard Three to the southeastern City boundary.

4. **San Francisco Waterfront Total Design Plan** (adopted June 1980)—applies to the San Francisco waterfront from Pier 7 to Pier 24.

5. **Richardson Bay Special Area Plan** (adopted December 1984)—applies to Richardson Bay from a line drawn between Cavallo Point in Marin County near the Golden Gate Bridge and Point Tiburon in Tiburon.

6. **Suisun Marsh Protection Plan** (adopted December 1976)—applies to the Suisun Marsh in Solano County.