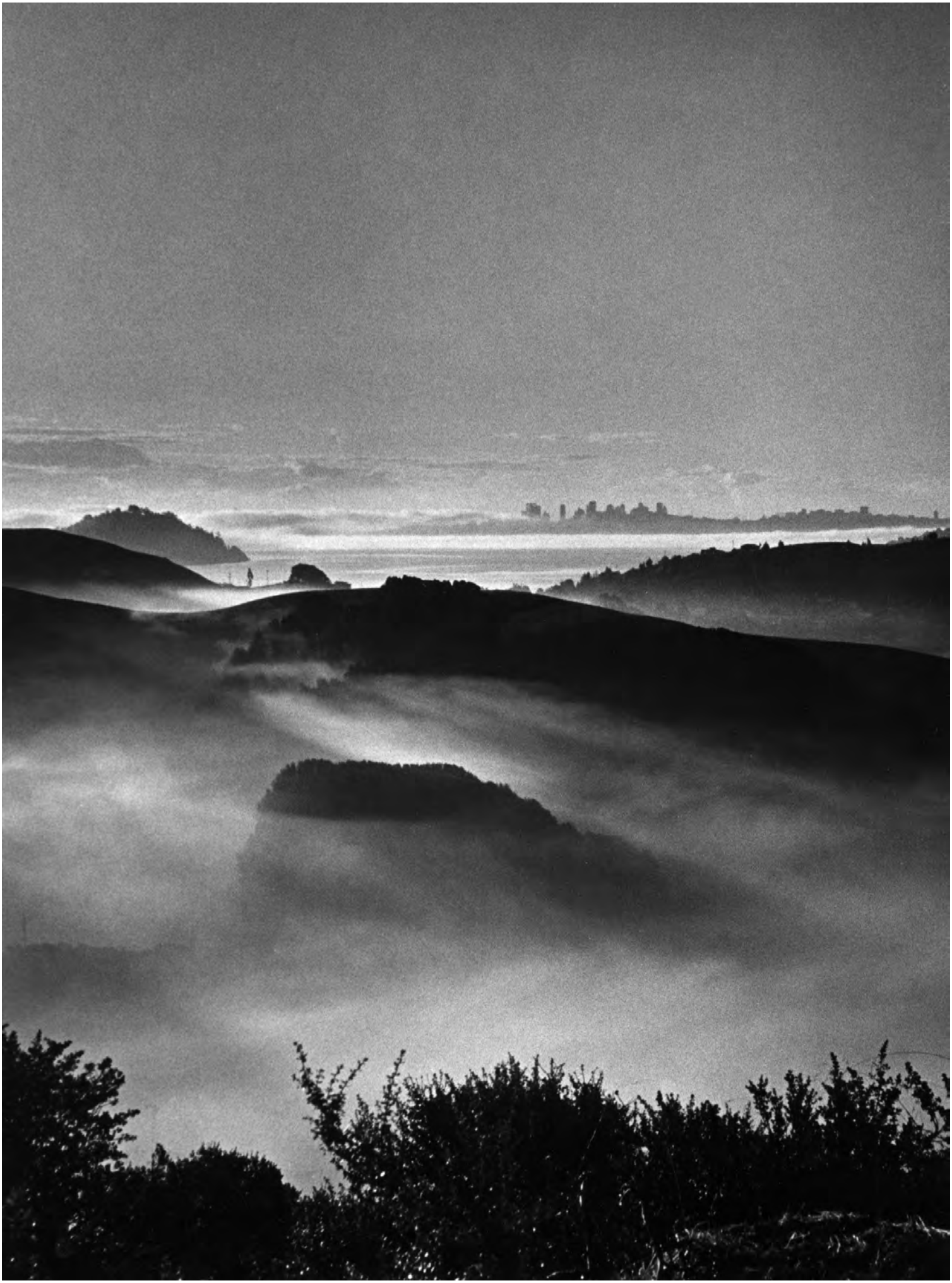
San Francisco Bay Plan

San Francisco Bay Conservation
and
Development Commission



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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Map Source:

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

San Francisco Bay Conservation and Development Commission

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

I am pleased to share this updated San Francisco Bay Plan, which guides how we use and protect the Bay.

The San Francisco Bay Conservation and Development Commission (BCDC) was founded in 1965 to stop San Francisco Bay from being filled indiscriminately, and concurrently, to create public access along the shoreline. The McAteer-Petris Act, BCDC's founding legislation, requires the Commission to create a comprehensive plan for the Bay. The Commission has carried out its regulatory and planning processes in accord with the various Bay Plan findings, policies, and maps for sixty years. These guide how the Commission reviews proposals that would affect the Bay and its tributary waterways, marshes, managed wetlands, salt ponds, and shoreline.

The McAteer-Petris Act also requires the Commission to keep the Bay Plan up to date. This latest publication of the Bay Plan demonstrates how BCDC continues to fulfill its original mandate in light of the uncertainty caused by climate change and rising sea levels. Those threats were not imagined when the Bay Plan was drafted originally, or even just a couple of decades ago. The Bay is no longer significantly shrinking due to unmanaged fill. Instead, it is growing due to rising sea level rise, flooding, and other coastal hazards.

To adapt to these massive changes, the Commission has adopted several groundbreaking Bay Plan policy changes since 2011. In that year, BCDC became the first coastal management program in the United States to establish policy related to how projects need to adapt to rising sea levels. In 2019, the Commission adopted policies to promote Bay-related environmental justice and social equity, and to allow larger amounts of fill for habitat restoration projects. In 2022, the Commission approved an almost total rewrite of its Seaport Plan to ensure that the Bay's ports will continue to thrive. And, in 2024, the Commission adopted the Regional Shoreline Adaptation Plan (RSAP), which reflects the Commission's important role in shaping how the region works together to plan for sea level rise across jurisdictional boundaries. The RSAP paves the way for how our cities and counties proactively and collectively protect the most at-risk communities, critical infrastructure, natural habitats and public access along the Bay.

The Bay Plan is a living and thriving document. I am sure that it will be amended further as the Commission continues to protect people, natural habitats, and existing and new structures along the Bay shoreline. Doing so wisely will improve quality of life and prosperity in the Bay Area for generations to come.

Sincerely,

R. Zachary Wasserman

Chair

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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.

The San Francisco 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. 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.

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.

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.

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.

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.

   g. Restoring, enhancing, or creating ecosystems that provide habitat for native fish, other aquatic organisms, or wildlife; enhance coastal resilience; and provide services such as water filtration, carbon sequestration, protection of shorelines from flooding and erosion, and raising the surface elevation of subsided land. Fill for these purposes will be especially important to facilitate the adaptation of habitats to rising sea level.

5. **Effects of Bay Filling.** Bay filling that is consistent with the purposes listed above can provide substantial benefits to the Bay. However, filling can be harmful to the Bay, and thus there are some tradeoffs when fill is used. Bay filling can have one or more of the following effects, which projects must balance to maximize benefits:

   a. Filling can negatively affect, and in some cases destroy, the habitat of fish, wildlife, and other organisms. Filling can alter 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, 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 may increase the danger of water pollution by reducing the ability of the Bay to assimilate the liquid waste that is discharged 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 can reduce 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.

   e. Filling can restore, enhance, or create valuable habitat for native organisms, which can in turn support healthier populations and communities of fish, other aquatic organisms, and wildlife; increase numbers of protected or endangered species; increase habitat connectivity; increase habitat sustainability; and contribute to regional habitat goals.

   f. Filling can be used to facilitate sea level rise adaptation of Bay habitats that are vulnerable to drowning and erosion.

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 442. 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 Refuges 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.

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, and the Department of Finance, and from either the State Lands Commission or the State Lands Commission staff. 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.

Carrying out the Bay Plan

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.

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 November 11, 1969 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 November 11, 1969 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.

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. **Permits for Bay 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 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 person or governmental agency wishing to place fill or to dredge is required to obtain a permit before proceeding with fill or dredging. 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.

2. **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.

3. **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 Refuges

      (2) **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. **Uses of Salt Ponds and Other Managed Wetlands.** Salt Ponds and Other Managed Wetlands

   c. **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.

   d. **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.

4. **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.

5. **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.

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 and filed an application from the applicant, and requires that an applicant must obtain all local discretionary approvals before the Commission can file an application. 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).

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 compatible 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.

Coastal Zone Management Program For the San Francisco Bay Segment of the California Coastal Zone

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.

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.

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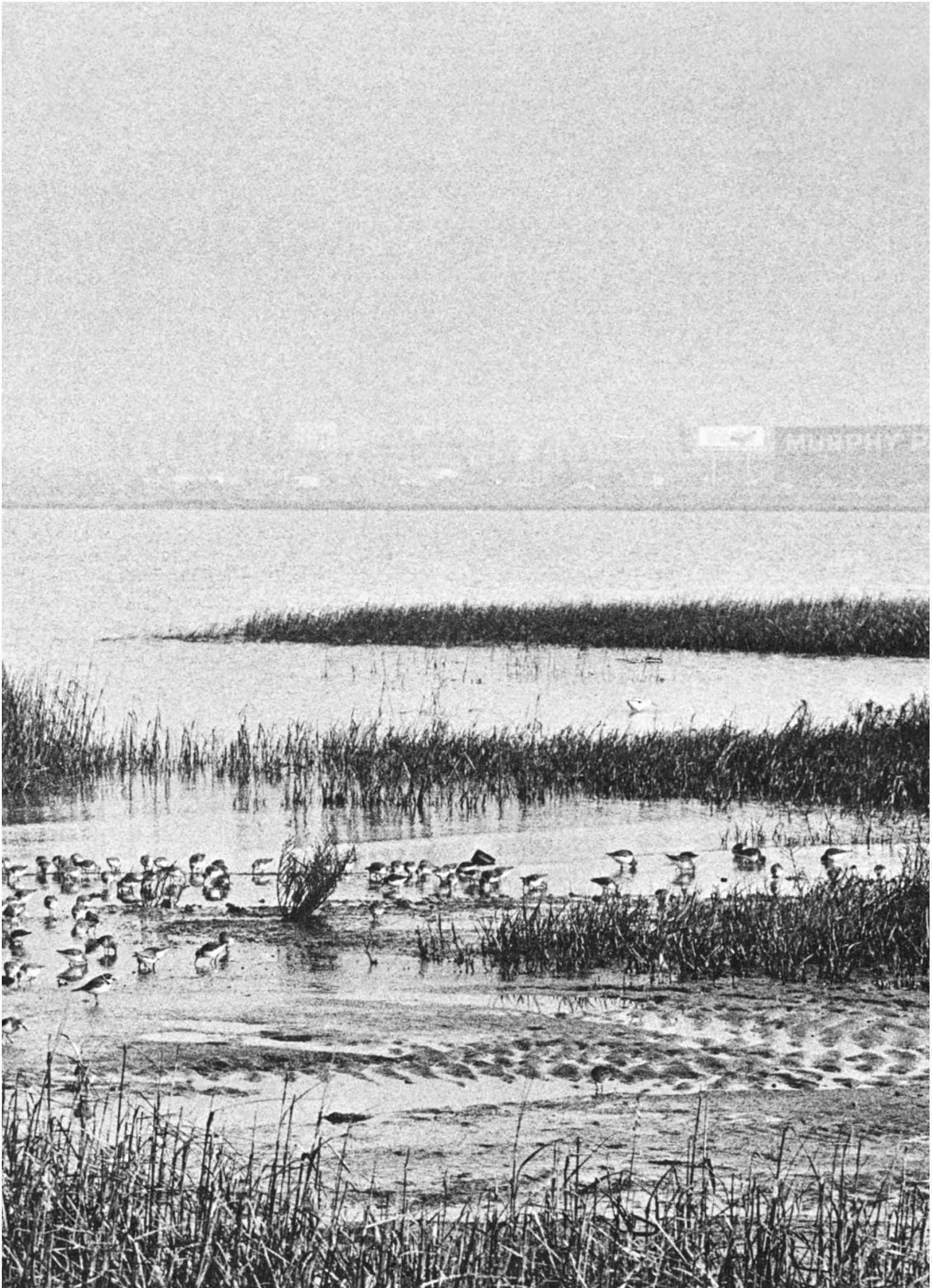
Part II
Objectives

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, Other Aquatic Organisms and Wildlife

Findings and Policies Concerning Fish, Other Aquatic Organisms and Wildlife in the Bay

Findings

a. Over the past 200 years, human actions have had a major effect on the form and natural functions of San Francisco Bay, resulting in a significant decrease in the size of the open waters of the Bay-from about 516,000 acres to 327,000 acres, an approximately 40 percent reduction-and notable changes in the types, locations, quality, and quantity of habitat for native and commercially important fish, other aquatic organisms (e.g., crabs, shrimp, zooplankton, oysters, submerged aquatic vegetation, seaweeds, and marsh vegetation) and wildlife. Loss or degradation of subtidal areas, tidal flats, tidal marshes and adjacent upland habitats, such as diked baylands, have been key factors in the population decline of many species of fish, other aquatic organisms and wildlife that depend on the Bay ecosystem for their existence.

b. At present, San Francisco Bay sustains nearly 500 species of fish, invertebrates, birds, mammals, insects and amphibians. It is an essential resting place, feeding area, and wintering ground for millions of birds on the Pacific Flyway. Nearly half of the state's waterfowl and shorebirds and two-thirds of the state's salmon pass through the Bay during their migrations.

c. Fish, other aquatic organisms and wildlife of the Bay benefit humans. They provide food, economic gain, and recreation. They are a resource for scientific research and education. No comprehensive estimate of the value of fish, other aquatic organisms and wildlife for these purposes is available, but they enhance the intrinsic value and aesthetic appeal of the Bay.

d. Conserving fish, other aquatic organisms and wildlife depends, among other things, upon availability of: (1) sufficient oxygen in the Bay waters; (2) adequate amounts of the proper foods; (3) sufficient areas for resting, foraging and breeding; (4) proper fresh water inflows, temperature, salt content, water quality, and velocity of the water; and (5) sufficient sediment supply. Requirements vary according to the species of fish, other aquatic organisms and wildlife. Conservation and restoration of complete habitats is essential to insure for future generations the benefit of fish, other aquatic organisms and wildlife in the Bay.

e. All parts of San Francisco Bay are important for the perpetuation of fish, other aquatic organisms and wildlife because any reduction of habitat reduces their numbers in some measure.

f. The wildlife refuges, some of which are shown on the Bay Plan Maps, include national wildlife refuges, state wildlife areas and ecological reserves, as well as other shoreline sites around the Bay whose primary purpose is: (1) the protection of threatened or endangered native plants, wildlife, and aquatic organisms; (2) the preservation and enhancement of unique habitat types or highly significant wildlife habitat; or (3) the propagation and feeding of aquatic life and wildlife.

g. Under the California Endangered Species Act, the Commission must assure that the projects it permits conserve fish, other aquatic organisms, wildlife and plants listed pursuant to the Act and the Commission may not authorize the "taking," as defined in the Act, of certain fish, wildlife or plant species without the authorization of the California Department of Fish and Wildlife. Further, under the federal Endangered Species Act and Marine Mammal Protection Act the Commission may not authorize a project that would result in the "taking" of fish, other aquatic organisms and wildlife, including marine mammals, identified pursuant to the Acts, without the authorization of the United States Fish and Wildlife Service or the National Marine Fisheries Service.

h. Under the federal Magnuson-Stevens Fisheries Conservation and Management

Act and the Endangered Species Act, San Francisco Bay is considered essential fish habitat and critical habitat for certain fish species, such as Chinook salmon and Delta smelt, by the National Marine Fisheries Service and the United States Fish and Wildlife Service because the Bay plays an essential role in their life cycles. The Magnuson-Stevens Act requires that the National Marine Fisheries Service provide conservation recommendations to federal and state agencies, such as the Commission, when a proposed project would have adverse impacts on essential fish habitat.

i. Regional frameworks, such as the San Francisco Bay Subtidal Habitat Goals Project report (2010), the USFWS Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California (2013), the Baylands Ecosystem Habitat Goals Science Update report (2015), and the San Francisco Bay Shoreline Adaptation Atlas (2019) detail restoration goals for Bay habitats and shoreline adaptation strategies. These frameworks are based on the best available science at the time of publication, and as knowledge evolves to reflect new data and understanding, new frameworks or updated frameworks may be developed to replace or supplement this work.

j. Current models indicate that as sea level rise progresses, many Bay habitats will be degraded or will change to other habitat types. Projects that place fill to offset habitat loss due to climate change effects and ensure that fish, other aquatic organisms, wildlife, and plants have habitat into the future may result in the conversion of one type of habitat into another and thus may result in a net loss of some habitat types and associated ecosystem functions. Habitat loss from project construction may be temporary, and may lead to a long-term net gain that ultimately offsets the loss of habitat to rising seas. However, the impacts of large-scale habitat type conversion are not well-understood, and habitat type conversion could result in unintended negative impacts on existing habitats and species. Therefore, it is necessary to place fill strategically to minimize near-term habitat loss while protecting Bay habitats over the long-term from the impacts of sea level rise.

k. Tidal marshes and tidal flats are particularly vulnerable to inundation from sea level rise, changes in sediment supply, and lack of migration space. Current scientific predictions of sea level rise and declining sediment supply support the likelihood that many marshes and mudflats may not be able to adapt to these changes, and may be lost or degraded by the end of the century if they are not able to accrete sediment and/or migrate to higher elevations. Placing sediment in appropriate locations will be necessary to ensure that species dependent on tidal marshes and tidal flats have sufficient habitat into the future. Placement of sediment will be particularly important in tidal marshes to build transition zones, increase marsh plain elevation, and create high tide refugia. Placement of sediment may also be necessary in shallow intertidal or subtidal areas to increase mudflat elevation or to increase sediment transport to adjacent marshes to increase marsh plain elevation. Little is known about how subtidal areas will adapt to sea level rise or the need for sediment in these areas. Limited knowledge about deep water habitats makes it difficult to predict how major changes, including sediment placement, in these areas may adversely affect fish, other aquatic organisms, and wildlife.

l. Bay habitats are dynamic, ever-evolving systems that are predicted to change even more with sea level rise. For projects in which fill is proposed, the amount of fill required to ensure the persistence of these habitats into the future will depend on the rate of sea level rise and the time horizon of the project. For example, more fill will likely be required to sustain marsh elevations through the year 2100 than through the year 2050. Placement of large volumes of fill to assist habitats in adapting to long-term sea level rise projections may not be immediately necessary and may result in unnecessary near-term loss of habitat and other impacts to the Bay. Placing smaller volumes of fill incrementally could serve the function of facilitating habitat adaptation to sea level rise while also minimizing impacts of fill to fish, other aquatic organisms, and wildlife. Smaller environmental perturbations that are similar in scale to a natural disturbance events,

such as sediment deposition following a flood event, are often more likely to allow habitats to adapt and rebound than a major perturbation that could take much longer for habitats and species to recover. However, in some cases, a larger, single placement of fill may be more feasible or result in fewer impacts to Bay natural resources.

Policies

1. To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased.

2. Native species, including candidate, threatened, and endangered species; species that the California Department of Fish and Wildlife, the National Marine Fisheries Service, and/or the U.S. Fish and Wildlife Service have listed under the California or Federal Endangered Species Act; and any species that provides substantial public benefits, as well as specific habitats that are needed to conserve, increase, or prevent the extinction of these species, should be protected, whether in the Bay or behind dikes. Protection of fish, other aquatic organisms, and wildlife and their habitats may entail placement of fill to enhance the Bay's ecological function in the near-term and to ensure that they persist into the future with sea level rise.

3. In reviewing or approving habitat restoration projects or programs the Commission should be guided by the best available science, including regional goals, and should, where appropriate, provide for a diversity of habitats for associated native aquatic and terrestrial plant and animal species.

4. The Commission should:

   (a) Consult with the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, whenever a proposed project may adversely affect an endangered or threatened plant, fish, other aquatic organism or wildlife species;

   (b) Not authorize projects that would result in the "taking" of any plant, fish, other aquatic organism or wildlife species listed as endangered or threatened pursuant to the state or federal Endangered Species Acts, or the federal Marine Mammal Protection Act, or species that are candidates for listing under these acts, unless the project applicant has obtained the appropriate "take" authorization from the U.S. Fish and Wildlife Service, National Marine Fisheries Service or the California Department of Fish and Wildlife; and

   (c) Give appropriate consideration to the recommendations of the California Department of Fish and Wildlife, the National Marine Fisheries Service or the U.S. Fish and Wildlife Service in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat.

5. The Commission may permit fill or a minimum amount of dredging in wildlife refuges necessary to enhance or restore fish, other aquatic organisms and wildlife habitat, or to provide appropriately located public facilities for wildlife observation, interpretation and education.

6. Allowable fill for habitat projects in the Bay should (a) minimize near term adverse impacts to and loss of existing Bay habitat and native species; (b) provide substantial net benefits for Bay habitats and native species; and (c) be scaled appropriately for the project and necessary sea level rise adaptation measures in accordance with the best available science. The timing, frequency, and volume of fill should be determined in accordance with these criteria.

7. Sediment placement for habitat adaptation should be prioritized in (1) subsided diked baylands, tidal marshes, and tidal flats, as these areas are particularly vulnerable to loss and degradation due to sea level rise and lack of necessary sediment supply, and/or in (2) intertidal and shallow subtidal areas to support tidal marsh, tidal flat, and eelgrass bed adaptation. In some cases, sediment placement for a habitat project in

deep subtidal areas may be authorized if substantial ecological benefits will be provided and the project aligns with current regional sediment availability and needs.

Amended October 2019

Water Quality

Findings and Policies Concerning Water Quality in the Bay

Findings

a. Pollutants are harmful substances that, when discharged into the environment, adversely affect the environment's physical, chemical, or biological properties. The San Francisco Bay Regional Water Quality Control Board's *Water Quality Control Plan, San Francisco Bay Basin* designates the beneficial uses of the waters of the Bay, such as recreational boating, swimming, fishing, navigation or aquatic habitat. Pollution occurs when pollutants unreasonably interfere with or adversely affect one or more of these beneficial uses. Pollutants can be divided into two types: point sources and nonpoint sources. Pollutants discharged from a distinct source, such as a pipe, are referred to as *point source* pollution. Other pollutant discharges are referred to as *nonpoint source* pollution because the pollution comes from diffuse sources such as oil and grease left on streets, and loose soil from construction sites. Stormwater or irrigation flows across land can transport and deposit pollutants into San Francisco Bay or into tributaries that flow to the Bay.

b. Water from approximately 40 percent of California drains into San Francisco Bay carrying with it pollutants from point and nonpoint sources. Up to 40,000 metric tons of at least 65 different pollutants enter the Bay annually. The vast majority of nonpoint source pollution entering the Bay originates outside the Commission's jurisdiction.

c. 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, has decreased significantly the pollutant levels in waste discharges from point sources, such as industries and sewage treatment plants, resulting in dramatic improvements to the Bay's water quality. However, the State Board considers San Francisco Bay to be an impaired waterbody because certain water quality standards are exceeded for trace metals, carcinogens and pathogens. The greatest sources of pollution are untreated urban and agricultural runoff.

d. Much of the Bay is threatened or impaired by combinations of different pollutants such as trace elements, pesticides, and petrochemical hydrocarbons. The contaminants of greatest concern are high levels of mercury and polychlorinated biphenyls (PCBs) in fish, water, and sediment. Elevated levels of contaminants adversely affect water-oriented recreation uses and impair Bay fish, other aquatic organisms, and wildlife. The state has issued health advisories recommending limits on human consumption of fish from the Bay and has had to close beaches because of water pollution. The public's use and enjoyment of the Bay will continue to be affected as long as the Bay's water quality is impaired.

e. Pollutants are widespread and water quality varies significantly throughout the Bay due to the locations of waste discharge and the capability of different parts of the Bay to disperse, flush, and assimilate pollutants.

f. Because of increased urbanization and changes in agricultural uses and practices in the Bay Area; urban and agricultural runoff is expected to increase substantially. Implementation of existing controls and prevention strategies, and the development of new controls and strategies, can reduce nonpoint source pollution in the Bay significantly.

g. The harmful effects of pollutants reaching the Bay can be reduced by maximizing the Bay's capacity to assimilate, disperse, and flush pollutants by maintaining and increasing: (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.

h. Tidal marshes and vegetated areas on the shoreline help prevent the degradation of water quality from nonpoint source pollution by: filtering out contaminants; intercepting runoff; transforming and storing sediment, nutrients, and certain heavy metals; keeping channels intact by slowing runoff; dampening wave action; and reducing channel scour and bank erosion. Vegetated treatment systems, such as constructed wetlands and other vegetated landscapes, can remove sediment and other pollutants from runoff and wastewater and can prevent pollutants from entering the Bay and its tributaries. Wetlands that are degraded by excessive pollutants no longer provide important water quality benefits, often become significant sources of pollution, and reduce oxygen in the water, making the Bay unsuitable for fish and other aquatic life.

i. The protection of the Bay ecosystem and human health from water pollution requires a comprehensive strategy that encompasses: (1) preventing pollution at its source; (2) controlling and reducing pollution; (3) substituting less toxic chemicals and products in the project development process; and (4) remediating and cleaning up existing contaminants.

j. Existing programs for controlling pollution, including stormwater management plans, Total Maximum Daily Load implementation plans, and construction site stormwater runoff and erosion and sediment controls, are effective in preventing and reducing Bay pollution.

k. Management measures for controlling, reducing or eliminating nonpoint source pollution include establishing best management practices, such as site planning or structural controls, new technologies, project siting criteria, and operating methods.

l. Impervious surfaces such as roads, parking lots, and buildings prevent water from slowly percolating into the ground. Water runoff can transport pollutants such as oil, pesticides and metals into the Bay. Grading and construction can result in excessive sediment reaching the Bay and its tributaries and change in hydraulics. Flow alterations can negatively affect Bay tributary streamside vegetation, riparian and subtidal habitats and can impede the movement of fish and other aquatic life.

m. The discharge of pollutants from urban areas can be controlled during site planning, con-struction, and post-construction. New development can be sited and designed to: (1) prevent pollutants from reaching waterways; (2) reduce impervious surfaces and maximize permeability; (3) protect important natural areas such as wetlands and riparian habitats; (4) minimize land disturbance to reduce

erosion; and (5) minimize disturbance of natural drainage features and vegetation to reduce excessive sedimentation.

n. Vegetation can help stabilize the Bay shoreline and tributary slopes and banks and can be used effectively to prevent or reduce excessive erosion and sediment deposition in the Bay. Vegetation can be used alone or in conjunction with conventional engineering techniques.

o. The State Water Resources Control Board is responsible for formulating and adopting state water quality control policy 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 Regional 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: Board resolutions; planning and policy development; adoption and enforcement of National Pollutant Discharge Elimination System permits; and of waste discharge requirements and water quality certification of the U.S. Army Corps of Engineers' permits, among other programs. The State Board, Regional Board and local governments regulate discharges from construction sites. The Department of Toxic Substances Control, Regional Board, and U.S. Environmental Protection Agency have the primary responsibility for the remediation and clean up of hazardous substances.

Policies

1. Bay water pollution should be prevented to the greatest extent feasible. The Bay's tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality. Fresh water inflow into the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses.

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 *Water Quality Control Plan, San Francisco Bay Basin* and should be protected from all harmful or potentially harmful pollutants. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Board should be the basis for carrying out the Commission's water quality responsibilities.

3. New projects should be sited, designed, constructed and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay by: (a) controlling pollutant sources at the project site; (b) using construction materials that contain non-polluting materials; and (c) applying appropriate, accepted and effective best management practices, especially where water dispersion is poor and near shellfish beds and other significant biotic resources.

4. When approving a project in an area polluted with toxic or hazardous substances, the Commission should coordinate with appropriate local, state and federal agencies to ensure that the project will not cause harm to the public, to Bay resources, or to the beneficial uses of the Bay.

5. The Commission should support the efforts of federal, state, and local agencies in developing nonpoint source pollution control programs.

6. To protect the Bay and its tributaries from the water quality impacts of nonpoint source pollution, new development should be sited and designed consistent with standards in municipal stormwater permits and state and regional stormwater management guidelines, where applicable, and with the protection of Bay resources. To offset impacts from increased impervious areas and land disturbances, vegetated swales, permeable pavement materials, preservation of existing

trees and vegetation, planting native vegetation and other appropriate measures should be evaluated and implemented where appropriate.

7. Whenever practicable, native vegetation buffer areas should be provided as part of a project to control pollutants from entering the Bay, and vegetation should be substituted for rock riprap, concrete, or other hard surface shoreline and bank erosion control methods where appropriate and practicable.

Amended June 2003

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.

Tidal Marshes and Tidal Flats

Findings and Policies Concerning Tidal Marshes and Tidal Flats Around the Bay

Findings

a. San Francisco Bay is comprised of a diversity of habitats. These habitats were formed and are sustained by the global forces of climate and sea level change, as well as the more local effects of topography; the ebb and flow of the daily tides; the volume, timing and location of fresh water inflow; and the availability and types of sediments on the bottom of the Bay and suspended in the water column. Bay habitats include subtidal areas, tidal flats, and tidal marsh; Bay-related habitats include diked baylands, such as salt ponds, managed marsh and agricultural baylands. Plants and animals require a variety of habitats to survive. For example, topsmelt (a fish species) utilize the shallow, protected sloughs of tidal marshes of the Bay, as well as open water during different times in their life cycle and daily feeding routine. The topsmelt is also food for many species of birds that inhabit the tidal marshes and upland are-as surrounding the Bay.

b. San Francisco Bay is a substantial part of the largest estuary along the Pacific shore of North and South America and is a natural resource of incalculable value. An estuary is a partially enclosed body of water formed where fresh water from rivers and streams meet and mix with salt water carried in from the ocean by the daily tides. Estuaries are places of transition that provide rich and diverse habitats for aquatic and upland plants and animals. The sheltered waters of estuaries support unique communities of plants and animals specially adapted for life in the region where rivers meet the coast. Estuaries provide ideal spots for migratory birds to rest and feed during their journeys and many species of fish and shellfish rely on the sheltered waters of estuaries as protected places to spawn.

c. Wetlands are transitional areas between upland and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Examples of wetland habitats associated with the Bay include tidal flats, tidal marshes, lagoons, managed wetlands, agricultural baylands, salt ponds, wastewater treatment ponds, and riparian forests.

d. Wetlands can alter and moderate flood flows, recharge groundwater, maintain stream flows, reduce and prevent shoreline erosion

by minimizing wave energy, and improve water quality by filtering surface runoff from surrounding lands. In addition, they trap sediments, thereby reducing the amount deposited in channels. Wetland plants help absorb available nitrogen, atmospheric sulfur, carbon dioxide and methane. Wetlands also are important habitat for the Bay's aquatic and upland plant and animal populations, serve as a primary link in the ecosystem's food chain, ensure the continued diversity of plant and animal communities, are an essential feeding and resting place for migratory birds on the Pacific Flyway, and provide needed and important open space and recreational opportunities in the Bay Area.

e. A transition zone or "ecotone" is an environment that blends the habitat of plants and animals from each of the bordering habitats such as tidal marsh and oak woodlands. Transition zones are important elements of wetland habitats. Around the Bay these zones contain a rich mixture of vegetation types, including many of the Bay's rare plants, and they provide food, shelter and high-tide refugia for wildlife, including the salt marsh harvest mouse and California black rail.

f. Over 137,000 acres of the Bay, its tidal marshes and tidal flats, have been diked from tidal action and include managed wetlands, agricultural baylands, salt ponds and wastewater treatment ponds. These habitats possess a particular importance in replacing habitat values lost with the elimination of the majority of the Bay's historic tidal marsh habitat, which may include: (1) providing high tide refuge and foraging habitat for species such as shorebirds and the salt marsh harvest mouse; (2) acting as a buffer between remaining tidal marshes, tidal flats and upland uses; (3) creating corridors for wildlife movement between upland habitats and the Bay; (4) retaining stormwater runoff and flood water; (5) filtering sediments and pollutants from stormwater flowing to the Bay; and (6) providing opportunities for recreation, research and education. Diked agricultural baylands, salt ponds and managed wetlands also offer the greatest opportunity to restore large parts of the Bay to tidal action.

g. The Baylands Ecosystem Habitat Goals Science Update report provides a regional vision of the types, amounts, and distribution of baylands habitats that are needed to restore and sustain a healthy Bay ecosystem, including restoration of 65,000 acres of tidal marsh. These recommendations were based on conditions of tidal inundation, salinity, and sedimentation in the 2010s. While achieving the regional vision would help promote a healthy, resilient Bay ecosystem, global climate change and sea level rise are expected to alter ecosystem processes in ways that may require new, regional targets for types, amounts, and distribution of habitats.

h. Tidal marshes, which include brackish and salt marshes, are vegetated wetlands subject to tidal action that occur throughout much of the Bay extending from approximately Mean Sea level to the maximum height of the tides. Established tidal marshes provide an essential and complex habitat for many species of fish, other aquatic organisms and wildlife. In the early 1800s, before diking and filling had begun, tidal marshes covered some 190,000 acres on the fringes of the Bay. Tidal marsh bordering the Bay now totals approximately 40,000 acres, a loss of approximately 80 percent of the Bay's historic tidal marshes.

i. Tidal marshes are an interconnected and essential part of the Bay's food web. Decomposed plant and animal material and seeds from tidal marshes wash onto surrounding tidal flats and into subtidal areas, providing food for numerous animals, such as the Northern pintail. In addition, tidal marshes provide habitat for insects, crabs and small fish, which in turn, are food for larger animals, such as the salt marsh song sparrow, harbor seal and great blue heron. Diking and filling have fragmented the remaining tidal marshes, degrading the quality of habitat and resulting in a loss of species and an altered community structure.

j. Tidal flats occur from the elevation of the lowest tides to approximately Mean Sea level and include mudflats, sandflats and shellflats. Mudflats comprise the largest area of tidal flat areas and support an extensive community of invertebrate aquatic organisms, e.g., diatoms, worms and shellfish, fish that

feed during higher tides, and plants such as algae and occasionally eelgrass. Shorebirds feed on tidal flats. Few mammals, however, inhabit tidal flats, the harbor seal being the most notable exception. Historically, around 50,000 acres of tidal flats occurred around the margins of the Bay, approximately 29,000 acres remain-a reduction of over 40 percent.

k. Landward marsh migration will be necessary to sustain marsh acreage around the Bay as sea level rises. As sea level rises, high-energy waves erode sediment from tidal flats and deposit that sediment onto adjacent tidal marshes. Marshes trap sediment and contribute additional material to the marsh plain as decaying plant matter accumulates. Tidal habitats respond to sea level rise by moving landward, a process referred to as transgression or migration. Low sedimentation rates, natural topography, development, and shoreline protection can block wetland migration. Transition zones, depending on the size and slope, provide high tide refugia for organisms as sea level rises, as well as important opportunities for marsh migration upslope and inland as sea level rises, but these functions and services are limited in the long-term unless transition zones are connected to uplands with higher elevations.

l. Sedimentation is an essential factor in the creation, maintenance and growth of tidal marsh and tidal flat habitat. The volume of sediment entering the Bay annually from the Sacramento and San Joaquin Delta exhibited a step decrease in water year 1999. As a result, the importance of sediment from local watersheds as a source of sedimentation in tidal marshes has increased. The Bay sediment load has exhibited no specific trend since that time, and changes in future sediment supply are difficult to predict. As sea level rise accelerates, the erosion of tidal marshes and tidal flats may also accelerate, thus potentially exacerbating shoreline erosion and adversely affecting the ecosystem and the sustainability of ecosystem restoration projects. To ensure that tidal marshes and tidal flats have an adequate supply of sediment, it is important to restore complete tidal wetland systems connected to the physical processes that sustain them. Reconnecting watersheds to intertidal habitats supports organic sediment production and inorganic sediment deposition. Further, the reconnection of tidal marshes to local tributaries will likely allow re-establishment of lost habitats such as adjacent brackish marsh and willow sausals.

m. Human actions, such as dredging, disposal, ecosystem restoration, and watershed management, can affect the distribution and amount of sediment available to sustain and restore wetlands. Research on Bay sediment transport processes is needed to understand the volume of sediment available to wetlands, including sediment imported to and exported from the Bay. Monitoring of these processes can inform management efforts to maintain an adequate supply of sediment for wetlands.

n. Buffers are areas established adjacent to a habitat to reduce the adverse impacts of surrounding land use and activities. Buffers also minimize additional loss of habitat from shoreline erosion resulting from accelerated sea level rise and allow tidal habitats to move landward. Buffer areas may be important for achieving the regional goals for the types, amounts, and distribution of habitats in the Baylands Ecosystem Habitat Goals report or future updates to these targets.

o. Plant and animal species not present in San Francisco Bay prior to European contact in the late 18th century, known as non-native species, which thrive and reproduce outside of their natural range have made vast ecological alterations to the Bay and have contributed to the serious reduction of native populations of certain plants and animals through: (1) predation; (2) competition for food, habitat, and other necessities; (3) disturbance of habitat; (4) displacement; or (5) hybridization. Many non-native species enter the Bay from commercial ship ballast water that is discharged into the Bay. Approximately 170 species have invaded the Bay since 1850, and possibly an additional 115 species have been deliberately introduced. By 2001, over 1,200 acres of recently restored tidal marshes have been invaded by introduced cordgrass species, such as salt meadow cordgrass, dense-flowered cordgrass, English cordgrass and smooth cordgrass. At present an average

of one new non-native species establishes itself in the Bay every 14 weeks. Control or eradication is a critical step in reducing the harm associated with non-native species.

p. Fill material, such as rock and sediments dredged from the Bay, can enhance or beneficially contribute to the restoration of tidal marsh and tidal flat habitat by: (1) raising areas diked from the Bay to an elevation that will help accelerate establishment of tidal marsh; and (2) establishing or recreating rare Bay habitat types.

q. Natural site characteristics, including geomorphic setting, suspended sediment concentration, current velocities, water depth, benthic substrate, salinity, light availability, habitat connectivity, and other factors, shape which habitats can establish and be sustained in any given part of the Bay. Siting a project in a location where the appropriate natural processes do not exist to sustain it could result in negative impacts on the Bay, project failure, and wasted resources. However, the natural processes that sustain some existing tidal marshes now may not sustain them in the future due to rising seas and other environmental changes. In some cases, regular management and intervention is justified for habitats that support important ecosystem services (e.g. habitat connectivity, endangered species habitat, or interim habitat).

r. Pilot and demonstration projects provide an opportunity for research and testing concepts and techniques before implementing experimental projects on a large scale.

s. Coordinated regional monitoring has the potential to improve understanding of regional status and trends, identify restoration needs, improve project design, and reduce monitoring costs and requirements for individual projects by synthesizing and analyzing information from habitat projects across the region.

t. Adaptive management is a cyclic, learning-oriented approach that is especially useful for complex environments, which are often characterized by relatively high levels of uncertainty about system processes and the potential for different ecological, social and economic outcomes from alternative management options. Effective adaptive management requires setting clear and measurable objectives, collecting data, reviewing current scientific observations, monitoring the results of actions, and integrating this information into future actions. Through this process, adaptive management also documents best practices and scientific findings that can be shared and used in designing and managing similar projects. Adaptive management of habitat projects can be particularly useful in large complex projects, and when project design, outcomes, conditions, and impacts are uncertain. In these situations, adaptive management can respond to evolving conditions and thereby increase the likelihood of project success and reduce the risk of impacts to Bay organisms and ecosystems.

u. The extent of uncertainty about appropriate habitat project design (including likelihood of success and risk of impacts) varies depending on factors including but not limited to: the project's goals, lifespan, scale, existing condition relative to proposed restored condition, location, and surrounding infrastructure. Projects with higher levels of uncertainty or risk may require more intensive monitoring and adaptive management.

Policies

1. Tidal marshes and tidal flats should be conserved to the fullest possible extent. Filling, diking, and dredging projects that would substantially harm tidal marshes or tidal flats should be allowed only for purposes that provide substantial public benefits and only if there is no feasible alternative.

2. Any proposed filling, diking, or dredging project should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects.

3. Projects should be sited and designed to avoid, or if avoidance is infeasible, minimize adverse impacts on any transition zone

present between tidal and upland habitats. Where a transition zone does not exist and it is feasible and ecologically appropriate, shoreline projects should be designed to provide a transition zone between tidal and upland habitats.

4. To provide for the restoration of Bay wetlands, state, regional, and local government land use, tax, and funding policies should not lead to the conversion of restorable lands to uses that would preclude or deter potential restoration. The public should make every effort to acquire these lands for the purpose of habitat restoration and wetland migration.

5. Where feasible, former tidal marshes and tidal flats that have been diked from the Bay should be restored to tidal action in order to replace lost historic wetlands or should be managed to provide important Bay habitat functions, such as resting, foraging and breeding habitat for fish, other aquatic organisms, and wildlife. As recommended in the Baylands Ecosystem Habitat Goals Update report (2015), approximately 65,000 acres of areas diked from the Bay should be restored to tidal action and supported to maintain a healthy Bay ecosystem on a regional scale. Regional ecosystem targets should be updated periodically to incorporate the best available science to guide regionally appropriate conservation, restoration, and climate adaptation. To the greatest extent feasible, habitat projects should be sustained by natural processes; increase habitat connectivity; restore hydrological connections; provide opportunities for endangered species recovery; and provide opportunities for landward migration of Bay habitats. As conditions change, management measures may be needed to maintain habitat and ecological function in some areas.

6. Any habitat project should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and as appropriate, an adaptive management plan. Design and evaluation of the project should include an analysis of: (a) how the project's adaptive capacity can be enhanced so that it is resilient to sea level rise and climate change; (b) the impact of the project on the Bay's and local embayment's sediment transport and budget; (c) localized sediment erosion and accretion; (d) the role of tidal flows; (e) potential invasive species introduction, spread, and their control; (f) rates of colonization by vegetation; (g) the expected use of the site by fish, other aquatic organisms and wildlife; (h) an appropriate buffer, where feasible, between shoreline development and habitats to protect wildlife and provide space for marsh migration as sea level rises; (i) site characterization; (j) how the project adheres to regional restoration goals; (k) whether the project would be sustained by natural processes; and (l) how the project restores, enhances, or creates connectivity across Bay habitats at a local, sub-regional, and/or regional scale.

7. If a habitat project's success criteria have not been met, benefits and impacts should be analyzed to determine whether appropriate adaptive measures should be implemented. If substantial adverse impacts to the Bay and/or native or commercially important species have occurred, the project should be further modified to reduce its impacts.

8. The level of design; amount, duration, and extent of monitoring; and complexity of the adaptive management plan required for a habitat project should be consistent with the purpose, size, impact, level of uncertainty, and/or expected lifespan of the project. Habitat projects should have a funding strategy for monitoring and adaptive management of the project, commensurate with the level of monitoring and adaptive management that is required for the project, to demonstrate that the applicant has considered costs and identified potential funding sources for any necessary monitoring and management.

9. The Commission should encourage and support regional efforts to collect, analyze, share, and learn from habitat monitoring data. Where feasible and appropriate, the Commission should encourage monitoring for habitat restoration projects that coordinates with regional efforts and improves the value and usefulness of data.

10. Based on scientific ecological analysis, project need, and consultation with the relevant federal and state resource agencies, fill may be authorized for habitat enhancement, restoration, or sea level rise adaptation of habitat.

11. The Commission should encourage and authorize pilot and demonstration projects that address sea level rise adaptation of Bay habitats. These projects should include appropriately detailed experimental design and monitoring to inform initial and future work. Project progress and outcomes should be analyzed and reported expeditiously. The size, design, and management of pilot and demonstration projects should be such that it will minimize the project's potential to negatively impact Bay habitats and species.

12. The Commission should encourage and support research on:

    (a) Habitat restoration, enhancement, and creation approaches, including strategies for: increasing resilience to sea level rise, placing fill, evaluating habitat type conversion, enhancing habitat connectivity, and improving transition zone design;

    (b) The estuary's sediment processes;

    (c) Detection and monitoring of invasive species and regional efforts for eradication of specific invasive species.

Amended October 2019

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, 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

Subtidal Areas

Findings and Policies Concerning Subtidal Areas in the Bay

Findings

a. The subtidal areas of the Bay encompass the land and water below mean low tide and are intricately tied to tidal flats and tidal marshes and are also linked to diked former parts of the Bay such as salt ponds, managed wetlands, agricultural baylands, and adjacent upland habitats. These areas include both shallow and deep segments of the Bay and are important for fish, other aquatic organisms and wildlife, such as bottom-dwelling benthic organisms, seabirds, waterfowl and some mammals, such as harbor seals, that move back and forth between deep and shallow water. The Bay's subtidal areas also serve as a corridor for fish, other aquatic organisms and wildlife species moving between the Ocean and the Delta and other local rivers and streams entering the Bay.

b. Physical dynamics of the water column, such as fronts (the boundary between two dissimilar masses of water), eddies (a current of water running contrary to the main current), and retention zones (areas where tidal flows slow or stop due to either fresh water incursions or prominent bathymetric features), affect where fish concentrate and consequently where other species, such as seabirds and harbor seals, feed.

c. Tidal and fresh water flows influence all parts of the Bay and move salt, sediment, and other substances, such as plankton, throughout it. For example, flows over shallow subtidal areas resuspend and deposit sediment, which continually shapes the Bay, tidal flats and tidal marshes, while flows through deep subtidal areas are critical to salt transport throughout the Bay ecosystem. In addition, many fish, other aquatic organisms and wildlife use different parts of the Bay during their life cycles, and are strongly influenced by variations in physical processes.

d. Populations of many native fresh water and estuarine fish, marine mammals, and birds in the Bay, as well as certain native zooplankton and phytoplankton in Suisun Marsh, have declined due to increased pollutants, decreased freshwater flows, loss of habitat and an increased prominence of invasive species.

e. The mixing zone, also referred to as the entrapment or null zone, is centered in Suisun Bay where less-dense, fresh water flowing seaward out of the Delta and more-dense, salt water flowing landward on the tides into the Bay from the Pacific Ocean meet and mix producing an abundance of suspended nutrients and creating one of the Bay's most productive areas for fish and other aquatic organisms. Mixing zones also occur at a smaller scale where rivers and streams flowing into the Bay meet tidal waters.

f. Some parts of the Bay are particularly important to certain species of fish, other aquatic organisms and wildlife due to their high native biodiversity, productivity or scarcity (e.g., deep water over sand shoals, the mixing zone, oyster reefs, shallow and calm areas, eelgrass beds, areas where seaweed is found, and where tidal eddies, retention zones and fronts concentrate prey).

g. The Bay is a dynamic ecosystem influenced by natural processes on tidal and seasonal scales, as well as by events that occur annually or on longer-term scales. The depth and shape of the Bay (its bathymetry) is at any moment the result of the interacting forces of erosion and deposition of sediment. This natural balance has changed during the past 150 years due to such human actions as hydraulic mining (increased sediment input), dam construction (reduced sediment input), water diversion, filling, diking, and dredging, all of which have significantly altered the Bay's historic sedimentary processes.

h. Unlike land-based habitats, the Bay's subtidal areas are not easily divided into habitat classification categories. However, location can be very important. For example, fronts, stratification, turbulence, wastewater input, and fish aggregation can be quite local in nature. Furthermore, the value of a particular subtidal area to a species is influenced by the Bay's physical characteristics (including sediment type, depth, salinity, temperature and currents), by process (such as sediment movement, sand replenishment, wind and wave action, erosion and deposition), and biological features (including concentration of food or linkages between habitats). Thus, although general guidelines can be developed

on a regional scale, the evaluation of specific projects requires knowledge of local conditions. In particular, local bathymetric features, which may have the greatest influence on physical, chemical, or biological properties, should receive great attention, since small changes in bathymetry may have unexpectedly large influences.

i. Major gaps in scientific knowledge exist about the subtidal areas of the Bay due to the dynamic nature of the system and the complexity of linkages between subtidal areas and the fish, other aquatic organisms and wildlife which depend upon them to rest, forage and breed.

j. Fill material, such as rock, oyster shells and sediments dredged from the Bay, or hybrid materials (e.g. mixtures of native sand, shell, and concrete), can enhance or beneficially contribute to the restoration of subtidal habitat by: (1) creating varied subtidal areas beneficial to aquatic species, such as Pacific herring, and other wildlife including birds; (2) restoring, creating, or enhancing native oyster populations and other nearshore shellfish beds that benefit multiple species; (3) enhancing subtidal plant communities, such as eelgrass beds; and (4) recreating the bathymetry of disturbed areas, such as dredged channels.

k. Pilot and demonstration projects provide an opportunity for research and testing concepts and techniques before implementing experimental projects on a large scale.

l. Coordinated regional monitoring has the potential to improve understanding of regional status and trends, identify restoration needs, improve project design, and reduce monitoring costs and requirements for individual projects by synthesizing and analyzing information from habitat projects across the region.

m. The San Francisco Bay Subtidal Habitat Goals Report (2010) incorporates the best available science at the time of publication; establishes regional consensus on the science needed to improve our understanding of subtidal areas; and determines specific subtidal habitats that should be conserved, restored, or created. As knowledge of these areas improve, the regional goals report may be updated.

n. Adaptive management is a cyclic, learning-oriented approach that is especially useful for complex environments, which are often characterized by relatively high levels of uncertainty about system processes and the potential for different ecological, social and economic outcomes from alternative management options. Effective adaptive management requires setting clear and measurable objectives, collecting data, reviewing current scientific observations, monitoring the results of actions, and integrating this information into future actions. Through this process, adaptive management also documents best practices and scientific findings that can be shared and used in designing and managing similar projects. Adaptive management of habitat projects can be particularly useful in large complex projects, and when project design, outcomes, conditions, and impacts are uncertain. In these situations, adaptive management can respond to evolving conditions and thereby increase the likelihood of project success and reduce the risk of impacts to Bay organisms and ecosystems.

o. The extent of uncertainty about appropriate habitat project design (including likelihood of success and risk of impacts) varies depending on factors including but not limited to: the project's goals, lifespan, scale, existing condition relative to proposed restored condition, location, and surrounding infrastructure. Projects with higher levels of uncertainty or risk may require more intensive monitoring and adaptive management.

p. Natural site characteristics, including geomorphic setting, suspended sediment concentration, current velocities, water depth, benthic substrate, salinity, light availability, habitat connectivity, and other factors shape which habitats can establish and be sustained in any given part of the Bay. Siting a project in a location where the appropriate natural processes do not exist to sustain it could result in negative impacts on the Bay, project failure, and wasted resources.

Policies

1. Any proposed filling or dredging project in a subtidal area should be thoroughly evaluated to determine the local and Bay-wide effects of the project on: (a) the possible introduction or spread of invasive species; (b) tidal hydrology and sediment movement; (c) fish, other aquatic organisms and wildlife; (d) aquatic plants; and (e) the Bay's bathymetry. Projects in subtidal areas should be designed to minimize and, if feasible, avoid any harmful effects.

2. Subtidal areas that are scarce in the Bay or have an abundance and diversity of fish, other aquatic organisms and wildlife (e.g., eelgrass beds, sandy deep water or underwater pinnacles) should be conserved. Filling, changes in use, and dredging projects in these areas should therefore be allowed only if: (a) there is no feasible alternative; and (b) the project provides substantial public benefits.

3. Any subtidal habitat project should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and as appropriate, an adaptive management plan. Design and evaluation of the project should include an analysis of: (a) the ecological need for the project; (b) the effects of relative sea level rise; (c) the impact of the project on regional and local sediment budget and transport; (d) localized sediment erosion and accretion; (e) the role of tidal flows; (f) potential invasive species introduction, spread, and control; (g) rates of colonization by vegetation, where applicable; (h) the expected use of the site by fish, other aquatic organisms and wildlife; (i) characterization of and changes to local bathymetric features; (j) how the project will adhere to the best available and regionally appropriate science on subtidal restoration and conservation goals; and (k) whether the project would be sustained by natural processes.

4. If a habitat project's success criteria have not been met, benefits and impacts should be analyzed to determine whether appropriate adaptive measures should be implemented. If substantial adverse impacts to the Bay or native or commercially important species have occurred, the project should be further modified to reduce its impacts.

5. The level of design; amount, duration, and extent of monitoring; and complexity of the adaptive management plan required for a habitat project should be consistent with the purpose, size, impact, level of uncertainty, and/or expected lifespan of the project. Habitat projects should have a funding strategy for monitoring and adaptive management of the project, commensurate with the level of monitoring and adaptive management that is required for the project, to demonstrate that the applicant has considered costs and identified potential funding sources for any necessary monitoring and management.

6. The Commission should encourage and support regional efforts to collect, analyze, share, and learn from habitat monitoring data. Where feasible and appropriate, the Commission should encourage monitoring for habitat restoration projects that coordinates with regional efforts and improves the value and usefulness of data.

7. Subtidal restoration projects should be designed to: (a) promote an abundance and diversity of fish, other aquatic organisms and wildlife; (b) restore rare subtidal areas; (c) establish linkages between deep and shallow water and tidal and subtidal habitat in an effort to maximize habitat values for fish, other aquatic organisms and wildlife; or (d) expand open water areas in an effort to make the Bay larger.

8. Based on scientific ecological analysis and consultation with the relevant federal and state resource agencies, fill may be authorized for habitat enhancement, restoration, or sea level rise adaptation of habitat if the Commission finds that no other method of enhancement or restoration except filling is feasible.

9. The Commission should encourage and authorize pilot and demonstration projects that address sea level rise adaptation of Bay habitats. These projects should include appropriately detailed experimental design and monitoring to inform initial and future work. Project progress and outcomes should be analyzed and reported expeditiously. The size, design, and management of pilot and demonstration projects should be such that it will minimize the project's potential to negatively impact Bay habitats and species.

10. The Commission should continue to support and encourage expansion of scientific information on the Bay's subtidal areas, including: (a) inventory and description of the Bay's subtidal areas; (b) the relationship between the Bay's physical regime and biological populations; (c) sediment dynamics, including sand transport, and wind and wave effects on sediment movement; (d) oyster shell transport; (e) areas of the Bay used for spawning, birthing, nesting, resting, feeding, migration, among others, by fish, other aquatic organisms and wildlife; (f) where and how habitat restoration, enhancement, and creation should occur considering species/habitat needs and suitable project sites; and (g) if, where, and what type of habitat type conversion may be acceptable.

Amended October 2019

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

Environmental Justice and Social Equity

Findings and Policies Concerning Environmental Justice and Social Equity Around the Bay

Findings

a. Throughout the 1990s, federal and state governments began including environmental justice in law and policy to ensure that people regardless of race, culture, and income were treated fairly. This came in response to the environmental justice movement that protested discriminatory and unfair policies implemented at all levels of government resulting in generations of communities of color facing: persistent poverty; poor public health; inadequate public services and infrastructure; disproportionate exposure to polluted air, water, and soil; and underrepresentation in policymaking. The co-location of incompatible land uses, aggregation of industrial development, lack of enforcement over polluting land uses, and prioritization of business interests over public health have resulted in disproportionate environmental burdens and adverse health issues for many low-income communities of color. The San Francisco Bay Area is no exception to these development patterns as many land uses with noxious impacts are co-located with low-income communities of color.

b. The Commission, as one of the agencies involved in the entitlement process, has played a role in approving development and any consequential injustices. Many industrial land uses around the Bay were established prior to the Commission's existence. Although the Commission neither initiates projects nor has any authority over municipal zoning or siting authority, through its permitting authority, the Commission has approved additional development projects to existing ports, oil and gas operations, sewage and wastewater treatment plants, and heavy industry in or near low-income communities of color around the Bay Area. Moreover, the Commission's Priority Use Areas, intended to minimize the necessity for future Bay fill, has also facilitated the aggregation of pollution sources within areas designated for Port and Water-Related Industry Priority Use Areas.

   Part of the Commission's founding mandate is to encourage the development of the Bay and its shoreline to their highest potential with a minimum of Bay fill, as expressed in the McAteer-Petris Act and *San Francisco Bay Plan*. Without explicitly addressing and accounting for potential negative impacts to low-income communities of color, the Commission's encouragement of such development patterns may have inadvertently contributed to the physical and cultural displacement of these Bay Area communities.

c. The Commission recognizes that California Native American communities have also faced many environmental injustices and social inequities. However, the Commission has not dedicated institutional resources to tribal issues and cultivating relationships with California Native American communities. As a result, these issues have not been addressed in the Bay Plan. The Commission acknowledges the need to build these relationships and address tribal issues going forward.

d. Under Title VI of the Civil Rights Act of 1964 and California Government Code §11135, the Commission's actions when considering and acting on proposed projects and requiring public access to the Bay and its shoreline should be non-discriminatory for all people regardless of race, national origin, ethnic group identification religion, age, sex, sexual orientation, color, genetic information, or disability.

e. The State of California defines *environmental justice* as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws,

regulations, and policies." (California Government Code §65040.12(e)).

f. According to the U.S. Environmental Protection Agency "*fair treatment* means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies." (Guidance on Considering Environmental Justice During the Development of a Regulatory Action).

g. Addressing social equity in policy is essential for the economy, health of a population, and community well-being. Additionally, addressing social equity in climate policies is vital to building resilience. In its 2017 General Plan Guidelines, the Governor's Office of Planning and Research includes the following definition for *social equity*: "The fair, just, and equitable management of all institutions serving the public directly or by contract; the fair, just and equitable distribution of public services and implementation of public policy; and the commitment to promote fairness, justice, and equity in the formation of public policy." (Governor's Office of Planning and Research 2017 General Plan Guidelines).

h. The Commission recognizes the importance of low-income communities of color as invaluable stakeholders and is committed to uplifting the voices of communities who have been historically excluded from decision-making processes. While there is no widespread agreement on terminology to describe communities with certain attributes, for the purposes of the Bay Plan, the following definitions are used:

   The State of California defines *disadvantaged communities* as including, but not limited to "[…] (a) Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation; and (b) Areas with concentrations of people that are of low-income, high unemployment, low levels of home ownership, high rent burden, sensitive populations, or low levels of educational attainment." (California Health and Safety Code §39711).

   The Commission recognizes that due to historic and ongoing marginalization, social and economic structures influence a person or community's ability to prepare for, respond to, or recover from a flood event. In the context of environmental justice, very low-income communities and/or communities of color are particularly important, as these demographic factors compound other relevant indicators. The co-location of areas with current and future flood risk and high concentrations of households exhibiting factors that can reduce access to or capacity for preparedness and recovery are therefore considered *vulnerable.*

   Additionally, contamination indicators are included in measuring vulnerability. These indicators represent degradation or threats to communities and the natural environment from pollution. The presence of contaminated lands and water raises health and environmental justice concerns, which may worsen with flooding from storm surge and sea level rise, as well as associated groundwater level changes.

   Underrepresented community is used to describe those who have been historically and are still systematically excluded from political and policy-making processes, which includes many disadvantaged and vulnerable communities.

i. Meaningfully involving impacted communities is essential to addressing environmental justice. According to the U.S. Environmental Protection Agency, *meaningful involvement* means "(1) people have an opportunity to participate in decisions about activities that may affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) community concerns will be considered in the decision-making process; and (4) decision makers will seek out and facilitate the involvement of those potentially affected." (Guidance on Considering Environmental Justice During the Development of a Regulatory Action).

j. Drawing on the expertise of environmental justice and community-based organizations, the Commission has committed to the following guiding principles to integrate environmental justice and social equity into its mission. The Commission will:

- Recognize and acknowledge the California Native American communities who first inhabited the Bay Area and their cultural connection to the natural resources of the region.

- Maintain its commitment to ensuring that the Bay remains a public resource, free and safe for all to access and use regardless of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, genetic information, or disability.

- Continually strive to build trust and partnerships with underrepresented communities and community-based organizations.

- Endeavor to eliminate disproportionate adverse economic, environmental, and social project impacts caused by Commission actions and activities, particularly in disadvantaged and vulnerable communities.

- Ensure that the needs of vulnerable shoreline communities are addressed as the Commission assists all stakeholders plan for current and future climate hazards.

- Work collaboratively and coordinate with all stakeholders to address issues of environmental justice and social equity.

- Continually build accountability, transparency, and accessibility into its programs and processes.

k. Equitable and culturally-relevant community outreach and engagement is at the heart of environmental justice and necessary for meaningful involvement. Many public processes are currently not accessible to all, as there are barriers to participation for low-income people, working people, parents and guardians, people of color, people that have limited English language skills, people with disabilities, people with limited transportation options, and others. Meaningfully involving underrepresented communities may require additional and more targeted efforts, such as equitable and culturally-relevant outreach and engagement. Consistent community outreach and engagement from the start of a project and throughout project design, permitting, and construction are necessary for addressing environmental justice and social equity. If outreach and engagement are indeed conducted from the onset of the project, much of this would, and should, occur during the local government's discretionary approval process prior to the Commission's involvement.

l. Identifying whether a community would be disproportionately impacted by a project is an initial step in addressing environmental justice. Taking steps to reduce such disproportionality can help ensure people are being treated fairly regardless of race, culture, and income.

m. As local governments retain most land use authority in California, collaborating and coordinating with local governments in the development of their general plans and zoning ordinances can aid in creating an environmentally just and socially equitable Bay Area. Many issues related to environmental justice and social equity may fall outside the Commission's authority or jurisdiction but may be within the purview of another federal, state, or regional agency. Collaborating and working across sectors and authorities can help to address environmental justice and social equity.

Policies

1. The Commission's guiding principles on environmental justice and social equity should shape all of its actions and activities.

2. Since addressing issues of environmental justice and social equity should begin as early as possible in the project planning process, the Commission should support, encourage, and request local governments to include environmental justice and social equity in their

general plans, zoning ordinances, and in their discretionary approval processes. Additionally, the Commission should provide leadership in collaborating transparently with other agencies on issues related to environmental justice and social equity that may affect the Commission's authority or jurisdiction.

3. Equitable, culturally-relevant community outreach and engagement should be conducted by local governments and project applicants to meaningfully involve potentially impacted communities for major projects and appropriate minor projects in underrepresented and/or identified vulnerable and/or disadvantaged communities, and such outreach and engagement should continue throughout the Commission review and permitting processes. Evidence of how community concerns were addressed should be provided. If such previous outreach and engagement did not occur, further outreach and engagement should be conducted prior to Commission action.

4. If a project is proposed within an underrepresented and/or identified vulnerable and/or disadvantaged community, potential disproportionate impacts should be identified in collaboration with the potentially impacted communities. Local governments and the Commission should take measures through environmental review and permitting processes, within the scope of their respective authorities, to require mitigation for disproportionate adverse project impacts on the identified vulnerable or disadvantaged communities in which the project is proposed.

Adopted October 2019

Climate Change

Findings and Policies Concerning Climate Change Around the Bay

Findings

a. Greenhouse gases naturally reside in the earth's atmosphere, absorb heat emitted from the earth's surface, and radiate heat back to the surface causing the planet to warm. This natural process is called the "greenhouse effect." Human activities since industrialization have increased the emissions of greenhouse gases through the burning of fossil fuels. The accumulation of these gases in the atmosphere is causing the planet to warm at an accelerated rate.

b. The future extent of global warming is uncertain. It will be driven largely by future greenhouse gas emissions levels, which will depend on how global development proceeds. The United Nations Intergovernmental Panel on Climate Change (IPCC) developed a series of global development scenarios and greenhouse gas emissions scenarios for each development scenario. These emissions scenarios have been used in global models to develop projections of future climate, including global surface temperature and precipitation changes.

c. Global surface temperature increases are accelerating the rate of sea level rise worldwide through thermal expansion of ocean waters and melting of land-based ice (e.g., ice sheets and glaciers). Bay water level is predicted to rise by a corresponding amount. In the last century, sea level in the Bay rose nearly eight inches. Derived from the IPCC 6th Assessment Report and the 2022 Federal Sea Level Rise Technical Report, in 2024 the California Ocean Protection Council (OPC) updated its sea level rise projections (relative to sea level in 2000) for the state, along with site specific estimates for 14 tide gauges along the California Coast. These projections extend to 2150 with 5 scenarios for each decade: Low, Intermediate-Low, Intermediate, Intermediate-High, and High. The state recommends using the Intermediate to High scenarios to inform sea level rise planning and project decisions. The recommended statewide averages range from 0.8 to 1.2 feet by 2050, 3.1 to 6.6 feet by 2100, and 6.1 to 11.9 feet by 2150. Although the OPC values are generally recognized as the best science-based sea level rise projections for California, scientific uncertainty remains regarding the pace and amount of

sea level rise. As additional data are collected and analyzed, sea level rise projections will likely change over time and OPC updates its guidelines regularly.

d. Climate change will alter key factors that contribute to shoreline flooding, including sea level and storm frequency and intensity. During a storm, low air pressure can cause storm surge (a rapid rise in water level) and increased wind and wave activity can cause wave run up, which will be higher as sea level rises. These storm events can be exacerbated by El Niño events, which generally result in persistent low air pressure, greater rainfall, high winds and higher sea level. The coincidence of intense winter storms, extreme high tides, and high runoff, in combination with higher sea level, will increase the frequency and duration of shoreline flooding long before areas are permanently inundated by sea level rise alone.

e. Over time, shoreline areas currently vulnerable to temporary flooding from storm events may be permanently inundated. Sea level rise will also exacerbate groundwater rise. In some low-lying areas, the groundwater table may reach the surface and cause emergent groundwater flooding. Groundwater rise poses unique challenges for infrastructure and may risk mobilizing contaminants from toxic sites. Much of the developed shoreline may require new or upgraded shoreline protection to reduce damage from flooding. Shoreline areas that have subsided are especially vulnerable to sea level rise and may require more extensive shoreline protection. The Commission, along with other agencies such as the National Oceanic and Atmospheric Administration, the Federal Emergency Management Agency, the United States Army Corps of Engineers, cities, counties, and flood control districts, is responsible for protecting the public and the Bay ecosystem from flood hazards. This can be best achieved by using a range of scientifically based scenarios, including projections, which correspond to higher rates of sea level rise. In planning and designing projects for the Bay shoreline, it is prudent to rely on the most current science-based and regionally specific projections of future sea level rise, develop strategies and policies that can accommodate sea level rise over a specific planning horizon (i.e., adaptive management strategies), and thoroughly analyze new development to determine whether it can be adapted to sea level rise..

f. Natural systems and human communities are considered to be resilient when they can absorb and rebound from the impacts of weather extremes or climate change and continue functioning without substantial outside assistance. Systems that are currently under stress often have lower adaptive capacity and may be more vulnerable or susceptible to harm from climate change impacts. Human communities with adaptive capacity can adjust to climate change impacts by taking actions to reduce the potential damages, taking advantage of new opportunities arising from climate change, and accommodating the impacts. Understanding vulnerabilities to climate change is essential for assessing climate change risks to a project, the Bay or the shoreline. Risk is a function of the likelihood of an impact occurring and the consequence of that impact. Climate change risk assessments identify and prioritize issues that can be addressed by adaptation strategies.

g. In the context of climate change, mitigation refers to actions taken to reduce greenhouse gas emissions, and adaptation refers to actions taken to address potential or experienced impacts of climate change that reduce risks. Adaptation actions that protect existing development and infrastructure can include protecting shorelines, promoting appropriate infill development, and designing new construction to be resilient to sea level rise. Another option is relocating structures out of flood and inundation zones. Some actions can integrate adaptation, mitigation, and flood protection strategies and may be cost-effective when implemented before sea level rises. For example, restoring tidal marshes sequesters carbon, provides flood protection and provides habitat, and may protect lives, property and ecosystems. Identifying appropriate adaptation strategies requires complex policy considerations. Implementing many adaptation strategies will require action and funding by federal, state, regional and

local agencies with planning, funding and land use decision-making authority beyond the Commission's jurisdiction.

h. In the context of sea level rise adaptation, it is likely that myriad innovative approaches will emerge, likely including financing mechanisms to spread equitably the costs of protection from sea level rise, design concepts and land management practices. Effective, innovative adaptation approaches minimize public safety risks and impacts to critical infrastructure; maximize compatibility with and integration of natural processes; are resilient over a range of sea levels, potential flooding impacts and storm intensities; and are adaptively managed. Developing innovative adaptation approaches will require financial resources, testing and refinement to ensure that they effectively protect the Bay ecosystem and public safety before they are implemented on a large scale. Developing the right mix of approaches would best be accomplished through a comprehensive regional adaptation strategy developed though a process involving various stakeholders and local, regional, state and federal agencies.

i. Adaptive management is a cyclic, learning-oriented approach that is especially useful for complex environmental systems characterized by high levels of uncertainty about system processes and the potential for different ecological, social and economic impacts from alternative management options. Effective adaptive management requires setting clear and measurable objectives, collecting data, reviewing current scientific observations, monitoring the results of policy implementation or management actions, and integrating this information into future actions.

j. The principle of sustainability embodies values of equity, environmental and public health protection, economic vitality and safety. The goal of sustainability is to conduct human endeavors in a manner that will avoid depleting natural resources for future generations and producing no more than can be assimilated through natural processes, while providing for improvement of the human condition for all the people of the world. Efforts to improve the sustainability of natural systems and human communities can improve their resilience to climate change by increasing their adaptive capacity.

k. Shoreline development and infrastructure, critical to public and environmental health and the region's economic prosperity, may be, or may become, vulnerable to flooding from sea level rise and storm activity. Public safety may be compromised and personal property and agricultural land may be damaged or lost during floods. Important public shoreline infrastructure and facilities, such as airports, ports, regional transportation facilities, landfills, contaminated lands and wastewater treatment facilities are at risk of flood damage that could require costly repairs, or result in the interruption or loss of vital services or degraded water quality. A current lack of funding to address projected impacts from sea level rise necessitates a collaborative approach with all stakeholder groups to find strategic and innovative solutions to advance the Bay Area's ability to meet environmental, public health, equity and economic goals.

l. Waterfront parks, beaches, public access sites, and the Bay Trail are particularly vulnerable to flooding from sea level rise and storm activity because they are located immediately adjacent to the Bay. Flooding of, or damage to these areas would adversely affect the region's quality of life, if important public spaces and recreational opportunities are lost.

m. The Bay ecosystem contains diverse and unique plants and animals and provides many benefits to humans. For example, tidal wetlands improve water quality, sequester carbon and can provide flood protection. Tidal high marsh and adjacent ecotones are essential to many tidal marsh species, including endangered species. Agricultural lands along the Bay shoreline function as buffers that can reduce the adverse impacts of nearby land uses and activities on the Bay and tidal marshes and can also provide habitat for terrestrial species. The Bay ecosystem is already stressed by human activities that lower its adaptive capacity, such as diversion of fresh water inflow and loss of tidal wetlands. Climate change will further alter the ecosystem by inundating or eroding wetlands and ecotones, changing sediment dynamics, altering species

composition, raising the acidity of Bay waters, changing fresh water inflow or salinity, altering the food web, and impairing water quality, all of which may impair the system's ability to rebound and function. Moreover, further loss of tidal wetlands will increase the risk of shoreline flooding.

n. Some Bay Area communities, particularly those whose residents have low incomes, disabilities or are elderly, may lack the resources or capacity to respond effectively to the impacts of sea level rise and storm activity. Financial and other assistance is needed to achieve regional equity goals and help everyone be part of resilient shoreline communities.

o. Approaches for ensuring public safety in developed vulnerable shoreline areas through adaptive management strategies include but are not limited to: (1) protecting existing and planned appropriate infill development through the end of the useful life of the development; (2) prioritizing water-dependent and water-oriented uses along the shoreline and considering placing other uses away from vulnerable shorelines; (3) accommodating flooding by building or renovating structures or infrastructure systems that are resilient or adaptable over time; (4) discouraging permanent new development when adaptive management strategies cannot protect public safety as inundation threats increase; and (5) over time and where feasible and appropriate, removing existing development where public safety cannot otherwise be ensured. Determining the appropriate approach and financing structure requires the weighing of various policies and is best done through a collaborative approach that directly involves the affected communities and other governmental agencies with authority or jurisdiction. Some adaptive management strategies may require action and financing on the regional or sub-regional level across jurisdictions.

p. Every four years, the Association of Bay Area Governments and the Metropolitan Transportation Commission update Plan Bay Area, the region's long-range plan for housing, economic development, transportation, and environmental resilience, pursuant to the Sustainable Communities and Climate Protection Act of 2008 (SB 375). Plan Bay Area incorporates a set of growth geographies, such as Priority Development Areas, Priority Conservation Areas, and Priority Production Areas, that guide future growth in housing and jobs over the next 30 years. One of the Commission's objectives in adopting climate change policies is to facilitate implementation of Plan Bay Area. Some shoreline areas that are vulnerable to flooding are already improved with public infrastructure and private development that has regionally significant economic, cultural or social value, and can accommodate infill development.

q. When planning or regulating development within areas vulnerable to flooding from sea level rise, allowing small projects, such as minor repairs of existing facilities, and interim uses may be acceptable if they do not significantly increase overall risks to public safety.

r. In some cases, the regional goals of encouraging infill development, remediating environmentally degraded land, redeveloping closed military bases and concentrating housing and job density near transit may conflict with the goal of minimizing flood risk by avoiding development in low-lying areas vulnerable to flooding. Methods to minimize this conflict, include, but are not limited to: clustering infill or redevelopment in low-lying areas on a portion of the property to reduce the area that must be protected; formulating an adaptation strategy for dealing with rising sea level and shoreline flooding with definitive goals and an adaptive management plan for addressing key uncertainties for the life of the project; incorporating measures that will enhance project resilience and sustainability; and developing a project-based financial strategy and/or a public financing strategy, as appropriate, to fund future flood protection for the project, which may also protect existing nearby development. Reconciling these different worthy goals and taking appropriate action requires weighing competing policy considerations and would be best accomplished through a collaborative process involving diverse stakeholders. .

s. Some undeveloped low-lying areas that are vulnerable to shoreline flooding contain important habitat or provide opportunities for habitat enhancement. In these areas, development that would have regional benefits could preclude wetland enhancement that would also have regional benefits. Some developed areas may be suitable for ecosystem restoration, if existing development is removed to allow the Bay to migrate inland, although relocating communities is very costly and may result in the displacement of neighborhoods.

t. There are multiple local, state, federal, and regional government agencies with authority over the Bay and shoreline. Local governments have broad authority over shoreline land use, but limited resources to address climate change adaptation. Working collaboratively with local governments, including agencies with responsibility for flood protection is desirable to optimize scarce resources and create the flexibility needed to plan amidst a high degree of uncertainty.

u. Government jurisdictional boundaries and authorities in the Bay Area are often in conflict with the regional scale and nature of climate-related challenges. The Bay Area Regional Collaborative, which is comprised of regional agencies, provides a framework for regional coordination to address climate change through consistent and effective regionwide policy and to provide local governments with assistance and incentives for addressing climate change. The Commission collaborates with the Bay Area Regional Collaborative and its member agencies to assure that the Bay Plan Climate Change policies are integrated with the emerging Sustainable Communities Strategy and other regional agencies' policies that deal with climate change issues.

v. The Commission's legal authority and regulatory jurisdiction were created to address the Legislative findings and advance the declarations of state policy established in the McAteer-Petris Act and the Suisun Marsh Preservation Act of 1977. Climate change and sea level rise were not considerations when this authority and jurisdiction were established.

w. The California Climate Adaptation Strategy, mandated by Assembly Bill 1482 (Gordon, 2015) and AB 1384 (Gabriel, 2022), link together the state's existing and planned climate adaptation efforts and prioritize the most vulnerable communities, ecosystems, and economic sectors. It includes the following policy objectives for state agencies in their adaptation planning:

1) Strengthen Protections for Climate Vulnerable Communities

2) Bolster Public Health and Safety to Protect Against Increasing Climate Risks

3) Build a Climate Resilient Economy

4) Accelerate Nature-Based Climate Solutions and Strengthen Climate Resilience of Natural Systems

5) Make Decisions Based on the Best Available Climate Science

6) Partner and Collaborate to Leverage Resources

Sea level rise adaptation and coastal resilience is an important component of California's overall climate adaptation approach. The strategy calls for closer alignment among coastal planning in light of sea level rise. Due to the significant value of critical infrastructure, the strategy calls for proactive planning to support resilience of critical infrastructure against sea level rise. It includes actions to protect, restore, and create coastal wetlands and subtidal habitats, and test innovative nature-based climate solutions. Additionally, it calls on California to take actions that ensure continued public access to California's coast in light of changing shoreline conditions and sea-level rise, prioritizing climate vulnerable communities. Lastly, it calls for incorporating tribal governments into planning processes for climate actions.

x. In 2011, BCDC adopted new landmark Bay Plan Climate Change Policies after an extensive public process. These policies provide standards for the Commission to review projects within its jurisdiction for

resilience and adaptability over time to rising sea level, and called for the Commission to collaborate with partners to develop a regional sea level rise adaptation strategy for protecting critical developed shoreline areas and natural ecosystems, enhancing the resilience of Bay and shoreline systems and increasing their adaptive capacity. Recommendations for the regional strategy included that the strategy (1) incorporate an adaptive management approach; (2) be consistent with the goals of SB 375 and the principles of the California Climate Adaptation Strategy; (3) be updated regularly to reflect changing conditions and scientific information; (4) include maps of shoreline areas that are vulnerable to flooding based on projections of future sea level rise and shoreline flooding, prepared under the direction of a qualified engineer and regularly updated in consultation with government agencies with authority over flood protection; and (5) pay particular attention to identifying and encouraging the development of long-term regional flood protection strategies that may be beyond the fiscal resources of individual local agencies. Further policy considerations aimed to advance regional public safety and economic prosperity, enhance Bay ecosystems, integrate protection of shoreline development with ecosystem protection, encourage innovative approaches, address issues of environmental justice and social equity, encourage shoreline remediation, and more. This policy guidance was and continues to be instrumental in guiding future Commission planning efforts that led to the creation of the Regional Shoreline Adaptation Plan.

To support development of the regional strategy, in 2011 BCDC launched its award-winning Adapting to Rising Tides Program that continues to work with local jurisdictions around the Bay to develop multi-sector, cross-jurisdictional projects to understand the risks from rising sea level and assess adaptation responses. After nearly a decade of working closely with cities and counties on understanding local vulnerability to sea level rise, BCDC published Adapting to Rising Tides Bay Area, which provided a comprehensive look at the interconnectedness of vulnerable systems across the Bay. To identify shared solutions to regional vulnerability, in 2019 the Commission convened Bay Adapt: Regional Strategy for a Rising Bay in partnership with a broad range of Bay Area leaders. After two years of collaborative work, the Bay Adapt Joint Platform was adopted in 2021. The Joint Platform is a regional, consensus-driven strategy that lays out the actions necessary to protect people and the natural and built environments from sea level rise. The Joint Platform contains six guiding principles, nine actions, and 21 tasks.

The guiding principles are to:

1) Support socially vulnerable communities.

2) Put nature first whenever possible.

3) Solve interconnected problems at the same time.

4) Practice inclusive, community-led governance and decision-making.

5) Support existing efforts but plan for the long term.

6) Pick the right strategy for the right place at the right time.

y. Senate Bill (SB) 272 (Laird 2023): Sea Level Rise Planning and Adaptation requires all local governments within the Commission's jurisdiction to address sea level rise through preparation of subregional San Francisco Bay shoreline resiliency plans, henceforth called Subregional Shoreline Adaptation Plans, subject to approval by the Commission. SB 272 requires the Commission to establish guidelines under which local governments must prepare the plans. Local governments within the Commission's jurisdiction must submit plans consistent with the adopted guidelines by January 1, 2034, with updates thereafter. Pursuant to SB 272, local governments that receive approval by the Commission will be prioritized for state funding, upon appropriation by the Legislature. These plans must include, at a minimum, all of the following:

1) The use of the best available science.

2) A vulnerability assessment that includes efforts to ensure equity for at-risk communities.

3) Sea level rise adaptation strategies and recommended projects.

4) Identification of lead planning and implementation agencies.

5) A timeline for updates, as needed, based on conditions and projections and as determined by the local government in agreement with BCDC.

z. Building from the Joint Platform and Adapting to Rising Tides (ART) Bay Area (2020), the Commission, in collaboration with regional, state, and federal agencies, local governments, and the public, BCDC developed the Regional Shoreline Adaptation Plan to meet the requirements of SB 272 and embrace the strategies and goals of the regional strategy originally called for by the Climate Change policies. The Commission has incorporated by reference into the Bay Plan the Regional Shoreline Adaptation Plan as a plan addressing special needs. The Regional Shoreline Adaptation Plan sets forth a One Bay regional vision that address major issues facing the Bay Area today, as set forth below.

Vision: As sea levels rise, the Bay Area's diverse communities come together to transform how we live, work, plan, and adapt along our changing shorelines. In this future, communities are healthy, safe, and have greater access to the shoreline where they can feel connected to the Bay's edge and experience the beauty and wonder of thriving habitats we depend upon to sustain our quality of life. Our region remains connected so that networks of people and goods can move with ease and get to the places they need to go. The services we rely upon keep our communities and economies running and are designed for the long-term. Achieving this future will require governments, the private sector, and communities to make a commitment to equity, address past harms, and take on complex, interrelated challenges together. A resilient future for the San Francisco Bay Area starts now and continues for generations to come.

As sea levels rise:

1) Communities are healthy and vibrant.

2) Healthy Baylands ecosystems thrive.

3) Places are designed for changing shorelines.

4) Critical services are reliable.

5) The Bay shoreline is accessible to all.

6) Safe and reliable transportation connects the region.

7) People and ecosystems are safe from contamination risks.

8) Regional collaboration drives efficient and effective adaptation.

In addition, the Regional Shoreline Adaptation Plan provides for Strategic Regional Priorities and Subregional Shoreline Adaptation Plan Guidelines to direct the local government preparation of "Subregional Shoreline Adaptation Plans" to comply with the requirements of SB 272. Minimum Standards in the Regional Shoreline Adaptation Plan outline the minimum requirements that must be met to comply with the Subregional Shoreline Adaptation Plan Guidelines, meet local and community needs, and contribute to regional outcomes as defined in the One Bay Vision. The Regional Shoreline Adaptation Plan will evolve to incorporate new elements over time, and the Commission will support local government resilience and adaptation planning through technical assistance.

Policies

1. The Commission intends that the Bay Plan Climate Change findings and policies will be used as follows for the purposes of reviewing projects and activities by the Commission's Regulatory Program:

   a. The findings and policies apply only to projects and activities located within the following areas: San Francisco Bay, the 100-foot shoreline band, salt ponds, managed wetlands, and certain waterways, as these areas are described in Government Code section 66610, and the Suisun Marsh, as this area is described in Public Resources Code section 29101;

   b. For projects or activities that are located partly within the areas described in subparagraph a and partly outside such area, the findings and policies apply only to those activities or that portion of the project within the areas described in subparagraph a;

   c. For the purposes of implementing the federal Coastal Zone Management Act, the findings and policies do not apply to projects and activities located outside the areas described in subparagraph a, even if those projects or activities may otherwise be subject to consistency review pursuant to the federal Coastal Zone Management Act; and

   d. For purposes of implementing the California Environmental Quality Act, the findings and policies are not applicable portions of the Bay Plan for purposes of CEQA Guideline 15125(d) for projects and activities outside the areas described in subparagraph a and, therefore, a discussion of whether such proposed projects or activities are consistent with the policies is not required in environmental documents.

2. When planning shoreline areas or designing larger shoreline projects, a risk assessment should be prepared by a qualified engineer and should be based on the estimated 100-year flood elevation that takes into account the best estimates of future sea level rise and current flood protection and planned flood protection that will be funded and constructed when needed to provide protection for the proposed project or shoreline area. A range of sea level rise projections for mid-century and end of century based on the best scientific data available should be used in the risk assessment. Inundation maps used for the risk assessment should be prepared under the direction of a qualified engineer. The risk assessment should identify all types of potential flooding, degrees of uncertainty, consequences of defense failure, and risks to existing habitat from proposed flood protection devices.

3. To protect public safety and ecosystem services, within areas that a risk assessment determines are vulnerable to future shoreline flooding that threatens public safety, all projects—other than repairs of existing facilities, small projects that do not increase risks to public safety, interim projects and infill projects within existing urbanized areas—should be designed to be resilient to a mid-century sea level rise projection. If it is likely the project will remain in place longer than mid-century, an adaptive management plan should be developed to address the long-term impacts that will arise based on a risk

assessment using the best available science-based projection for sea level rise at the end of the century.

4. To address the regional adverse impacts of climate change, undeveloped areas that are both vulnerable to future flooding and currently sustain significant habitats or species, or possess conditions that make the areas especially suitable for ecosystem enhancement, should be given special consideration for preservation and habitat enhancement and should be encouraged to be used for those purposes.

5. Wherever feasible and appropriate, effective, innovative sea level rise adaptation approaches should be encouraged.

6. The Regional Shoreline Adaptation Plan (the One Bay Vision, Strategic Regional Priorities, and Subregional Shoreline Adaptation Plan Guidelines) shall provide requirements for achieving coordinated, collaborative sea level rise adaptation planning in San Francisco Bay and shall direct the local governments in their preparation of San Francisco Bay shoreline resiliency plans, henceforth called Subregional Shoreline Adaptation Plans, as required by SB 272. The Subregional Shoreline Adaptation Plan Guidelines shall govern the Commission's review and approval of the Subregional Shoreline Adaptation Plans. Local governments shall submit Subregional Shoreline Adaptation Plans that are consistent with the Subregional Shoreline Adaptation Plan Guidelines to the Commission for approval and shall update these Plans as provided by SB 272 and the Regional Shoreline Adaptation Plan.

   The Commission shall provide technical and policy assistance on development of Subregional Shoreline Adaptation Plans with respect to shoreline adaptation, including but not limited to: (1) online data and mapping using best available science that is updated regularly to reflect changing conditions and new information; (2) technical support; (3) coordination and interagency collaboration; (4) guidance for undertaking equitable, culturally-relevant public outreach and engagement; and (5) assistance with identifying funding opportunities. Local jurisdictions should coordinate early and regularly with Commission staff to maximize the benefits of collaborative, regional adaptation planning.

   The Regional Shoreline Adaptation Plan is a living document that employs an adaptive management approach to planning for rising sea levels. The Regional Shoreline Adaptation Plan should be regularly updated, consistent with the goals of SB 375 and the principles of the California Climate Adaptation Strategy. As the Commission's resiliency planning continues to evolve, the Commission should:

   a. Support research that provides information useful for planning and policy development on the impacts of climate change on the Bay, particularly those related to shoreline flooding.

   b. Develop, in partnership with the Metropolitan Transportation Commission and the Association of Bay Area Governments, a San Francisco Bay Area Sea Level Rise Funding and Investment Strategy with the input of regional and state agencies, local jurisdictions, flood management agencies, non-profit and community-based organizations. The Strategy should identify and categorize regionally significant sea level rise adaptation projects and strategies, analyze current and projected revenues, and include funding strategies.

   c. Collaborate with local governments to determine where and how existing development should be protected and infill development encouraged, where new development should be permitted, and where existing development should eventually be removed to allow the Bay to migrate inland.

   d. Identify any other needed actions, including any needed changes in law, to successfully implement the Regional Shoreline Adaptation Plan and better link sea level rise adaptation planning to the Commission's regulatory program.

7. The Commission should evaluate each project proposed in vulnerable areas on a case-by-case basis to determine the project's public benefits, resilience to flooding, and

capacity to adapt to climate change impacts. The Commission may consult the Regional Shoreline Adaptation Plan and consider any approved Subregional Shoreline Adaptation Plan as advisory in its review of projects and activities associated with those plans by the Commission's Regulatory Program. The following specific types of projects have regional benefits, advance regional goals, and should be encouraged, if their regional benefits and their advancement of regional goals outweigh the risk from flooding:

a. remediation of existing environmental degradation or contamination, particularly on a closed military base;

b. a transportation facility, public utility or other critical infrastructure that is necessary for existing development or to serve planned development;

c. a project that will concentrate employment or housing near existing or committed transit service (whether by public or private funds or as part of a project), particularly within those Priority Development Areas that are established by the Association of Bay Area Governments and endorsed by the Commission, and that includes a financial strategy for flood protection that will minimize the burdens on the public and a sea level rise adaptation strategy that will adequately provide for the resilience and sustainability of the project over its designed lifespan; and

d. a natural resource restoration or environmental enhancement project.

The following specific types of projects should be encouraged if they do not negatively impact the Bay and do not increase risks to public safety:

e. repairs of an existing facility;

f. a small project;

g. a use that is interim in nature and either can be easily removed or relocated to higher ground or can be amortized within a period before removal or relocation of the proposed use would be necessary; and

h. a public park.

8. To effectively address sea level rise and flooding, if more than one government agency has authority or jurisdiction over a particular issue or area, project reviews should be coordinated to resolve conflicting guidelines, standards or conditions.

Amended March 2025

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 the Engineering Criteria Review Board which consists of 11 members who are leading professionals in the fields of architecture, geology, civil engineering specializing in soils engineering, structural engineering, 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 sea level rise, storm surge, rainfall, high tides, and winds blowing onshore. The most effective way to prevent such damage is to locate projects and facilities on fill or near the shoreline above a 100-year flood level that takes future sea level rise into account, during the expected life of the project. Other effective approaches that can reduce flood damage include protecting structures or areas with levees, seawalls, tidal marshes, or other protective measures; and employing innovative design concepts, such as building structures that can be easily relocated, tolerate periodic flooding or are adaptively designed and managed to address sea level rise over time.

g. Sea level is rising at an accelerated rate due to global climate change. 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. 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. Where subsidence occurs, more extensive shoreline protection and wetland restoration projects may be needed to minimize flooding of low-lying areas by the extreme high water levels.

h. Marine petroleum terminals can pose a risk to public health and safety and the environment and increase the risk of oil spills if allowed to deteriorate or become structurally unsound. The California State Lands Commission and the U.S. Coast Guard regularly monitor oil transfers at marine petroleum terminals. The California State Lands Commission also conducts inspections and reviews engineering analysis and design changes for rehabilitation and/or new construction. This oversight includes, but is not limited to, oil transfer equipment, all major structural components, moorings, mechanical and electrical systems, and fire detection and suppression systems, pursuant to California State Lands Commission and U.S. Coast Guard rules, regulations, guidelines and policies.

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 and maintenance of fill according to approved designs; (d) with regard to inspections of marine petroleum terminals, make recommendations to the California State Lands Commission and the U.S. Coast Guard, which are responsible for regulating and inspecting these facilities; (e) coordinate with the California State Lands Commission on projects relating to marine petroleum terminal fills and structures to ensure compliance with other Bay Plan policies and the California State Lands Commission's rules, regulations, guidelines and policies; and (f) 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. Geological Survey, for purposes of data comparison and evaluation.

4. Adequate measures should be provided to prevent damage from sea level rise and storm activity that may occur on fill or near the shoreline over the expected life of a project. The Commission may approve fill that is needed to provide flood protection for existing projects and uses. New projects on fill or near the shoreline should either be set back from the edge of the shore so that the project will not be subject to dynamic wave energy, be built so the bottom floor level of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of

addressing the impacts of future sea level rise and storm activity. Rights-of-way for levees or other structures 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.

Amended October 2011

Shoreline Protection

Findings and Policies Concerning Shoreline Protection Around the Bay

Findings

a. Well-designed shoreline protection projects, such as levees, wetlands, or riprap, can prevent shoreline erosion and damage from flooding.

b. Because vast shoreline areas are vulnerable to flooding and because much of the shoreline consists of soft, easily eroded soils, shoreline protection projects are often needed to reduce damage to shoreline property and improvements. Structural shoreline protection, such as riprap, levees, and seawalls, often requires periodic maintenance and reconstruction.

c. Most structural shoreline protection projects involve some fill, which can adversely affect natural resources, such as water surface area and volume, tidal circulation, and wildlife use. Structural shoreline protection can further cause erosion of tidal wetlands and tidal flats, prevent wetland migration to accommodate sea level rise, create a barrier to physical and visual public access to the Bay, create a false sense of security and may have cumulative impacts. Physical and visual public access can be provided on levees and other protection structures. As the rate of sea level rise accelerates and the potential for shoreline flooding increases, the demand for new shoreline protection projects will likely increase. Some projects may involve extensive amounts of fill. Occasionally, riprap and other structural protection can reduce the public's ability to safely access the waters of the Bay. In these cases, the shoreline protection structure can conflict with the Commission's commitment to providing safe public water access.

d. Structural shoreline protection is most effective and less damaging to natural resources if it is the appropriate kind of structure for the project site and erosion and flood problem, and is properly designed, constructed, and maintained. Because factors affecting erosion and flooding vary considerably, no single protective method or structure is appropriate in all situations. When a structure is not appropriate or is improperly designed and constructed to meet the unique site characteristics, flood conditions and 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.

e. Addressing the impacts of sea level rise and shoreline flooding may require large-scale flood protection projects, including some that extend across jurisdictional or property boundaries. Coordination with adjacent property owners or jurisdictions to create contiguous, effective shoreline protection is critical when planning and constructing flood protection projects. Failure to coordinate may result in inadequate shoreline protection (e.g., a protection system with gaps or one that causes accelerated erosion in adjacent areas).

f. Shoreline protection solutions vary along a spectrum from hardened (grey) structures to natural (green) solutions. Natural and nature-based shoreline protection methods, such as tidal marshes, levees with transitional ecotone habitat, oyster reefs, mudflats, and beaches can provide effective flood protection and/or wave attenuation when sited properly. In some instances, it may be possible to combine natural and nature-based methods (e.g. habitat restoration, enhancement or protection) with structural approaches to provide protection from flooding and control shoreline erosion, thereby minimizing the shoreline protection project's impact on natural resources and maximizing other ecological benefits. The appropriate solutions and combinations of solutions depend on physical and biological characteristics of the site, in addition to other factors.

g. Some hardened shoreline protection structures may intensify wave reflection and contribute to shoreline erosion and overtopping at adjacent or nearby vulnerable areas. At all sites, but particularly at sites in or adjacent to lower income communities that may lack resources to adequately protect their shoreline, it is important to design projects to minimize such impacts. Given the appropriate site conditions, natural and nature-based shoreline protection methods can dissipate wave energy more effectively than certain types of hardened shoreline protection structures, diminishing wave reflection impacts such as accelerated erosion and flooding in adjacent or nearby areas.

h. In some cases, natural solutions that support wildlife may conflict with adjacent land uses, such as airports.

i. The use of natural and nature-based features provides additional benefits beyond shoreline protection, including habitat, water quality improvement, carbon sequestration, recreation, and more. Because these benefits are provided, natural and nature-based shoreline protection approaches are sometimes considered self-mitigating.

j. Loose dirt, concrete slabs, asphalt, bricks, scrap lumber and other kinds of debris, are generally ineffective in halting shoreline erosion or preventing flooding and may lead to increased fill or release of pollutants. 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.

k. The impacts of historic and ongoing social and economic marginalization may compound risks posed by flooding to communities by reducing a community's or individual's ability to prepare for, respond to, or recover from a flood event. Meaningfully involving these vulnerable communities can help ensure successful shoreline protection structures, regional adaptation strategies, and resilience measures. Without including the needs of the region's most vulnerable and underrepresented communities, construction of shoreline protection could result in unintended consequences, such as exacerbating the vulnerability of these communities.

l. There are many contaminated sites on San Francisco Bay's shoreline and in adjacent subtidal areas. Current and future

flooding of these sites could potentially mobilize contaminants into the environment of surrounding communities. These contaminants are associated with a number of adverse public health impacts. Many of these sites are located in or near low-income communities of color facing various other adverse environmental impacts, creating compound negative health impacts. These impacts can be minimized if measures are taken to remove contaminants (if deemed safe for human and environmental health) and if remediation projects are designed using the best available science on sea level rise, storm surge, and associated groundwater level changes to prevent contaminant mobilization.

Policies

1. New shoreline protection projects and the maintenance or reconstruction of existing projects and uses should be authorized if: (a) the project is necessary to provide flood or erosion protection for (i) existing development, use or infrastructure, or (ii) proposed development, use or infrastructure that is consistent with other Bay Plan policies; (b) the type of the protective structure is appropriate for the project site, the uses to be protected, and the causes and conditions of erosion and flooding at the site; (c) the project is properly engineered to provide erosion control and flood protection for the expected life of the project based on a 100-year flood event that takes future sea level rise into account; (d) the project is properly designed and constructed to prevent significant impediments to physical and visual public access; (e) the protection is integrated with current or planned adjacent shoreline protection measures; and (f) adverse impacts to adjacent or nearby areas, such as increased flooding or accelerated erosion, are avoided or minimized. If such impacts cannot be avoided or minimized, measures to compensate should be required. Professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes, should participate in the design.

2. Equitable and culturally-relevant community outreach and engagement should be conducted to meaningfully involve nearby communities for all shoreline protection project planning and design processes – other than maintenance and in-kind repairs to existing protection structures or small shoreline protection projects – in order to supplement technical analysis with local expertise and traditional knowledge and reduce unintended consequences. In particular, vulnerable, disadvantaged, and/or underrepresented communities should be involved. If such previous outreach and engagement did not occur, further outreach and engagement should be conducted prior to Commission action.

3. 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, are free of extraneous materials from demolition debris, and are carefully selected for size, density, and durability will meet these requirements. Riprap revetments constructed out of other debris materials should not be authorized.

4. 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 flooding and that the effects of the shoreline protection project on natural resources during the life of the project will be the minimum necessary.

5. All shoreline protection projects should evaluate the use of natural and nature-based features such as marsh vegetation, levees with transitional ecotone habitat, mudflats, beaches, and oyster reefs, and should incorporate these features to the greatest extent practicable. Ecosystem benefits, including habitat and water quality improvement, should be considered in determining the amount of fill necessary for the project purpose. Suitability and sustainability of proposed shoreline protection and restoration strategies at the project site should be determined using the

best available science on shoreline adaptation and restoration. Airports may be exempt from incorporating natural and nature-based features that could endanger public safety by attracting potentially hazardous wildlife.

6. Adverse impacts to natural resources and public access from new shoreline protection should be avoided. When feasible, shoreline protection projects should include components to retain safe and convenient water access, for activities such as fishing, swimming, and boating, especially in communities lacking such access. Where significant impacts cannot be avoided, mitigation or alternative public access should be provided. Shoreline protection projects that include natural and nature-based features may be self-mitigating or require less mitigation than projects that do not include any natural or nature-based features.

7. The Commission should encourage pilot and demonstration projects to research and demonstrate the benefits of incorporating natural and nature-based techniques in San Francisco Bay.

8. All contamination remediation projects in the Bay or along the Bay shoreline should integrate the best available science on sea level rise, storm surge, and associated groundwater level changes into the project design in order to protect human and ecological health by preventing the mobilization of contaminants into the environment and preventing harm to the surrounding communities.

Amended October 2019

Dredging

Findings and Policies Concerning Dredging in the Bay

Findings

a. Much of the Bay bottom is shallow averaging 20 feet in depth and the bottom is covered with accumulated silt, sand, and clay. An estimated eight million cubic yards of sediment is carried into the Bay annually from tributaries, most of it settling to the Bay bottom. In addition, over 100 million cubic yards of sediment is recirculated in Bay waters each year, some of which 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 turning basins with adequate underkeel clearance, harbors for port facilities, water-related industries, recreational boating, and flood control channels. Dredging of unstable Bay muds may also be needed to accommodate Bay fill projects. Dredging projects remove existing bottom habitat and can disrupt surrounding areas through turbidity and other impacts.

c. Some waste disposal practices have deposited pollutants into the Bay, some of which have contaminated Bay sediments. These pollutants are not distributed evenly in the Bay and some areas are highly contaminated. Dredging and subsequent disposal of contaminated sediments in the Bay may adversely affect Bay organisms.

d. In the past, material dredged from the Bay was disposed throughout the Bay. In more recent times, most disposal has occurred at one of four Bay disposal sites designated by the U.S. Army Corps of Engineers, the Regional Board, and the Commission where the material can disperse and cause as few environmental impacts 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. At the site nearest the ocean, next to Alcatraz Island, less than half of the disposed material is carried out to sea by the tides.

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

completely fill the site. The impact of dredged material disposal on Bay natural resources, which are also impacted by a variety of sources, remains controversial.

f. In 1994, the U.S. Environmental Protection Agency designated the "Deep Ocean Disposal Site," which is fifty miles outside of the Golden Gate. The EPA manages the site and has set a yearly capacity of 4.8 million cubic yards of dredged material.

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

h. In the past, only small amounts of dredged material have been disposed at upland and diked baylands around the Bay. Fortunately, more reuse options are becoming available for dredged material disposal. These sites include Hamilton Wetlands Project in Marin County with a capacity of over 10 million cubic yards and the Montezuma Wetlands Project in Solano County with a capacity of 17 million cubic yards. Inclusion of the adjacent Bel Marin Keys parcel would likely more than double the capacity of the Hamilton project. Dredged material could be used at these sites to restore thousands of acres of wetlands. However, as identified in the Commission's *Diked Historic Baylands Study* and the San Francisco Bay Area Wetlands Ecosystem Goals Project diked baylands often contain seasonal wetlands, provide the primary opportunity for enhancement of seasonal wetlands or restoration of tidal wetlands, and can provide other important habitat functions that need to be taken into account as part of dredged material reuse projects to avoid losing critical natural habitat.

i. Shoreline facilities are needed to dry and prepare dredged material for some upland uses. These sites are particularly important for material with levels of contaminants that cannot be disposed in the Bay, but can be used as capping, lining and cover in solid waste landfills.

j. A variety of habitat types within the Bay sustain a multitude of plant, fish, and wildlife species. Many factors determine the habitat functions and values of a given area of the Bay, including water depth and clarity, type of substrate (rock, coarse sand, or fine-grained sand), type of vegetation, and salinity.

k. Each of the fish and wildlife species found in the Bay has particular habitat needs to forage, rest, take refuge, and reproduce. Although the San Francisco Bay Area Wetlands Ecosystem Goals Project comprehensively studied the baylands and made recommendations for the extent and location of wetlands and related habitats, no such study has been performed of the need for or appropriate mix of habitat types in the waters of the Bay.

l. Eelgrass beds are considered to be a valuable shallow water habitat, providing feeding, escape, or breeding habitat for many species of invertebrates, fishes, and some waterfowl. Eelgrass grows in relatively few locations in the Bay and requires special conditions to flourish. Cultivating eelgrass is difficult and efforts to grow eelgrass in San Francisco Bay have not succeeded.

m. Under its existing law and policies the Commission has approved minor amounts of Bay fill to create, restore or enhance habitat in the Bay. The selective deposition of dredged materials in the Bay to extensively modify Bay habitats might enhance the habitat value for some Bay species. However, such projects could also result in significant adverse impacts to Bay water circulation and quality and to Bay habitats and organisms that depend on the Bay. Insufficient information exists about the potential benefits and adverse impacts on which to base Baywide policies governing disposal in the Bay of dredged material that would result in largescale modification of Bay habitats, either through an individual project or cumulatively with other projects.

n. Continuation of baywide studies would help determine the need for, appropriate locations for, and potential effects of the use of dredged sediment for eelgrass or other shallow water habitat enhancement or restoration. The Commission approved a pilot project, the Oakland Middle Harbor Enhancement Area

project, that could help to determine the feasibility of eelgrass or other shallow water habitat creation in the Bay.

o. 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 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.

p. The California Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service are responsible for management and protection of Bay organisms, particularly threatened and endangered species.

q. The Long Term Management Strategy (LTMS) program, initiated by the U.S. Army Corps of Engineers in 1991 in partnership with the Commission, the San Francisco Bay Regional Water Quality Control Board, the State Water Resources Control Board, and the U.S. Environmental Protection Agency, with the involvement of dredgers, fishermen, environmentalists and other interested parties, has comprehensively studied Bay dredging issues and prepared a long-range Bay dredging and dredged material disposal management plan and implementation program. The LTMS provides the basis for uniform federal and state dredged material disposal policies and regulations.

r. The LTMS has set goals to reduce in-Bay disposal over the next decade to one million cubic yards or less per year and to maximize use of dredged material as a resource.

s. Using dredged material as a resource is usually more expensive than existing disposal practices. Large reuse sites can attain economies of scale and increase feasibility of dredged material reuse. Concerted efforts are needed to plan, fund and implement reuse of dredged material. The ongoing efforts by government agencies, dredgers, environmentalists and others have made great progress and should achieve the LTMS goals. However, if these efforts are not successful, in-Bay disposal may have to be restricted through regulatory controls.

t. The U.S. Army Corps of Engineers is the largest Bay dredger and has the greatest ability to implement alternative disposal options. Annually, small dredgers account for less than one quarter of a million cubic yards of material and have the least ability to implement alternatives to in-Bay disposal.

u. As part of the LTMS, a Dredged Material Management Office (DMMO) has been established to consolidate the processing of dredging permit applications by the staff of the LTMS agencies and the State Lands Commission. The DMMO provides a single application form and unified processing of applications for dredging permits.

v. 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.

w. More information on Bay sediment dynamics is needed to (1) better determine the impacts of dredging and dredged material disposal projects and (2) identify long-term trends in Bay sedimentation that relate to dredging needs and potential impacts to Bay resources, such as wetland and mudflats.

Policies

1. Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time to achieve the LTMS

goal of limiting in-Bay disposal volumes to a maximum of one million cubic yards per year. The LTMS agencies should implement a system of disposal allotments to individual dredgers to achieve this goal only if voluntary efforts are not effective in reaching the LTMS goal. In making its decision regarding disposal allocations, the Commission should confer with the LTMS agencies and consider the need for the dredging and the dredging projects, environmental impacts, regional economic impacts, efforts by the dredging community to implement and fund alternatives to in-Bay disposal, and other relevant factors. Small dredgers should be exempted from allotments, but all dredgers should comply with policies 2 through 12.

2. 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, such as navigational safety; (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 through seasonal restrictions established by the California Department of Fish and Game, the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service, or through other appropriate measures; (d) the siting and design of the project will result in the minimum dredging volume necessary for the project; and (e) the materials would be disposed of in accordance with Policy 3.

3. Dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways. Except when reused in an approved fill project, dredged material should not be disposed in the Bay and certain waterways unless disposal outside these areas is infeasible and the Commission finds: (a) the volume to be disposed is consistent with applicable dredger disposal allocations and disposal site limits adopted by the Commission by regulation; (b) disposal would be at a site designated by the Commission; (c) the quality of the material disposed of is consistent with the advice of the San Francisco Bay Regional Water Quality Control Board and the inter-agency Dredged Material Management Office (DMMO); and (d) the period of disposal is consistent with the advice of the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

4. If an applicant proposes to dispose dredged material in tidal areas of the Bay and certain waterways that exceeds either disposal site limits or any disposal allocation that the Commission has adopted by regulation, the applicant must demonstrate that the potential for adverse environmental impact is insignificant and that non-tidal and ocean disposal is infeasible because there are no alternative sites available or likely to be available in a reasonable period, or because the cost of disposal at alternate sites is prohibitive. In making its decision whether to authorize such in-Bay disposal, the Commission should confer with the LTMS agencies and consider the factors listed in Policy 1.

5. To ensure adequate capacity for necessary Bay dredging projects and to protect Bay natural resources, acceptable non-tidal disposal sites should be secured and the Deep Ocean Disposal Site should be maintained. Further, dredging projects should maximize use of dredged material as a resource consistent with protecting and enhancing Bay natural resources, 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 sites.

6. Dredged materials disposed in the Bay and certain waterways should be carefully managed to ensure that the specific location, volumes, physical nature of the material, and timing of disposal do not create navigational hazards, adversely affect Bay sedimentation, currents or natural resources, or foreclose the use of the site for projects critical to the economy of the Bay Area.

7. All proposed channels, berths, turning basins, and other dredging projects should be carefully designed so as not to undermine the stability

of any adjacent dikes, fills or fish and wildlife habitats.

8. 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.

9. To protect underground fresh water reservoirs (aquifers): (a) all proposals for dredging or construction 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 provide additional data on groundwater conditions in the area of construction to the extent necessary and reasonable in relation to the proposed project.

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

11a. A project that uses dredged sediment to create, restore, or enhance Bay or certain waterway natural resources may be approved if:

(1) The Commission, based on detailed site-specific studies, appropriate to the size and potential impacts of the project, that include, but are not limited to, site morphology and physical conditions, biological considerations, the potential for fostering invasive species, dredged sediment stability, and engineering aspects of the project, determines all of the following:

(a) the project would provide, in relationship to the project size, substantial net improvement in habitat for Bay species;

(b) no feasible alternatives to the fill exist to achieve the project purpose with fewer adverse impacts to Bay resources;

(c) the amount of dredged sediment to be used would be the minimum amount necessary to achieve the purpose of the project;

(d) beneficial uses and water quality of the Bay would be protected; and

(e) there is a high probability that the project would be successful and not result in unmitigated environmental harm;

(2) The project includes an adequate monitoring and management plan and has been carefully planned, and the Commission has established measurable performance objectives and controls that would help ensure the success and permanence of the project, and an agency or organization with fish and wildlife management expertise has expressed to the Commission its intention to manage and operate the site for habitat enhancement or restoration purposes for the life of the project;

(3) The project would use only clean sediment suitable for aquatic disposal and the Commission has solicited the advice of the San Francisco Bay Regional Water Quality Control Board, the Dredged Material Management Office and other appropriate agencies on the suitability of the dredged sediment;

(4) Dredged sediment would not be placed in areas with particularly high or rare existing natural resource values, such as eelgrass beds and tidal marsh and mudflats, unless the material would be needed to protect or enhance the habitat. The habitat project would not, by itself or cumulatively with other projects, significantly decrease the overall amount of any particular habitat within the Suisun, North, South, or Central

Bays, excluding areas that have been recently dredged;

(5) The Commission has consulted with the California Department of Fish and Wildlife, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service to ensure that at least one of these agencies supports the proposed project; and

(6) The project's design and goals incorporate the best available science on the use of dredged sediment for habitat projects.

(7) After a reasonable period of monitoring, if either:

(a) the project has not met its goals and measurable objectives, and attempts at remediation have proven unsuccessful, or

(b) the dredged sediment is found to have substantial adverse impacts on the natural resources of the Bay, then the dredged sediment would be removed, unless it is demonstrated by competent environmental studies that removing the material would have a greater adverse effect on the Bay than allowing it to remain, and the site would be returned to the conditions existing immediately preceding placement of the dredged sediment.

b. To ensure protection of Bay habitats, the Commission should not authorize placement of more than a minor amount of dredged sediment for projects that are similar to the Oakland Middle Harbor Enhancement Area project in characteristics including, but not limited to, scale, bathymetric modification, and type of habitat creation, until The Oakland Middle Harbor Enhancement Area project is completed successfully.

c. The Commission should encourage research and well-designed pilot projects to evaluate:

(1) The appropriate amounts of all habitat types within the Bay, especially for support and recovery of endangered species;

(2) The appropriate biological, hydrological, and physical characteristics of locations in the Bay for habitat creation, enhancement, and restoration projects that use dredged sediment;

(3) The potential for direct, indirect, and cumulative impacts of such projects;

(4) The effectiveness of different dredged sediment placement strategies for habitat restoration, enhancement, and creation; and

(5) The feasibility of the beneficial reuse of dredged sediment in the Bay and certain waterways for habitat creation, enhancement, and restoration.

12. The Commission should continue to participate in the LTMS, the Dredged Material Management Office, 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 and ocean disposal sites.

Amended October 2019

Water-Related Industry

Findings and Policies Concerning Water-Related Industry on the Bay

Findings

a. Certain industries, including some dredged material rehandling facilities, 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. 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.

d. 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 Benicia, Oakland, Redwood City, Richmond, and San Francisco;

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

   c. 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, as defined in the Seaport Plan. 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 May 2024

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. The reliable and efficient movement of people and goods around the Bay Area is essential for the region's economic health and quality of life.

b. The Federal Highway Administration and the Federal Transit Administration set federal priorities for planning and funding transportation projects. The California Transportation Commission sets the state's transportation priorities and the California Department of Transportation is responsible for planning, operating and maintaining the state's highways. Regional transportation planning for the Bay is coordinated by the Metropolitan Transportation Commission, and county congestion management agencies prepare transportation plans that establish funding and project priorities at the local level. A number of agencies plan and implement transportation projects and services, including rail, bus and ferry transit.

c. In recent years, improvements to the Bay Area's transportation network have increased regional travel options available to residents traveling around and across the Bay. For example, the San Francisco Bay Area Rapid Transit District provides transbay service that connects the East Bay with San Francisco and the Peninsula. Ferry service connects San Francisco with communities in the North and East Bay, and frequent rail service links San Jose with San Francisco and connects the Bay Area with Sacramento and the San Joaquin Valley. In addition, high-occupancy vehicle lanes for use by buses and carpools are common on the region's highways. However, the predominant form of travel in the Bay Area continues to be the single-occupant vehicle.

d. Primary reliance on the single-occupant vehicle for transportation in the Bay Area means further pressures to use the Bay as a route for future roadways and bridges. Therefore, a primary goal of transportation planning, from the point of view of preserving and properly using the Bay, should be a substantial reduction in dependence on the single-occupant vehicle. While single-occupant vehicles will still be needed and used for many types of travel, the goal

should be the improvement and expansion of systems of transportation that can carry large volumes of people and goods without damaging the environment of the Bay Area, including increased air and water pollution and shoreline space devoted to roadways and parking.

e. While the McAteer-Petris Act identifies bridges as water-oriented uses, 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.

f. Pressure to fill the Bay for surface transportation projects can be reduced by: improving the efficiency and increasing the capacity of existing transportation facilities and services, increasing access to public transit, providing safe and convenient public pathways for non-motorized forms of travel (e.g., bicycles, pedestrian), and by accommodating more of the region's growth in denser, mixed-use neighborhoods around transit stations and terminals.

g. The efficient and prompt movement of cargo to and from Bay Area airports and seaports is critical to the health of the state and regional economy. The Bay is a potentially important resource for moving cargo within the region by barge or ferry.

h. The Bay represents an important resource for ferry transportation. Locating ferry terminals near centers of employment, commerce and housing or in areas with connections to other forms of transit can improve regional mobility and increase access to the Bay. Because ferry routes can cross shipping lanes, water recreation areas and areas used by water birds and marine mammals, care in the planning and siting of ferry routes and terminals must be taken to ensure safe navigation and the protection of Bay fish and wildlife resources and their habitats.

i. A continuous network of paths and trails linking shoreline communities and crossing the Bay's bridges is a vital component in a regional transportation system and provides travel alternatives to the automobile.

j. Roadways, rail lines and other transportation facilities can provide views and vistas of the Bay; however, if not properly designed and constructed, these facilities can form barriers that separate communities from the Bay and block public access to the shoreline.

k. Transportation projects have the potential to degrade air quality, increase noise, impact mobility, eliminate open space and impede the public's access to the Bay. These impacts have often been disproportionately distributed in the Bay Area, commonly having greater impacts on low-income and minority communities. These disproportionate impacts have resulted in these communities having fewer opportunities for shoreline public access and views to the Bay, fewer shoreline recreational opportunities and fewer natural habitats.

l. Transportation projects located in the Bay or along its shoreline have the potential to result in shoreline erosion from ferry wakes, increased pollution from runoff, and harm to marine mammals and fish from pile-driving for bridges and piers and to subtidal habitats from increased turbidity.

Policies

1. Because of the continuing vulnerability of the Bay to filling for transportation projects, the Commission should continue to take an active role in Bay Area regional transportation and related land use planning affecting the Bay, particularly to encourage alternative methods of transportation and land use planning efforts that support transit and that do not require fill. The Metropolitan Transportation Commission, the California Department of Transportation, the California Transportation Commission, the Federal Highway Administration, county congestion management agencies and other public and private transportation authorities should avoid planning or funding roads that would require fill in the Bay and certain waterways.

2. If any additional bridge is proposed across the Bay, adequate research and testing should determine whether feasible alternative route, transportation mode or operational

improvement could overcome the particular congestion problem without placing an additional route in the Bay and, if not, whether a tunnel beneath the Bay is a feasible alternative.

3. If a route must be located across the Bay or a certain waterway, the following provisions should apply:

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

   b. Bridges should provide adequate clearance for vessels that normally navigate the waterway beneath the bridge.

   c. Toll plazas, service yards, or similar facilities should not be located on new fill and should be located far enough from the Bay shoreline to provide adequate space for maximum feasible public access along the shoreline.

   d. To reduce the need for future Bay crossings, any new Bay crossing should be designed to move the largest number of travelers possible by employing technology and operations that increase the efficiency and capacity of the infrastructure, accommodating non-motorized transportation and, where feasible, providing public transit facilities.

4. Transportation projects on the Bay shoreline and bridges over the Bay or certain waterways should include pedestrian and bicycle paths that will either be a part of the Bay Trail or connect the Bay Trail with other regional and community trails. Transportation projects should be designed to maintain and enhance visual and physical access to the Bay and along the Bay shoreline.

5. Ferry terminals should be sited at locations that are near navigable channels, would not rapidly fill with sediment and would not significantly impact tidal marshes, tidal flats or other valuable wildlife habitat. Wherever possible, terminals should be located near higher density, mixed-use development served by public transit. Terminal parking facilities should be set back from the shoreline to allow for public access and enjoyment of the Bay.

Amended October 2005

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. The Bay is the most important open space in the Bay region. The Bay and its shoreline provide unique recreational opportunities. Participating in recreation activities on the Bay and along its shoreline can inspire an appreciation of the Bay and can motivate people to participate in the responsible management and protection of the Bay. 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. Population growth in the Bay region will bring increases in water-oriented recreation. The demand for recreational facilities, including parks, trails, marinas, launching ramps, fishing piers, and beaches in the Bay Area will increase rapidly as the population increases, and will accelerate as population density near the edge of the Bay and spending power per capita increase, and the population

ages. Many more recreational facilities will be needed. As the diversity of the Bay Area population increases, the demand for water-oriented recreational activities will also diversify. Providing a variety of accessible, water-oriented recreational facilities and diverse recreational opportunities at these facilities for people of all races, cultures, ages and income levels, would accommodate a broad range of recreational activities.

c. Assessing the regional supply and demand for water-oriented recreational opportunities at regular intervals would identify potential changes in recreational needs. At the present time, 50 years appears to be the farthest into the future that recreational needs can be reasonably projected. 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. The Bay Plan maps include about 25,000 acres of waterfront parks.

d. Interim use of a waterfront park priority use area for non-recreational use prior to park development can facilitate acquisition and eventual park improvement, provided that the nature of the interim use allows the site to be converted to park use and would not involve investment in improvements that would preclude future use of the site as a park.

e. Boating allows residents to take advantage of the unique recreational opportunities provided by the Bay. Preserving opportunities for all types of boating on the Bay is important. 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, potential conflicts with commercial shipping or ferries, impacts to valuable habitat, or 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.

f. Non-motorized small boats (e.g., kayaks, kite boards, canoes, and dragon boats) can be launched in a wide variety of settings. Access for non-motorized small boats can be provided at launch ramps, beaches, fishing piers, marinas and waterfront parks, and by providing access through or over shoreline protection (e.g., ramps or stairs). Boating access facilities can be shared by different types of craft, including power, sail and human-powered boats. Boating organizations can advance the goal of providing access to the Bay by providing training and stewardship, operating concessions, providing storage and owning and operating boat houses.

g. The goal of the San Francisco Bay Area Water Trail is to provide points of access to the waters of the Bay for navigation by non-motorized small boats.

h. 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.

i. 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. Providing access to these popular waterfront destinations from the Bay for boaters expands water-oriented recreation opportunities.

j. 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.

k. Large, deep draft vessels are mainly confined to restricted, and sometimes narrow, shipping lanes, which they sometimes share with other vessels, boats, and smaller recreational craft. Increased boater education on shipping lanes, ferry routes, U.S. Coast Guard rules for navigation, and safety guidelines for smaller recreational crafts, can reduce the risk of accidents.

l. Completing the San Francisco Bay Trail and the Bay Area Ridge Trail and linking these regional trail systems will provide the public with better access to the Bay and to parks along the Bay shoreline. The goal of the San Francisco Bay Trail Project is to create a continuous, multiple-use trail around San Francisco Bay which can be used for hiking, jogging, bicycling and other non-motorized uses and which connects shoreline parks. The Bay Area Ridge Trail Project has as its goal establishing a continuous, multiple-use trail connecting ridgeline parks around San Francisco Bay and preservedv open spaces along the trail route. Waterfront parks provide excellent locations for links in the Bay Trail and opportunities to expand shoreline access for Bay Area residents. In addition, in a few locations, such as The Presidio of San Francisco and Fort Baker, shoreline parks can include links in the Bay Area Ridge Trail system.

m. Only a few large, public sandy beaches exist along the San Francisco Bay shoreline, such as those at China Camp State Park, Baker Beach, Robert W. Crown Memorial State Beach, and Kirby Cove. Because of their scarcity, these beaches provide important habitat for shorebirds, as well as valued sites for recreational activities.

n. Swimming in the Bay is a popular activity, especially at Bay beaches. Bay water quality can affect the health of Bay swimmers. State law requires local public health officers to test water quality at popular beaches during high use periods, and to notify the public and post closure signs when dangerous levels of bacteria are present.

o. Fish contaminant monitoring programs have found that certain sport fish have high levels of persistent contaminants that pose a risk to human health if contaminated fish are consumed at levels exceeding safety thresholds established by the State Water Board. To reduce the health risks from consuming contaminated fish, health advisory signage, provided in various languages, can inform anglers of fish contamination and safe consumption levels.

p. Roads, trails, public transit service and conveniently located areas where vehicles can be parked for more than short periods of time in waterfront parks and other water-oriented recreational facilities are needed to provide the public with full access to the Bay.

q. Many waterfront parks and wildlife refuges designated in the Bay Plan contain historic structures or landscapes, archaeological or cultural resources, vista points, substantial improvements or buildings that have significant potential for appropriate and compatible reuse and other features that provide exceptional opportunities for water-oriented recreation. Historic structures, historic landscapes and archaeological or cultural resources can be preserved and their contribution to the Bay Area's history can be interpreted for park visitors.

r. Wildlife refuges, as defined in the Bay Plan, have habitats that are populated by a wide variety of Bay fish, other aquatic organisms and wildlife, including some threatened and endangered species. Some of these habitats are also found in waterfront parks. Park and refuge managers are responsible for preserving wildlife and their habitats, educating the public about the ecological importance and function of these resources, and providing opportunities for wildlife compatible recreation. Proper location, improvement and management of recreational uses are effective tools for reconciling habitat and wildlife conservation with recreation.

s. If not properly located, improved or managed, recreation activities can have adverse affects on wildlife. This problem can be addressed by applying the Bay Plan public access findings

and policies that address the compatibility of recreational activities with wildlife and their habitats when considering recreation-related development proposals.

t. Wildlife refuges, wildlife areas and ecological reserves have as their primary mission to provide a safe haven for native vegetation, fish, other aquatic organisms and wildlife. These areas also have the potential to accommodate compatible recreational activities that protect wildlife, inform the public, foster support for wildlife protection and expand opportunities for wildlife-dependent recreational activities and volunteer opportunities.

u. Waterfront parks can serve as important gateways to wildlife refuges, wildlife areas and ecological reserves by providing staging and education opportunities and serving as buffers between these lands and developed areas.

v. Education, interpretation and community service opportunities can be provided in water-oriented recreational facilities and wildlife refuges, wildlife areas and ecological reserves. These activities can increase appreciation and stewardship of the Bay and improve public safety.

w. Ferry terminals in waterfront parks and marinas, and near launching ramps and fishing piers, can improve public access to parks. However, if not properly located, improved and managed, ferry facilities and operations can disrupt recreational use of water-oriented recreational facilities.

Policies

1. Diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, should be provided to meet the needs of a growing and diversifying population, and should be well distributed around the Bay and improved to accommodate a broad range of water-oriented recreational activities for people of all races, cultures, ages and income levels. Periodic assessments of water-oriented recreational needs that forecast demand into the future and reflect changing recreational preferences should be made to ensure that sufficient, appropriate water-oriented recreational facilities are provided around the Bay. Because there is no practical estimate of the acreage needed on the shoreline of the Bay, waterfront parks should be provided wherever possible.

2. Waterfront land needed for parks and beaches to meet future needs should be reserved now, because delay may mean that needed shoreline land could otherwise be preempted for other uses. However, recreational facilities need not be built all at once; their development can proceed over time. Interim use of a waterfront park priority use area prior to its development as a park should be permitted, unless the use would prevent the site from being converted to park use or would involve investment in improvements that would preclude the future use of the site as a park.

3. Recreational facilities, such as waterfront parks, trails, marinas, live-aboard boats, non-motorized small boat access, fishing piers, launching lanes, and beaches, should be encouraged and allowed by the Commission, provided they are located, improved and managed consistent with the following standards:

   a. **General Recreational facilities** should:(1) Be well distributed around the shores of the Bay to the extent consistent with the more specific criteria below. Any concentrations of facilities should be as close to major population centers as is feasible; (2) Not pre-empt land or water area needed for other priority uses,

but efforts should be made to integrate recreation into such facilities to the extent that they are compatible.; (3) Be feasible from an engineering viewpoint; and (4) Be consistent with the public access policies that address wildlife compatibility and disturbance. In addition: (5) Different types of compatible public and commercial recreation facilities should be clustered to the extent feasible to permit joint use of ancillary facilities and provide a greater range of choices for users. (6) Sites, features or facilities within designated waterfront parks that provide optimal conditions for specific water-oriented recreational uses should be preserved and, where appropriate, enhanced for those uses, consistent with natural and cultural resource preservation. (7) Access to marinas, launch ramps, beaches, fishing piers, and other recreational facilities should be clearly posted with signs and easily available from parking reserved for the public or from public streets or trails. (8) To reduce the human health risk posed by consumption of contaminated fish, projects that create or improve fishing access to the Bay at water-oriented recreational facilities, such as fishing piers, beaches, and marinas, should include signage that informs the public of consumption advisories for the species of Bay fish that have been identified as having potentially unsafe levels of contaminants. (9) Complete segments of the Bay and Ridge Trails where appropriate, consistent with Policy 4-a-6.

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 and require frequent dredging; have insufficient upland; contain valuable tidal marsh or tidal flat, or important subtidal areas; or are needed for other water-oriented priority uses. 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, marinas should include public amenities, such as viewing areas, restrooms, public mooring docks or floats and moorages for transient recreational boaters, non-motorized small boat launching facilities, public parking; substantial physical and visual access; and maintenance for all facilities.

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) New ramps and improvements to existing ramps should provide for use by a wide variety of boats, including power boats and non-motorized small boats. (6) Fill for ramps into the water, docks, and similar facilities should be permitted. Other fill should not be permitted.

e. **Non-Motorized Small Boats.** (1) Where practicable, access facilities for non-motorized small boats should be incorporated into waterfront parks, marinas, launching ramps and beaches, especially near popular waterfront destinations. (2) Access points should be located, improved and managed to avoid significant adverse affects on wildlife and their habitats, should not interfere with commercial navigation, or security and exclusion zones or pose a danger to recreational boaters from commercial shipping operations, and should provide for diverse, water-accessible overnight accommodations, including camping, where acceptable to park operators. (3) Sufficient, convenient parking that accommodates expected use should be provided at sites improved for launching non-motorized small boats. Where feasible, overnight parking should be provided. (4) Site improvements, such as landing and launching facilities, restrooms, rigging areas, equipment storage and concessions, and educational programs that address navigational safety, security, and wildlife compatibility and disturbance should be provided, consistent with use of the site. (5) Facilities for boating organizations that provide training and stewardship, operate concessions, provide storage or boathouses should be allowed in recreational facilities where appropriate. (6) Design standards for non-motorized small boat launching access should be developed to guide the improvement of these facilities. Launching facilities should be accessible and designed to ensure that boaters can easily launch their watercraft. Facilities should be durable to minimize maintenance and replacement cost.

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

g. **Beaches.** Sandy beaches should be preserved, enhanced, or restored for recreational use, such as swimming, consistent with wildlife protection. New beaches should be permitted if the site conditions are suitable for sustaining a beach without excessive beach nourishment.

h. **Water-oriented commercial-recreation.** Water-oriented commercial recreational establishments, such as restaurants, specialty shops, private boatels, recreational equipment concessions, and

amusements, should be encouraged in urban areas adjacent to the Bay. Public docks, floats or moorages for visiting boaters should be encouraged at these establishments where adequate shoreline facilities can be provided. Effort should be made to link commercial-recreation centers and waterfront parks by ferry or water taxi.

4. To assure optimum use of the Bay for recreation, the following facilities should be encouraged in waterfront parks and wildlife refuges.

   a. **In waterfront 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, swimming, environmental, historical and cultural education and interpretation, 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, or are designed to provide for passive use and enjoyment of the Bay when not being used for sports. (3) Where shoreline open space includes areas used for hunting waterbirds, public areas for launching non-motorized small boats 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 and other water-oriented recreational craft, such as kayaks, canoes and sailboards, should be provided in waterfront parks where feasible. (5) Except as may be approved pursuant to recreation policy 4-b, 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. (6) Trails that can be used as components of the San Francisco Bay Trail, the Bay Area Ridge Trail or links between them should be developed in waterfront parks. San Francisco Bay Trail segments should be located near the shoreline unless that alignment would have significant adverse effects on Bay resources; in this case, an alignment as near to the shore as possible, consistent with Bay resource protection, should be provided. Bay Area Ridge Trail segments should be developed in waterfront parks where the ridgeline is close to the Bay shoreline. (7) Bus stops, kiosks and other facilities to accommodate public transit should be provided in waterfront parks to the maximum extent feasible. Public parking should be provided in a manner that does not diminish the park-like character of the site. Traffic demand management strategies and alternative transportation systems should be developed where appropriate to minimize the need for large parking lots and to ensure parking for recreation uses is sufficient. (8) Interpretive information describing natural, historical and cultural resources should be provided in waterfront parks where feasible. (9) In waterfront parks that serve as gateways to wildlife refuges, interpretive materials and programs that inform visitors about the wildlife and habitat values present in the park and wildlife refuges should be provided. Instructional materials should include information about the potential for adverse impacts on wildlife, plant and habitat resources from certain activities. (10) The Commission may permit the placement of public utilities and services, such as underground sewer lines and power cables, in recreational facilities provided they would be unobtrusive, would not permanently disrupt use of the site for recreation, and would not detract from the visual character of the site.

b. **In waterfront parks and wildlife refuges with historic buildings.** Historic Buildings in waterfront parks and wildlife refuges should be developed and managed for recreation uses to the maximum practicable extent consistent with the Bay Plan Map policies and all of the following:

(1) Physical and visual access corridors between inland public areas, vista points and the shoreline should be created, preserved or enhanced. Corridors for Bay-related wildlife should also be created, preserved and enhanced where needed and feasible.

(2) Historic structures and districts listed on the National Register of Historic Places or California Registered Historic Landmarks should be preserved consistent with applicable state and federal Historic Preservation law and should be used consistent with the Bay Plan recreation policies. Public access to the exterior of these structures should be provided. Public access to the interiors of these structures should be provided where appropriate.

(3) To assist in generating the revenue needed to preserve historic structures and develop, operate and maintain park improvements and to achieve other important public objectives, uses other than water-oriented recreation, commercial recreation and public assembly facilities may be authorized only if they would: (a) not diminish recreational opportunities or the park-like character of the site; (b) preserve historic buildings where present for compatible new uses; and (c) not significantly, adversely affect the site's fish, other aquatic life and wildlife and their habitats.

5. Bay resources in waterfront parks and, where appropriate, wildlife refuges should be described with interpretive signs. Where feasible and appropriate, waterfront parks and wildlife refuges should provide diverse environmental education programs, facilities and community service opportunities, such as classrooms and interpretive and volunteer programs.

6. 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.

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

8. Signs and other information regarding shipping lanes, ferry routes, U.S. Coast Guard rules for navigation, such as U.S. Coast Guard Rule 9, weather, tide, current and wind hazards, the location of habitat and wildlife areas that should be avoided, and safety guidelines for smaller recreational craft, should be provided at marinas, boat ramps, launch areas, personal watercraft and recreational vessel rental establishments, and other recreational watercraft use areas.

9. Ferry terminals may be allowed in waterfront park priority use areas and marinas and near fishing piers and launching lanes, provided the development and operations of the ferry facilities do not interfere with current or future park and recreational uses, and navigational safety can be assured. Terminal configuration and operation should not disrupt continuous shoreline access. Facilities provided for park and marina patrons, such as parking, should not be usurped by ferry patrons. Shared parking arrangements should be provided to minimize the amount of shoreline area needed for parking.

Amended September 2006

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 and affords a variety of habitats for many diverse plant and wildlife populations. It provides an environment for numerous forms of public enjoyment including viewing, photography, wildlife observation, 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. Access to the Bay allows the public to discover, experience and appreciate the Bay's natural resources and can foster public support for Bay resource protection, including habitat acquisition and restoration. Public access can provide for recreational activities, educational and interpretive opportunities, subsistence fishing, and means for alternative transportation. The Bay and its shoreline can also be refuges from heat and noise and can offer relief from crowded, often stressful, urban areas, thereby contributing to well-being.

c. Public access required by the Commission is an integral component of development and usually consists of pedestrian and other nonmotorized access to and along the shoreline of San Francisco Bay. In general, public access to the Bay is free and available to all users. It may include certain improvements, such as paving, landscaping, street furniture, restrooms, and drinking fountains; and it may allow for uses, such as bicycling, fishing, picnicking, nature education, public programming that activates the shoreline, etc. Visual access to the Bay is a critical part of public access. Public access spaces can promote local identity through programming, which may include educational, cultural, civic, health and wellness, or other activities. In projects that cannot provide onsite public access due to safety or use conflicts, including significant adverse effects on wildlife, in lieu public access may be appropriate.

d. The Commission has adopted advisory "Public Access Design Guidelines" to assist in the siting and design of public access to San Francisco Bay. 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.

e. Although public access to the approximately 1,000-mile Bay shoreline has increased significantly since the adoption of the Bay Plan in 1968, demand for additional public access to the Bay continues due to a growing Bay Area population and the desirability of shoreline access areas. Diverse public access experiences are in great demand, both along urban waterfronts and in more natural areas. The full potential for access to the Bay has by no means yet been reached. Additionally, certain communities may be physically and/or culturally disconnected from public access areas due to land use patterns, poor public transit, lack of safe bicycle and walking paths, language barriers, economic barriers, and/or culturally inaccessible designs.

f. Accelerated flooding from sea level rise and storm activity will severely impact existing shoreline public access, resulting in temporary or permanent closures. Periodic and consistent flooding would increase damage to public access areas, which can then require additional fill to repair, raise maintenance costs, and cause greater disturbance and displacement of the site's natural resources. Risks to public health and safety from sea level rise and shoreline flooding may require new shoreline protection to be installed or existing shoreline protection to be modified, which may impede physical and visual access to the Bay.

g. Public agencies have contributed to improved Bay access by providing a substantial number of parks and recreation areas. 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.

h. Public access is not equally or evenly distributed around the Bay, nor are all public access areas of the same quality, due to varying levels of resources for improvements, maintenance, and amenities. Often public access areas near identified vulnerable or disadvantaged communities are difficult to access, poorly maintained, infrequently improved, and/or do not serve the needs of the local community. This can perpetuate cycles of avoidance, underuse, neglect, and in extreme cases, loss of public access to the Bay. However, there remains a need to better understand where these gaps and inconsistencies are located regionally in order to address them and provide more equitable and convenient public access that reflects the culture(s) of the local community and meets the needs of its residents.

i. Designing and programming public access in a manner that is welcoming to all creates public spaces that are well-loved and cared for by their users and can help account for unintended consequences, such as low usage or a sense of exclusion by specific communities. Meaningful involvement of underrepresented communities in the project planning, design, and ongoing maintenance phases can help address this, as well as cultivate community empowerment, lifelong stewardship, a sense of ownership, and connections to public access areas and the Bay. The design and programming of public access can also engender a welcoming atmosphere for all by embracing the multicultural and indigenous histories and presence of the surrounding area.

j. 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.

k. Public access areas obtained through the permit process are most utilized if they provide physical access, provide connections to public rights-ofway, are related to adjacent uses, are designed, improved and maintained clearly to indicate their public character, and provide visual access to the Bay. Flooding from sea level rise and storm activity increases the difficulty of designing public access areas (e.g., connecting new public access that is set at a higher elevation or located farther inland than existing public access areas).

l. In some cases, certain uses may unduly conflict with accompanying public access. For example, unmanaged or inappropriately located public access may adversely affect wildlife or some port or water-related industrial activities may pose a substantial hazard to public access users.

m. Insufficient knowledge on the specific type and severity of effects of human activities on wildlife creates a need for more scientific studies, both in the San Francisco Bay Area and elsewhere in similar habitats with similar human activities. More baseline data are needed for comparison purposes and to help isolate disturbance factors (e.g., disturbances caused by human activities versus other factors such as poor water quality or natural variability).

n. Studies indicate that public access may have immediate effects on wildlife (including flushing, increased stress, interrupted foraging, or nest abandonment) and may result in adverse long-term population and species effects. Although some wildlife may adapt to human presence, not all species or individuals may adapt equally, and adaptation

may leave some wildlife more vulnerable to harmful human interactions such as harassment or poaching. The type and severity of effects, if any, on wildlife depend on many factors, including physical site configuration, species present, and the nature of the human activity. Accurate characterization of current and future site, habitat and wildlife conditions, and of likely human activities, would provide information critical to understanding potential effects on wildlife.

o. Potential adverse effects on wildlife from public access may be avoided or minimized by siting, designing and managing public access to reduce or prevent adverse human and wildlife interactions. Managing human use of the area may include adequately maintaining improvements, periodic closure of access areas, pet restrictions such as leash requirements, and prohibition of public access in areas where other strategies are insufficient to avoid adverse effects. Properly sited and/or designed public access can avoid habitat fragmentation and limit predator access routes to wildlife areas. In some cases, public access adjacent to sensitive wildlife areas may be set back from the shoreline a greater distance because buffers may be needed to avoid or minimize human disturbance of wildlife. Appropriate siting, design and management strategies depend on the environmental characteristics of the site, the likely human uses of the site, and the potential impacts of future climate change.

p. Providing diverse and satisfying public access opportunities can reduce the creation of informal access routes to decrease interaction between humans and wildlife, habitat fragmentation, and vegetation trampling and erosion. Formal public access also provides for more predictable human actions, which may increase the ability of wildlife to adjust to human use.

Policies

1. 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.

2. 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, wildlife area, or other use, except in cases where public access would be clearly inconsistent with the project because of public safety considerations or significant use conflicts, including unavoidable, significant adverse effects on Bay natural resources. In these cases, in lieu access at another location preferably near the project should be provided. If in lieu public access is required and cannot be provided near the project site, the required access should be located preferably near identified vulnerable or disadvantaged communities lacking well-maintained and convenient public access in order to foster more equitable public access around the Bay Area.

3. Public access to some natural areas should be provided to permit study and enjoyment of these areas. However, some wildlife are 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.

4. Public access should be sited, designed and managed to prevent significant adverse effects on wildlife. To the extent necessary to understand the potential effects of public access on wildlife, information on the species and habitats of a proposed project site should be provided, and the likely human use of the access area analyzed. In determining the potential for significant adverse effects (such as impacts on endangered species, impacts on breeding and foraging areas, or fragmentation of wildlife corridors), site specific information provided by the project applicant, the best available scientific evidence, and expert advice should be used. In addition, the determination of significant adverse effects may also be considered within a regional context. Siting, design and management strategies should be employed to avoid or minimize adverse effects

on wildlife, informed by the advisory principles in the Public Access Design Guidelines. If significant adverse effects cannot be avoided or reduced to a level below significance through siting, design and management strategies, then in lieu public access should be provided, consistent with the project and providing public access benefits equivalent to those that would have been achieved from on-site access. Where appropriate, effects of public access on wildlife should be monitored over time to determine whether revisions of management strategies are needed.

5. Public access that substantially changes the use or character of the site should be sited, designed, and managed based on meaningful community involvement to create public access that is inclusive and welcoming to all and embraces local multicultural and indigenous history and presence. In particular, vulnerable, disadvantaged, and/or underrepresented communities should be involved. If such previous outreach and engagement did not occur, further outreach and engagement should be conducted prior to Commission action.

6. Public access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding.

7. 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 wherever 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. Any public access provided as a condition of development should either be required to remain viable in the event of future sea level rise or flooding, or equivalent access consistent with the project should be provided nearby.

8. Public access improvements provided as a condition of any approval should be consistent with the project, the culture(s) of the local community, and the physical environment, including protection of Bay natural resources, such as aquatic life, wildlife and plant communities, 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 provide barrier free access for persons with disabilities, for people of all income levels, and for people of all cultures to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs, including using appropriate languages or culturally-relevant icon-based signage.

9. 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.

10. Access to and along 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. Diverse and interesting public access experiences should be provided which would encourage users to remain in the designated access areas to avoid or minimize potential adverse effects on wildlife and their habitat.

11. 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.

12. Federal, state, regional, and local jurisdictions, special districts, and the Commission should cooperate to provide appropriately sited, designed and managed public access, especially to link the entire series of shoreline parks, regional trail systems (such as the San Francisco Bay Trail) and existing public access areas to the extent feasible without additional Bay filling and without significant adverse

effects on Bay 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.

13. The Public Access Design Guidelines should be used as a guide to siting and designing public access consistent with a proposed project. The Design Review Board should advise the Commission regarding the adequacy of the public access proposed. The Design Review Board should encourage diverse public access to meet the needs of a growing and diversifying population. Public access should be well distributed around the Bay and designed or improved to accommodate a broad range of activities for people of all races, cultures, ages, income levels, and abilities.

14. Public access should be integrated early in the planning and design of Bay habitat restoration projects to maximize public access opportunities and to avoid significant adverse effects on wildlife.

15. The Commission should continue to support and encourage expansion of scientific information on the effects of public access on wildlife and the potential of siting, design and management to avoid or minimize impacts. Furthermore, the Commission should, in cooperation with other appropriate agencies and organizations, determine the location of sensitive habitats in San Francisco Bay and use this information in the siting, design and management of public access along the shoreline of San Francisco Bay.

Amended October 2019

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 built in clusters, leaving areas open 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, and removed of derrick, 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 developments 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 Maps).

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 April 1979

Salt Ponds

Findings and Policies Concerning Salt Ponds Around the Bay

Findings

a. Natural salt pans (ponds), ranging in size from a few feet in diameter to more than 1,000 acres, once existed in the tidal marshes of the Bay. These ponds supported vegetation such as widgeongrass, providing an important food source for waterfowl and salt was harvested from these ponds by Native Americans and early Spanish and Mexican settlers. Beginning in the 1850s, shallow areas of the Bay and tidal marshes were diked to form ponds to commercially produce salt through solar evaporation. Solar salt production relies on natural conditions present in the Bay Area including adequate area for solar evaporation of salt water, a dry climate and prevailing summer winds to aid evaporation.

b. Since the 1960s the public has acquired roughly 90 percent of the over 41,000 acres of property used for production for the purpose of maintaining and restoring habitat, which will make the Bay larger and healthier. Currently, salt ponds total some 30,000 acres in the South Bay and more than 11,000 acres in the North Bay. The North Bay salt ponds are publicly owned and are being managed and restored for the benefit of fish, other aquatic organisms and wildlife. The South Bay consists of salt ponds that are: (1) publicly owned and being managed and restored for the benefit of fish, other aquatic organisms and wildlife (about 16,000 acres); (2) publicly owned and privately managed for salt production (about 8,000 acres); (3) privately owned and managed for solar salt production, particularly for harvest (about 4,400 acres); or (4) publicly or privately owned with an undetermined future use (about 1,400 acres).

c. Cargill Salt, a business unit of Cargill Incorporated, is the sole private owner of salt ponds and the only entity producing salt in San Francisco Bay through solar evaporation. Changes in the market for several varieties of salt products coupled with the achievement of greater production efficiencies in the salt pond system have enabled Cargill to meet current market demand for salt in an area reduced from that historically used for commercial salt production.

d. Salt production is an economically important and productive use of the waters of the Bay and salt is an important product. Multiple brand names representing a myriad of different salt products are produced in the Bay Area for food, pharmaceutical, agricultural and water softening uses. In addition, brine shrimp are commercially harvested from salt ponds for aquaculture research and tropical fish food.

e. The water surface area of the salt ponds supplements the water surface area of the Bay and thus helps to moderate the Bay Area climate and to prevent smog. Further, the salt ponds contribute to the open space character of the Bay and the levees surrounding the ponds, although not designed or maintained for flood control, help to protect adjacent low-lying areas from tidal flooding.

f. Salt is made by moving Bay water through a series of ponds that become progressively more saline as a result of evaporation. Beginning with an intake pond, where Bay water is taken into the salt pond system and salinity matches that of the Bay, brine (hypersaline water) is moved through evaporator ponds until saturated with sodium chloride. The brine, or pickle, is then moved to the final pond, called the pickle pond. The portion of the salt pond system where the salt is harvested include—in order of their stage in the salt production cycle—pickle ponds (which are used for storage), crystallizers (where the salt precipitates on leveled and packed beds and is harvested using heavy equipment), bittern desalting ponds (where residual brine solution discharged from crystallizers prior to harvest is sent for removal of additional salt), bittern storage ponds (where bittern is stored prior to sale for dust suppressant and de-icing products or mixed with Bay water and sent back to crystallizers for harvest), and wash ponds (which receive Bay water that has been used to wash impurities from the crystallized salt).

g. For foraging waterbirds, the depth of a salt pond affects access to prey. In addition, the level of salinity in salt ponds affects the use of such areas by plants and animals. Species found in low-salinity salt ponds are similar to those found in the Bay and include plants, such

as sea lettuce (a macroalgae); invertebrates, such as crabs; fish, such as bay pipefish; and waterbirds, such as American White pelicans, California least terns and numerous wintering waterfowl. Medium-salinity ponds are dominated by green algae, fed upon by brine shrimp and brine flies that are food for waterbirds, such as Northern Shovelers and avocets. In high-salinity salt ponds, no fish are able to survive, but abundant brine shrimp and brine flies support numerous waterbirds, including grebes, gulls, sandpipers and phalaropes. Ponds with extremely high salinity support very little aquatic life and, consequently, if used by birds are primarily used for roosting, not foraging. In addition, dry areas and levees and internal islands can provide breeding habitat for birds such as the Western snowy plover and American Avocet.

h. Salt ponds no longer needed for salt production offer a significant opportunity for the restoration of large areas of the former Bay to tidal action. Increased tidal influence associated with the removal or breaching of salt pond levees can: (1) support the establishment of new subtidal, tidal flat and tidal marsh habitat; (2) benefit Bay water quality; (3) improve the health of the Bay's aquatic food web by re-connecting existing subtidal areas to tidal marsh habitat, where much of the Bay's nutrient-rich plant life is located; and (4) increase resting, foraging and breeding opportunities for numerous fish, other aquatic organisms and wildlife species dependent upon subtidal, tidal flat and tidal marsh habitats (e.g., the Alameda song sparrow and salt marsh harvest mouse). In some cases, if salt ponds are opened to the Bay, new levees may have to be built on the landward side of the ponds to provide the flood control protection now being provided by the salt pond levees.

i. Maintaining some salt ponds no longer needed for salt production as managed pond habitat can benefit resident and migratory shorebirds and waterfowl by providing for a range of resting, foraging and breeding needs.

j. Salt ponds no longer needed for salt production offer an opportunity to increase public access to the Bay and shoreline in conjunction with restoration, enhancement or conversion of ponds to aquatic or wetland habitat.

Policies

1. The use and maintenance of salt ponds for salt production should be encouraged. Accordingly, property tax policy should assure that rising property taxes do not force conversion of the ponds and other wetlands to urban development. In addition, maintaining the integrity of the salt production system should be encouraged (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 the owner of any salt ponds withdraws any of the ponds from their present uses, the public should make every effort to buy these lands and restore, enhance or convert these areas to subtidal or wetland habitat. This type of purchase should have a high priority for any public funds available, because opening ponds to the Bay represents a substantial opportunity to enlarge the Bay and restoring, enhancing or converting ponds can benefit fish, other aquatic organisms and wildlife, and can increase public access to the Bay.

3. Any project for the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and provisions for long-term maintenance and management needs. Design and evaluation of the project should include an analysis of:

   a. The anticipated habitat type that would result from pond conversion or restoration, and the predicted effects on the diversity, abundance and distribution of fish, other aquatic organisms and wildlife;

   b. Potential fill activities, including the use of fill material such as sediments dredged from the Bay and rock, to assist restoration objectives;

c. Flood management measures;

d. Mosquito abatement measures;

e. Measures to control non-native species;

f. The protection of the services provided by existing public facilities and utilities such as power lines and rail lines;

g. Siting, design and management of public access to maximize public access and recreational opportunities while avoiding significant adverse effects on wildlife; and

h. Water quality protection measures that include management of highly saline discharges into the Bay; monitoring and management of mercury methylation and sediments with contaminants; managing the release of copper and nickel to the Bay; and the minimization of sustained low dissolved oxygen levels in managed ponds.

4. If the public does not acquire for habitat restoration, enhancement or creation purposes all the salt ponds proposed for withdrawal from their use in salt production, and if some of the ponds are proposed to be developed or used for purposes other than salt production, consideration of the development should be guided by the following criteria:

   a. Recognizing the potential for salt ponds to contribute to the moderation of the Bay Area climate, the alleviation of air pollution and the open space character of the Bay, and to maximize potential habitat values, development of any of the salt ponds should provide for retaining the maximum amount of water surface area consistent with the project. Water surface area retained can include a variety of subtidal and wetland habitat types including diked ponds managed for wildlife or restoration of ponds to tidal action;

   b. Development should provide the maximum public access to the Bay consistent with the project while avoiding significant adverse effects on wildlife; and

   c. An appropriate means of permanent dedication of some of the retained water surface area should be required as part of any development.

5. To determine where and how much water surface area should be retained and how much public access should be provided consistent with any development proposal in a salt pond(s), a comprehensive planning process should be undertaken as part of the development project that integrates with regional and local habitat restoration and management objectives and plans, and provides opportunities for collaboration among local, state and federal agencies, landowners, other private interests, and the public. In addition, the planning process should incorporate:

   a. A baseline scientific assessment of existing and historical natural conditions and resource values of the pond(s);

   b. Natural resource conservation objectives that will protect and enhance onsite and adjacent habitat and species diversity;

   c. Provisions for public access and recreational opportunities appropriate to the land's use, size and existing and future habitat values; and

   d. Flood and mosquito management measures.

Amended August 2005

Managed Wetlands

Findings and Policies Concerning Managed Wetlands Around the Bay

Findings

a. Managed wetlands are areas of historical tidal marshes that have been diked off from the Bay and are managed for wildlife, primarily waterfowl. Managing water intake, circulation and draining is the primary means to promote diverse managed wetland vegetation and wildlife habitats. In the San Francisco Bay, approximately 53,000 acres of managed wetlands are currently maintained as private waterfowl hunting clubs and publicly-owned wildlife management areas and refuges. In the Suisun Marsh, privately-owned managed wetlands account for about 35,300 acres, and about 15,400 acres are publicly owned. Less than 2,000 acres currently exist outside of Suisun Marsh (located in the North Bay), of which approximately 650 acres are privately owned.

b. Managed wetlands are a unique resource for waterfowl and other wildlife. Managed wetlands provide cover and foraging opportunities for wintering waterfowl, and cover, foraging and nesting opportunities for resident waterfowl. Managed wetlands also provide habitat for a diversity of other resident and migratory species including other waterbirds, shorebirds, amphibians, and mammals. Managed wetlands can protect upland areas by retaining flood waters and also provide an opportunity for needed space for adjacent wetlands to migrate landward as sea levels rise. Managed wetlands also provide for a variety of recreational opportunities including hunting, fishing, wildlife viewing, and hiking, and contribute to the open space character of the Bay.

c. Privately-owned managed wetlands no longer viable as waterfowl hunting areas provide an opportunity for public purchase and enhancement and management for multiple species by providing for a range of resting, foraging and breeding needs.

d. Managed wetlands offer a significant opportunity for restoration of tidal action to former areas of the Bay. Increased tidal influence associated with the removal or breaching of levees can: (1) support the establishment of new subtidal, tidal flat and tidal marsh habitat; (2) benefit Bay water quality; (3) improve the health of the Bay's aquatic food web by re-connecting existing subtidal areas to tidal marsh habitat, where much of the Bay's nutrient-rich plant life is located; and (4) increase resting, foraging and breeding opportunities for numerous fish, other aquatic organisms and wildlife species dependent upon subtidal, tidal flat and tidal marsh habitats. However, restoration of managed wetlands may also result in changes in ecosystem function, including the displacement of wildlife species due to loss of habitat.

Policies

1. The continued operation and maintenance of managed wetlands for waterfowl hunting, as game refuges, or for waterfowl food production should be encouraged. Accordingly, property tax policy should assure that rising property taxes do not force conversion of the managed wetlands to urban development.

2. If the owner of any managed wetland withdraws any of the wetlands from their present use, the public should make every effort to buy these lands and restore them to tidal or subtidal habitat, or retain, enhance and manage these areas as diked wetland habitat for the benefit of multiple species. This type of purchase should have a high priority for any public funds available.

3. Any project for the restoration, enhancement or conversion of managed wetlands to subtidal or wetland habitat should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and provisions for long-term maintenance and management needs. Design and evaluation of the project should include an analysis of:

    a. The anticipated habitat type that would result from managed wetland conversion or restoration, and the predicted effects on the diversity, abundance and distribution of fish, other aquatic organisms and wildlife;

    b. Potential fill activities, including the use of fill material such as sediments dredged from the Bay and rock, to assist restoration

objectives;

c. Flood management measures;

d. Mosquito abatement measures;

e. Measures to control non-native species;

f. Opportunities for a diversity of public access and recreational activities; and

g. Water quality protection measures that may include monitoring for constituents of concern, such as methylmercury.

4. If the public does not acquire for habitat restoration, enhancement or conversion purposes the managed wetland proposed for withdrawal from use for waterfowl hunting, and if the managed wetland is proposed to be developed or used for purposes other than waterfowl hunting, consideration of the development should be guided by the following criteria:

   a. Recognizing the potential for managed wetlands to contribute to the moderation of the Bay Area climate, the alleviation of air pollution and the open space character of the Bay, and to maximize potential habitat values, development of any of the managed wetlands should provide for retaining the maximum amounts of water surface area, consistent with the project. Water surface area retained can include a variety of subtidal and wetland habitat types including diked areas managed for wildlife or restoration of managed wetlands to tidal action;

   b. Development should provide the maximum public access to the Bay, consistent with the project while avoiding significant adverse effects on wildlife; and

   c. An appropriate means of permanent dedication of some of the retained water surface area should be required as part of any development.

5. Study should be given to acquisition of "development rights" to the diked wetlands, to continue them in their present uses.

Amended November 2007

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.

d. Desalination is the process of removing salt, other minerals and contaminants from saline water to produce fresh drinking water. The intake of Bay water to a desalination plant can pull (entrain) small aquatic organisms (e.g., larvae, eggs, plankton) into the water intake structure where they can become trapped and die. Entrainment can be minimized by such measures as locating the water intake away from areas of high aquatic organism productivity, reducing the volume and velocity of water intake, adequately engineering and screening the intake pipeline, and temporarily reducing or ceasing intake at times when eggs and larvae are present. The discharge of concentrated brine from a desalination plant into the Bay can severely impact fish and other aquatic organisms in the vicinity of the discharge unless the brine is diluted to approximately the same salinity range as the Bay. The Regional Water Quality Control Board sets standards for brine discharged into the Bay, and a National Pollutant Discharge Elimination System permit is required from the Regional Board for any desalination plant discharge.

e. A desalination plant does not need to be located adjacent to the Bay; therefore, except for pipelines and directly related facilities needed for Bay water intake and brine discharge, Bay fill is not needed for desalination plants.

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, 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. 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. Desalination projects should be located, designed and operated in a manner that: (a) avoids or minimizes to the greatest practicable extent adverse impacts on fish, other aquatic organisms and wildlife and their habitats; (b) ensures that the discharge of brine into the Bay is properly diluted and rapidly disperses into the Bay waters to minimize impacts; and (c) is consistent with the discharge requirements of the Regional Water Quality Control Board.

11. Because desalination plants do not need to be located in the Bay or directly on the shoreline: (a) no Bay fill should be approved for desalination plants except for a minor amount of fill needed for pipelines, fish screening devices, and other directly related facilities that provide Bay water to a plant and discharge diluted brine from the plant back into the Bay; and (b) maximum feasible public access consistent with the project should be included as part of any desalination project that uses Bay waters.

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.

13. 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.

14. 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.

Amended January 2005

Fills in Accord with the Bay Plan

Policies Concerning Fills in Accord with the Bay Plan

Policies

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:

1. Fills in accord with the 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 three conditions:

    a. 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

    b. 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

    c. The filling is in accord with the Bay Plan policies as to minor fills for improving shoreline appearance or public access.

Fill for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned Property

Policies Concerning Filling for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned Property

Policies

1. Filling for Bay-oriented commercial recreation and Bay-oriented public assembly on privately-owned property should be approved only if the filling would provide 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 and the proposed fill would fully comply with all of the following additional criteria:

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

        (1) Public recreation (beaches, parks, etc.); and

        (2) 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.

Fill for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned or Publicly-Owned Property

Policies Concerning Filling for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned or Publicly-Owned Property

Policies

1. Filling for Bay-oriented commercial recreation and Bay-oriented public assembly on privately-owned or publicly-owned property should be approved only if the filling would provide 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 and the proposed fill would fully comply with all of the additional criteria:

    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:

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

(2) become obsolete through physical deterioration, or

(3) 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:

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

(2) 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 the 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.

Filling for Public Trust Uses on Publicly-Owned Property Granted in Trust to a Public Agency by the Legislature

Policies Concerning Filling for Public Trust Uses on Publicly-Owned Property Granted in Trust to a Public Agency by the Legislature

Policies

1. Filling should be approved if the filling is undertaken on land granted in trust by the Legislature to a public agency and the Commission finds that the filling and use proposed on the fill are consistent with the Public Trust Doctrine, the terms of the legislative trust grant, and with a Special Area Plan for the area that the Commission has found:

    a. Is necessary to the health, safety, and welfare of the public in the entire Bay Area; and

    b. Provides for major shoreline parks, regional public access facilities, removal of existing pile-supported fill, open water basins, increased safety of fills, mechanisms for implementation, enhanced public views of the Bay, and other benefits to the Bay, all of which exceed the benefits that could be accomplished through BCDC's permit authority for individual projects through the application of other Bay Plan policies.

Mitigation

Findings and Policies Concerning Mitigation

Findings

a. Mitigation for direct or indirect adverse effects on the environment, including to land, air, water, minerals, flora, fauna, and objects of historic or aesthetic significance, includes the following actions, taken in sequence: (1) avoiding the impact; (2) minimizing the impact; (3) repairing, rehabilitating, or restoring the impacted environment, and finally; (4) compensating for the impact by replacing or providing substitute resources, thus providing compensatory mitigation.

b. Compensatory mitigation consists of measures to offset unavoidable adverse impacts to the environment and may include: (1) restoring a resource where formerly located (e.g., restoration of tidal marsh from a diked former tidal marsh area); (2) creating a new resource in an area that does not currently or did not historically support that type of resource (e.g., the creation of a tidal marsh from an upland area); (3) enhancing the functions of an existing resource that is degraded in comparison to historic conditions (e.g., establishing native vegetation in an existing tidal marsh); and in some cases (4) preserving a resource through a legally enforceable mechanism (e.g., a deed restriction). Enhancement and preservation as sole mitigation measures do not compensate for lost area of a resource.

c. A compensatory mitigation program will increase the likelihood of mitigation success when the program includes project goals, performance standards, a monitoring plan based on the goals and performance standards to measure the success of the project, a contingency plan in the event of project failure, and provisions for the long-term (i.e., for the duration of the impacts of the project) maintenance, management and protection of the mitigation site. Success is also increased by the use of performance standards that include measures of both composition (e.g., percentage of vegetation cover, diversity of wildlife species) and function (e.g., wildlife nesting, nutrient retention, hydrologic functions). Reference sites (i.e., minimally impaired sites that are representative of the expected ecological conditions of a habitat of a particular type and region) can provide an important basis for comparison with mitigation sites.

d. Resource restoration provides, generally, an improved probability of greater ecological suocess than resource creation, since the proper substrate may still be present in an area that once supported a desired habitat type, seed sources may be on-site or nearby, and appropriate hydrological conditions may still exist or may be more easily restored. The potential for success of restoration and creation projects can be increased with the inclusion of transition zones (areas between two bordering habitats where plants and animals from both habitats are found) and buffers (areas established adjacent to a habitat to reduce the adverse impacts of surrounding land use and activities).

e. Decisions regarding the type and location of compensatory mitigation involve tradeoffs that require a case-by-case analysis. A broad scientific approach to compensatory mitigation involves the location and design of mitigation sites based on a Bay-wide assessment to compensate for the adverse impacts of an authorized project while also contributing to the long-term ecological functioning of the entire Bay system. Appropriately sited and designed mitigation projects increase the likelihood of successful long-term habitat function of a site and its integration with adjacent habitats. The Baylands Ecosystem Habitat Goals report provides a regional vision of the types, amounts, and distribution of wetlands and related habitats that are needed to restore and sustain a healthy Bay ecosystem, and thus provides a tool in assessing the suitability of a proposed mitigation project.

f. Natural resource areas provide various benefits to human welfare, including climate regulation, flood protection, erosion control, and recreational and aesthetic benefits. Therefore, there may be social and economic effects on nearby communities as a result of impacts on existing resource areas and the siting and design of compensatory mitigation projects. Further, these effects may not be evenly distributed among nearby communities.

g. The required area and type of compensatory mitigation may vary depending on factors such as: the expected time delay between the impact and the functioning of the mitigation

project; the relative quality of the mitigation and the impacted site; the type of mitigation (e.g., restoration, creation, enhancement); and the probability of success of the mitigation project.

h. There are a multitude of benefits created by meaningfully involving underrepresented communities in mitigation projects including new approaches and perspectives, fostering new stewardship, community empowerment, and the creation of new cross-cultural partnerships. Specifically, there may be opportunities to involve communities in project planning, implementation, monitoring, on-site education programs, and other public programming at the site.

i. Mitigation banking involves restoring or creating natural resources to produce mitigation "credits" which can be used to offset unavoidable adverse impacts to existing resources. A mitigation bank is a site where resources are restored, created, or enhanced expressly for the purpose of providing compensatory mitigation in advance of impacts associated with authorized projects. Mitigation banks may be established by individuals who anticipate needing to mitigate for future impacts, or by third parties who develop banks as a commercial venture to sell credits to permittees needing to provide compensatory mitigation. Among other benefits, mitigation banks provide the unique opportunity to address the cumulative effects of small fill projects that are too small to be mitigated individually. Provided mechanisms are in place to assure success, mitigation banking can provide a timely, convenient, cost effective and ecologically successful mitigation option.

j. Fee-based mitigation involves the submittal of a fee by the permittee in-lieu of requiring the permittee to undertake the creation, restoration, or enhancement of a specific mitigation site, or purchasing credits from a mitigation bank. The fee is generally submitted to a third party for implementation of an ongoing or future restoration-creation project. Provided mechanisms are in place to assure success, fee-based mitigation can also provide a timely, convenient, cost effective and ecologically successful mitigation option.

Policies

1. Projects should be designed to avoid adverse environmental impacts to Bay natural resources such as to water surface area, volume, or circulation and to plants, fish, other aquatic organisms and wildlife habitat, subtidal areas, or tidal marshes or tidal flats. Whenever adverse impacts cannot be avoided, they should be minimized to the greatest extent practicable. Finally, measures to compensate for unavoidable adverse impacts to the natural resources of the Bay should be required. Mitigation is not a substitute for meeting the other requirements of the McAteer-Petris Act.

2. Individual compensatory mitigation projects should be sited and designed within a Baywide ecological context, as close to the impact site as practicable, to: (1) compensate for the adverse impacts; (2) ensure a high likelihood of long-term ecological success; and (3) support the improved health of the Bay ecological system. Determination of the suitability of proposed mitigation locations should be guided in part by the information provided in the Baylands Ecosystem Habitat Goals report.

3. For major and appropriate minor projects that require compensatory mitigation, communities surrounding both the project and the compensatory mitigation site should be meaningfully involved in an equitable and culturally-relevant manner. In particular, vulnerable, disadvantaged, and/or underrepresented communities should be involved. This should include consultation with the community in the identification and prioritization of potential projects, and in the monitoring and programming of a mitigation site. If such previous outreach and engagement did not occur, further outreach and engagement should be conducted prior to Commission action.

4. When determining the appropriate location and design of compensatory mitigation, the Commission should also consider potential effects on benefits provided to humans from Bay natural resources, including economic (e.g., flood protection, erosion control) and social (e.g., aesthetic benefits, recreational

opportunities) benefits and whether the distribution of such benefits is equitable.

5. The amount and type of compensatory mitigation should be determined for each mitigation project based on a clearly identified rationale that includes an analysis of: the probability of success of the mitigation project; the expected time delay between the impact and the functioning of the mitigation site; and the type and quality of the ecological functions of the proposed mitigation site as compared to the impacted site.

6. To increase the potential for the ecological success and long-term sustainability of compensatory mitigation projects, resource restoration should be selected over creation where practicable, and transition zones and buffers should be included in mitigation projects where feasible and appropriate. In addition, mitigation site selection should consider site specific factors that will increase the likelihood of long-term ecological success, such as existing hydrological conditions, soil type, adjacent land uses, and connections to other habitats.

7. Mitigation should, to the extent practicable, be provided prior to, or concurrently with those parts of the project causing adverse impacts.

8. When compensatory mitigation is necessary, a mitigation program should be reviewed and approved by or on behalf of the Commission as part of the project. Where appropriate, the mitigation program should describe the proposed design, construction and management of mitigation areas and include:

    a. Clear mitigation project goals;

    b. Clear and measurable performance standards for evaluating the success of the mitigation project, based on measures of both composition and function, and including the use of reference sites;

    c. A monitoring plan designed to identify potential problems early and determine appropriate remedial actions. Monitoring and reporting should be of adequate frequency and duration to measure specific performance standards and to assure long-term success of the stated goals of the mitigation project;

    d. A contingency plan to ensure the success of the mitigation project, or provide means to ensure alternative appropriate measures are implemented if the identified mitigation cannot be modified to achieve success. The Commission may require financial assurances, such as performance bonds or letters of credit, to cover the cost of mitigation actions based on the nature, extent and duration of the impact and/or the risk of the mitigation plan not achieving the mitigation goals; and

    e. Provisions for the long-term maintenance, management and protection of the mitigation site, such as a conservation easement, cash endowment, and transfer of title.

9. Mitigation programs should be 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.

10. If more than one mitigation program is proposed, the Commission should consider the cost of the alternatives in determining the appropriate program, as well as equitably consider the priorities and concerns of surrounding communities.

11. To encourage cost effective compensatory mitigation programs, especially to provide mitigation for small fill projects, the Commission may extend credit for certain fill removal and allow mitigation banking provided that any credit or resource bank is recognized pursuant to written agreement executed by the Commission. Mitigation bank agreements should include: (a) financial mechanisms to ensure success of the bank; (b) assignment of responsibility for the ecological success of the bank; (c) scientifically defensible methods for determining the timing and amount of credit withdrawals; and (d) provisions for long-term maintenance, management and protection

of the bank site. Mitigation banking should only be considered when no mitigation is practicable on or proximate to the project site.

12. The Commission may allow fee-based mitigation when other compensatory mitigation measures are infeasible. Fee-based mitigation agreements should include: (a) identification of a specific project that the fees will be used for within a specified time frame; (b) provisions for accurate tracking of the use of funds; (c) assignment of responsibility for the ecological success of the mitigation project; (d) determination of fair and adequate fee rates that account for all financial aspects of the mitigation project, including costs of securing sites, construction costs, maintenance costs, and administrative costs; (e) compensation for time lags between the adverse impact and the mitigation; and (f) provisions for long-term maintenance, management and protection of the mitigation site.

Amended October 2019

Public Trust

Findings and Policies Concerning the Public Trust

Findings

a. Virtually all the publicly and privately-held unfilled tidelands and submerged lands within the jurisdiction of the Commission are subject to the public trust.

b. The public trust is a paramount public property right held in trust by the state for the benefit of the public.

c. Title to this public trust ownership is vested in the State Lands Commission or legislative grantees.

d. 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.

e. 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.

f. As a result, the public trust ownership provides additional support for Commission decisions affecting such lands.

Policies

1. 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.

Navigational Safety and Oil Spill Prevention

Findings and Policies on Navigational Safety and Oil Spill Prevention

Findings

a. San Francisco Bay's location and unique geographical features create an attractive and important area for water-related industries. These industries rely on shipping for import, export and domestic distribution of petroleum products and other goods. Providing for safe navigation greatly enhances the region's water-related industries.

b. Mariners operating in the Bay face difficult challenges such as increasing vessel traffic, physically restricted shipping lanes, frequent shoaling, rapid weather changes, fog, strong currents, and physical obstructions.

c. Marine accidents that result in spills of hazardous materials, such as oil, can adversely affect a variety of Bay resources, including wildlife habitats, water quality, commercial and recreational fishing, recreation areas, businesses, and personal property. Strong currents and tides can cause spills to reach sensitive resources in a very short time. Spills of petroleum products in the Bay can devastate resident and migratory bird populations.

d. San Francisco Bay has an outstanding navigational safety record because many state, federal and international agencies, organizations and businesses involved with maritime shipping actively participate in programs to improve safe navigation and to prevent marine accidents that could result in spills of hazardous materials, such as oil. The Harbor Safety Committee of the San Francisco Bay Region, composed of representatives from the maritime community, port authorities, pilots, tug operators, the United States Coast Guard, the Office of Spill Prevention and Response, the petroleum and shipping industries, and others with expertise in shipping and navigation, meets regularly to develop additional strategies to further safe navigation and oil spill prevention.

e. The U.S. Coast Guard, which is empowered by federal law to meet its strategic goals of navigational safety and the protection of natural resources, uses its expertise and authority to regulate bridges and aids to navigation.

f. San Francisco Bay is spanned by a number of bridges; some of these are fixed bridges tall enough to safely allow ship traffic under parts of their spans. There are also drawbridges at the Carquinez Strait and Oakland Estuary. Bridges over navigable waterways may be equipped with fenders, navigation lights, clearance gauges, water level gauges, sound devices or radio beacons, all of which improve navigational safety and help prevent spills of hazardous materials, such as oil.

g. There have been no pollution incidents in the Bay Area attributable to improper bridge location, pier placement, navigational lighting, clearance gauges, protection systems or drawspan operation. The U. S. Coast Guard coordinates navigational and operational requirements on all bridge projects to ensure safety is maintained. Existing and proposed bridges are carefully evaluated for their ability to meet the reasonable needs of navigation prior to receiving a federal permit. Drawbridges operate under carefully tailored regulations to ensure safety and operational transportation needs are met.

h. The waters of San Francisco Bay are marked with a system of markers, such as buoys and beacons, to assist navigation. These aids to navigation are water-oriented uses that provide a substantial safety and environmental benefit by helping prevent navigation accidents that could spill hazardous materials, such as oil.

i. Some physical obstructions located near shipping lanes or water transit routes, such as underwater rocks, can be navigation hazards for some types of vessels and can increase risk of spills of hazardous materials, such as oil, and pose safety hazards.

j. Because of the changing marine conditions in San Francisco Bay, safe navigation is highly dependent upon accurate reports on the winds, tides and currents. The Physical Oceanographic Real Time System (PORTS) efficiently provides information on currents, water level, salinity, and other marine weather conditions that are useful to mariners and oil spill response organizations.

k. Communication is essential for safe navigation in heavily used port areas. The U.S. Coast Guard Vessel Traffic Service-San Francisco plays a vital role by promoting safe and orderly vessel traffic within San Francisco Bay through radio communications.

l. Oil spill contingency plans and appropriate, easily accessible and strategically located spill response equipment are important parts of effective oil spill response strategies for San Francisco Bay. Marine facilities, which are used for exploring, drilling, producing, storing, handling, transferring, processing, refining or transporting oil and are located in or near marine waters, as defined in the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, are required to have oil spill contingency plans pursuant to that Act.

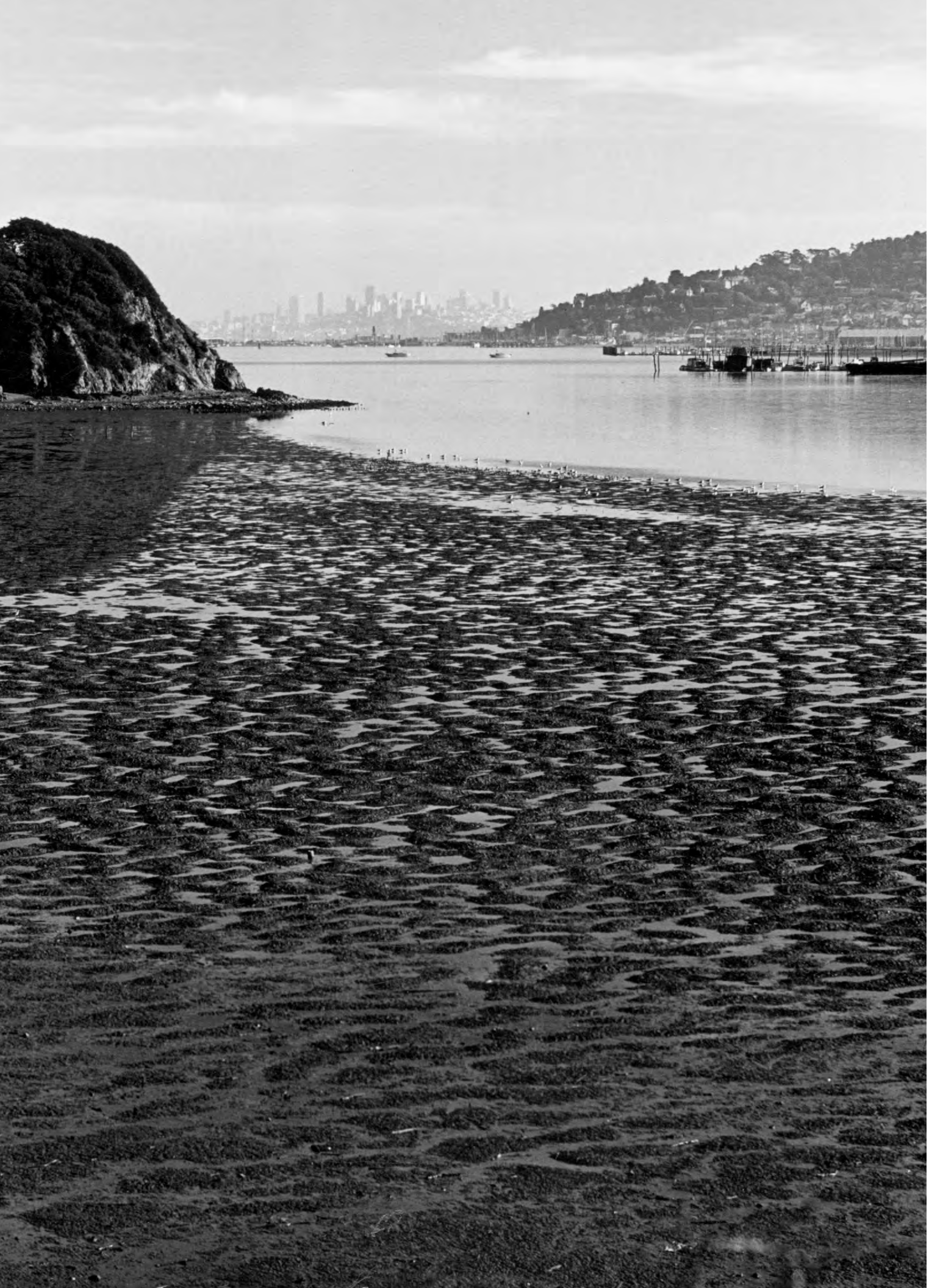
Policies

1. Physical obstructions to safe navigation, as identified by the U.S. Coast Guard and the Harbor Safety Committee of the San Francisco Bay Region, should be removed to the maximum extent feasible when their removal would contribute to navigational safety and would not create significant adverse environmental impacts. Removal of obstructions should ensure that any detriments arising from a significant alteration of Bay habitats are clearly outweighed by the public and environmental benefits of reducing the risk to human safety or the risk of spills of hazardous materials, such as oil.

2. The Commission should ensure that marine facility projects are in compliance with oil spill contingency plan requirements of the Office of Spill Prevention and Response, the U.S. Coast Guard and other appropriate organizations.

3. To ensure navigational safety and help prevent accidents that could spill hazardous materials, such as oil, the Commission should encourage major marine facility owners and operators, the U. S. Army Corps of Engineers and the National Oceanic and Atmospheric Administration to conduct frequent, up-to-date surveys of major shipping channels, turning basins and berths used by deep draft vessels and oil barges. Additionally, the frequent, up-to-date surveys should be quickly provided to the U.S. Coast Guard Vessel Traffic Service-San Francisco, masters and pilots.

Adopted July 2001



Part V
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. ***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.

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

Plan Map 1

San Pablo Bay

PLAN MAP NOTES

Park Proposal for Area South of Hamilton Field *- Large, undeveloped area between Hamilton Field and Gallinas Creek is possible site for major county park. Due to extensive offshore mudflats, would not be suitable for water-oriented recreation.*

Skaggs Island *- The U.S. Fish and Wildlife Service proposes to acquire closed U.S. Navy military facility to be included in the San Pablo Bay National Wildlife Refuge. The proposed addition to the wildlife refuge would be in accord with Bay Plan policies.*

Salt Ponds and Other Managed Wetlands *- Large area, high-value wildlife habitat.*

San Pablo Bay National Wildlife Refuge *- The addition and restoration of land with high aquatic life and wildlife habitat value or good habitat restoration potential to the San Pablo Bay National Wildlife Refuge would be in accord with Bay Plan Policies.*

San Pablo Bay Wildlife Refuges *- The California Department of Fish and Game and the U.S. Fish and Wildlife Service are carrying out a cooperative program to acquire, restore and manage areas of high aquatic life and wildlife habitat value in San Pablo Bay.*

Proposed Marin Baylands National Wildlife Refuge *- The U.S. Fish and Wildlife Service proposes to include tidal marsh, seasonal marsh and uplands in a national wildlife refuge located on the west side of San Pablo Bay from the Petaluma River to an area south of Gallinas Creek in Marin County. The proposed wildlife refuge would be in accord with Bay Plan policies.*

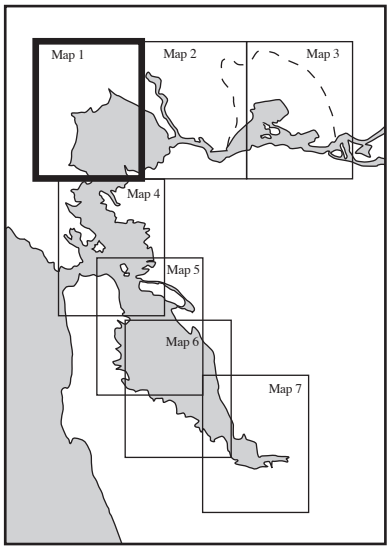
San Francisco Bay National Estuarine Research Reserve (China Camp State Park) *- One of two sites in the Bay, the other being Rush Ranch Open Space Preserve, with one additional site in the Delta, named Browns Island Regional Shoreline. These sites are part of a federal-state cooperative scientific research and education program that is part of a national system of estuarine research reserves. The Commission supports the program as a member of the Management Advisory Board.*

Areas diked from the Bay have high-value wildlife habitat and restoration potential.

Petaluma Marsh *- The largest remaining intact tidal marsh within the Bay. Features characteristic of historic tidal marshes found here include a system of extensive channels, pans (ponds) and natural transitions to adjacent upland habitats.*

Napa-Sonoma Marshes Wildlife Area (Napa River Unit) *- The California Coastal Conservancy, U.S. Army Corps of Engineers, and California Department of Fish and Game propose to restore nearly 10,000 acres of salt ponds and adjacent tidal habitats on the west side of the Napa River to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies.*

San Francisco Bay Area Water Trail *- Pursuant to state legislation, the Commission, in partnership with the State Coastal Conservancy, Association of Bay Area Governments and interested parties, is preparing a San Francisco Bay Area Water Trail plan. The Water Trail will provide a series of linked landing and launching sites around the Bay for human-powered boats and beachable sail craft, and provide for diverse, water-accessible overnight accommodations, including camping.*



Amended September 2006

Plan Map 1

Bay Plan Policies and Commission Suggestions

BAY PLAN POLICIES

1. **Rat Rock** - Preserve island; no development.
2. **China Camp State Park** - Preserve continuous shoreline recreational area, including beaches, windsurfing access, picnic areas, fishing piers, riding and hiking trails, camping, natural, historical and cultural resources and non-motorized small boat landing and launching. Provide wildlife-compatible recreational opportunities, including natural, historical and cultural interpretation and wildlife viewing.
3. Protect and provide public access to shellfish beds offshore.
4. **China Camp State Park, San Francisco Bay National Estuarine Research Reserve** - Continue federal-state scientific research and education program that is part of the national system of estuarine research reserves.
5. **McInnis County Park** - Preserve picnicking, trails and small boat launch. Protect nearby sensitive wildlife and habitats by educating boaters about potential for and effects of disturbance.
6. **Hamilton Field** - Develop comprehensive wetlands habitat plan and long-term management program for restoring and enhancing wetlands habitat in diked former tidal wetlands. Dredged materials should be used whenever feasible and environmentally acceptable to facilitate wetlands restoration.
7. Restore former antenna field to tidal marsh and subtidal habitat.
8. **Petaluma Marsh** - Marsh has high wildlife value; may be included in permanent wildlife area.
9. Provide public access to the Bay along levees if in a manner protective of sensitive wildlife.
10. **San Pablo Bay** - Tidal marshes and extensive tidal flats are valuable wildlife habitat. Protect wildlife values.
11. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
12. **Route 37** - Evaluate design options if and when travel demand warrants. Provide public access in a manner protective of sensitive wildlife. Provide opportunities for wildlife compatible activities, such as wildlife observation and fishing.
13. **Skaggs Island** - If and when not needed by Navy, restore wildlife habitat.
14. **Regional Restoration Goal for San Pablo Bay** - Restore large areas of tidal marsh and enhance seasonal wetlands. Some of the inactive salt ponds should be managed to maximize their habitat functions for shorebirds and waterfowl, and others should be restored to tidal marsh. Shallow subtidal areas (including eelgrass beds) should be conserved or restored. See the Baylands Ecosystem Habitat Goals report for more information.

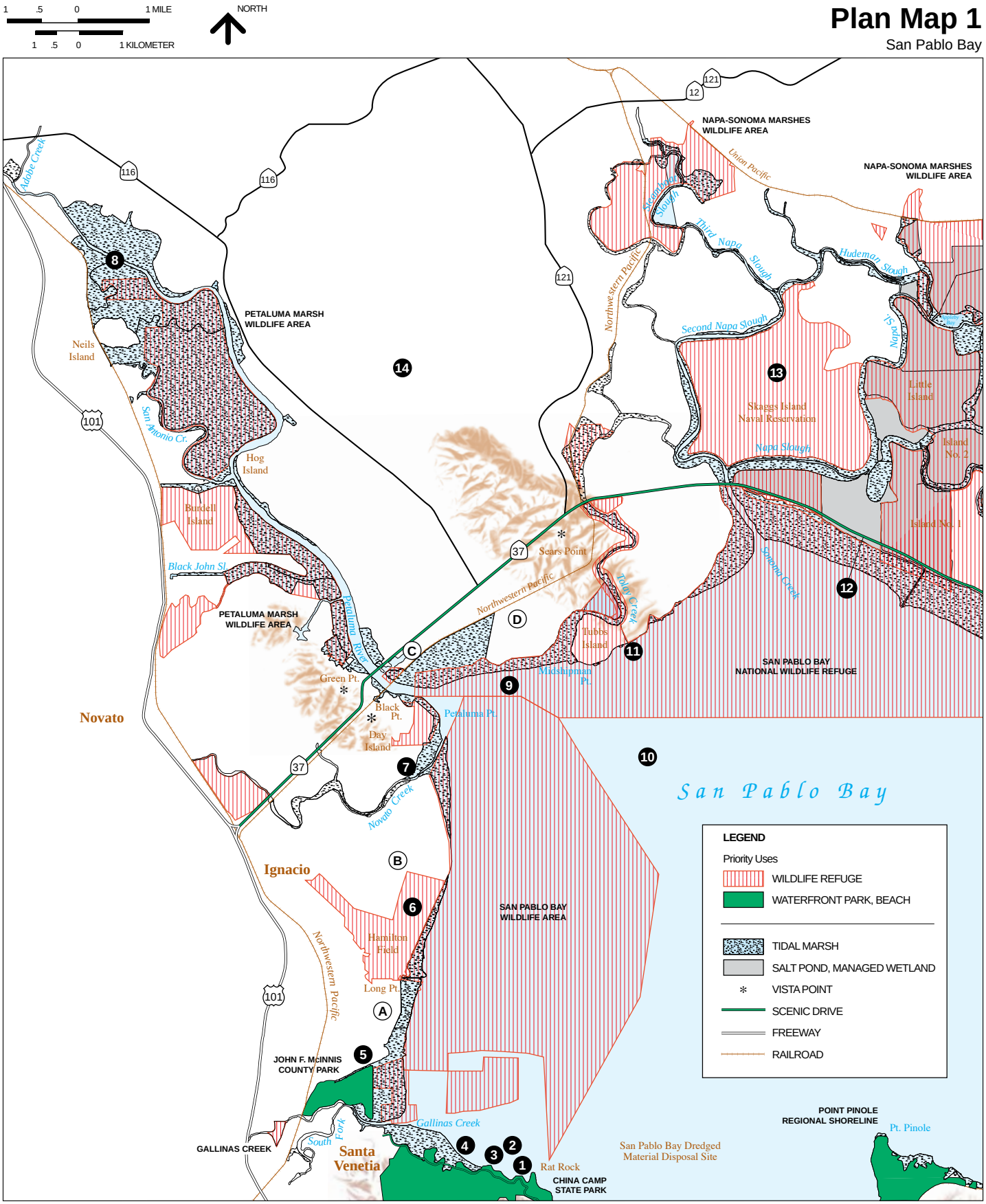
COMMISSION SUGGESTIONS

- (A) Possible major park.
- (B) Possible use of Bel Marin Keys Unit V site as a wetland restoration site using dredged material.
- (C) Possible use of Port Sonoma Marina ponds as a regional dredged material rehandling facility.
- (D) Possible use of North Point Property site as a wetland restoration site using dredged material.

Amended September 2006

Plan Map 1

San Pablo Bay



San Francisco Bay Conservation and Development Commission

Amended September 2006

San Francisco Bay Plan
Reprinted March 2025

Plan Map 2

Carquinez Strait

PLAN MAP NOTES

Salt Ponds and Other Managed Wetlands *- Large area, high-value wildlife habitat.*

San Pablo Bay National Wildlife Refuge *- The addition and restoration of land with high aquatic life and wildlife habitat value or good habitat restoration potential to the San Pablo Bay National Wildlife Refuge would be in accord with Bay Plan policies.*

San Pablo Bay Wildlife Refuges *- The California Department of Fish and Game and the U.S. Fish and Wildlife Service are carrying out a cooperative program to acquire, restore and manage areas of high aquatic life and wildlife habitat value in San Pablo Bay.*

Benicia State Recreation Area *- Proposed park expansion should encompass principal overlooks and ridges on north side of strait, to preserve rugged and scenic character of hills, presently undeveloped.*

West Benicia Waterfront *- Detailed planning is needed to determine most desirable waterfront design west of West Second Street, emphasizing "urban" recreation uses with a minimum of Bay filling (and housing on existing private land).*

Benicia Waterfront Special Area Plan *- Special Area Plan was adopted by the Commission (April, 1977) and the City of Benicia to provide detailed planning and regulatory guidelines for the Benicia shoreline between West Second Street and the Benicia-Martinez Bridge. Refer to maps, policies, and recommendations of the Special Area Plan for specific information for this area.*

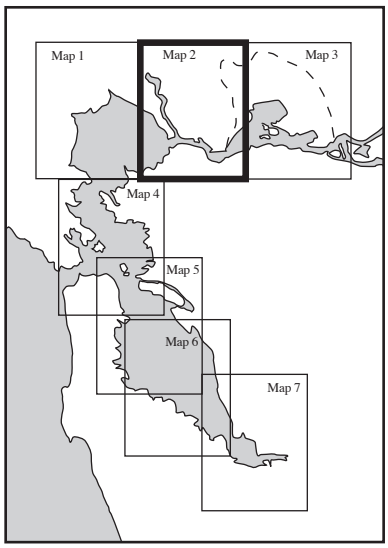
Scenic Area South Side of Carquinez Strait *- The scenic area includes principal overlook ridges and scenic road between Crockett and Martinez. To preserve presently undeveloped rugged and scenic hills, zoning should provide for extremely sparse development with control over tree removal and location of all structures; scenic easements should be acquired by East Bay Regional Park District, county, or other public body as necessary to guarantee permanent protection. Some park development may be appropriate in valleys leading to Bay.*

Areas diked from the Bay have high-value wildlife habitat and restoration potential.

Napa-Sonoma Marshes Wildlife Area (Napa River Unit) *- The California Coastal Conservancy, U.S. Army Corps of Engineers, and California Department of Fish and Game propose to restore nearly 10,000 acres of salt ponds and adjacent tidal habitats on the west side of the Napa River to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies.*

Napa Plant Site *- The California Department of Fish and Game proposes to restore approximately 1,400 acres of salt ponds added to the Fagan Marsh Ecological Reserve, on the east side of the Napa River to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies.*

San Francisco Bay Area Water Trail *- Pursuant to state legislation, the Commission, in partnership with the State Coastal Conservancy, Association of Bay Area Governments and interested parties, is preparing a San Francisco Bay Area Water Trail plan. The Water Trail will provide a series of linked landing and launching sites around the Bay for human-powered boats and beachable sail craft, and provide for diverse, water-accessible overnight accommodations, including camping.*



Amended September 2006

Plan Map 2

Bay Plan Policies and Commission Suggestions

BAY PLAN POLICIES

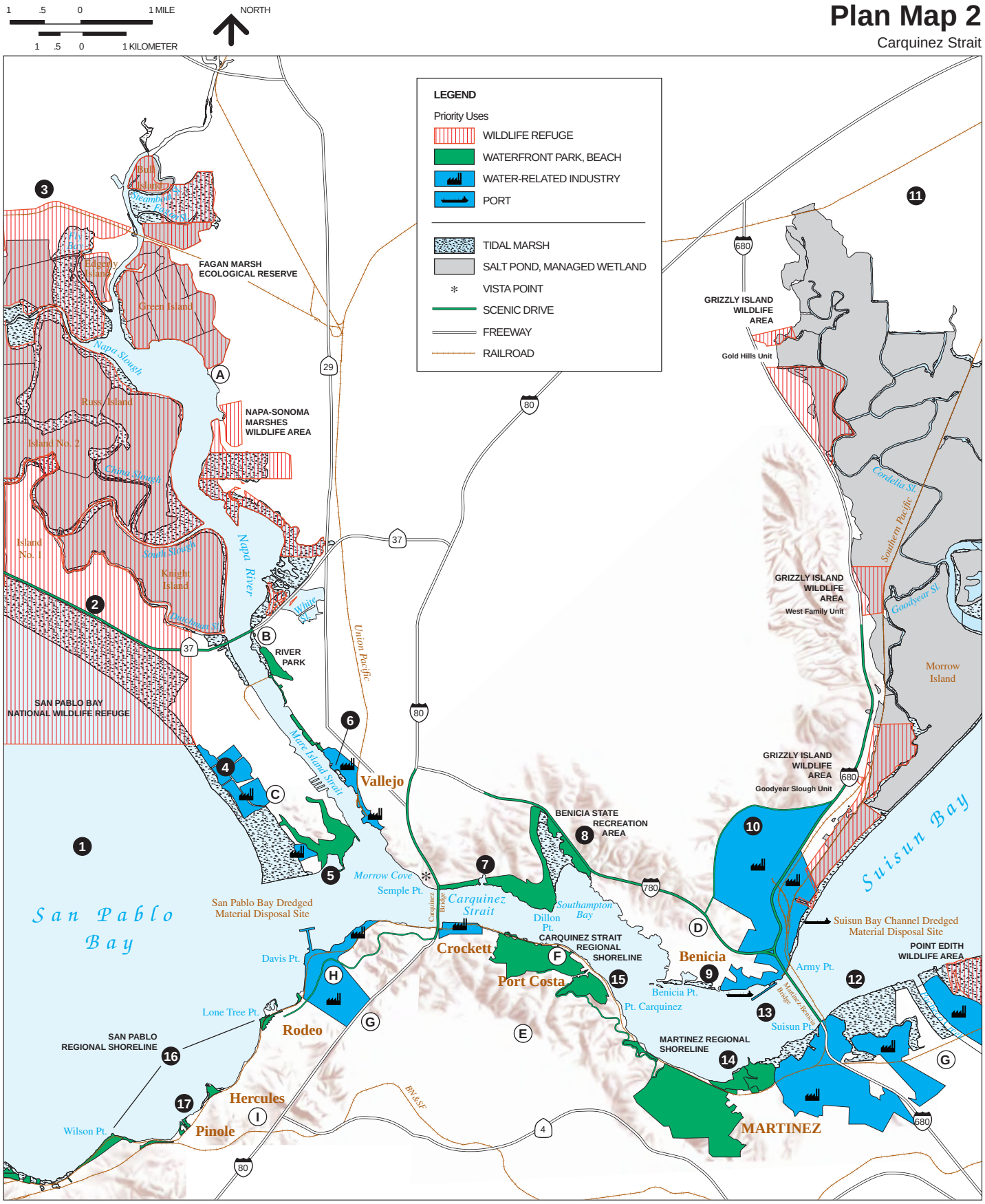
1. **San Pablo Bay** - Tidal marshes and extensive tidal flats are valuable wildlife habitat. Protect wildlife values.
2. **Route 37** - Evaluate design options if and when travel demand warrants. Provide public access in a manner protective of sensitive wildlife. Provide opportunities for wildlife compatible activities, such as wildlife observation and fishing.
3. **Regional Restoration Goal for San Pablo Bay** - Restore large areas of tidal marsh and enhance seasonal wetlands. Some of the inactive salt ponds should be managed to maximize their habitat functions for shorebirds and waterfowl, and others should be restored to tidal marsh. Shallow subtidal areas (including eelgrass beds) should be conserved or restored. See the Baylands Ecosystem Habitat Goals report for more information.
4. **Mare Island Naval Shipyard** - The Mare Island dredged material disposal ponds, which are located in historic baylands, should be retained in water-related industry priority use for dredged material disposal and used as a regional disposal and rehandling area for dredged material except the three northernmost ponds. The three northernmost ponds could be used to provide wetland habitat for the salt marsh harvest mouse in order to mitigate any potential adverse impacts resulting from the future use of the other seven ponds for dredged material disposal and rehandling. Restoration of the three northernmost ponds, if necessary for mitigation, should be managed by the U.S. Fish and Wildlife Service as part of the San Pablo Bay National Wildlife Refuge and the Service's program for environmental education.
5. **Mare Island** - Create waterfront park at south shore of Mare Island consistent with local base reuse plan and Chapter 588 of the Statutes of 2004.
6. **Vallejo Water-Related Industrial Area** - Some fill may be needed.
7. **Carquinez Strait - Vallejo Shoreline** - Continuous public access should be provided along the bluff top and where feasible the shoreline of Carquinez Strait and views of the water from shoreline vista points should be preserved.
8. **Benicia State Recreation Area** - No commercial uses except for convenience needs of park visitors. Develop multi-use trail along shoreline between Vallejo and Benicia. Provide non-motorized small boat launching facilities. Protect wetland habitats.
9. **Benicia Waterfront Special Area Plan** - See special area plan for detailed planning guidelines for the shoreline between West Second Street and the Benicia-Martinez Bridge. Preserve existing non-motorized small boat launches on City waterfront.
10. **Benicia Industrial Park** - Reserve area east of old Route 21 for waterfront industry. Preserve and provide access to vista points and historic buildings.
11. **Regional Restoration Goal for Suisun Bay** - Restore tidal marsh on the northern and southern sides of Suisun Bay, Grizzly Bay and Honker Bay; enhance managed marshes to increase their ability to support waterfowl. See the Baylands Ecosystem Habitat Goals report for more information.
12. Pipelines and piers may be built over marshes.
13. **Port of Benicia** - See Seaport Plan.
14. **Martinez Regional Shoreline and Martinez Waterfront Park** - Preserve mix of recreational uses for picnicking, wildlife viewing, wildlife habitat management and hiking in regional park and community facilities, including team sports in City park. Possible ferry terminal. Allow if compatible with park and marina use; serve with bus public transit to reduce traffic and parking needs. Complete Bay Trail and provide non-motorized small boat landing and launching.
15. **Carquinez Strait Regional Shoreline** - Preserve Eckley Fishing Pier, and panoramic views of Carquinez Strait from hiking trails, preserve and interpret cultural history of the site. Expand park where feasible. Complete Bay and Ridge Trails, maintain safe access across railroad tracks. Provide non-motorized small boat landing and launching. Provide signage regarding fish consumption advisories for anglers.
16. **San Pablo Bay Regional Shoreline Park, Lone Tree Point to Wilson Point** - Provide continuous shoreline access linking parks with safe pedestrian railroad crossings. Expand parks where feasible. Integrate with local parks in Hercules and Pinole. Protect wetland habitats and interpret historical and cultural resources. Link local and regional shoreline parks to Point Pinole Regional Shoreline Park. Complete Bay Trail and incorporate non-motorized small boat launching.
17. **Hercules Point Park and Pinole Bayfront Park** - Integrate with San Pablo Bay Regional Shoreline Park to provide continuous shoreline access. Provide safe pedestrian railroad crossings. Expand parks where feasible. Protect adjacent wetlands. Provide non-motorized small boat landing and launching. Possible ferry terminal near Hercules Point.

COMMISSION SUGGESTIONS

- (A) Napa Bay - Encourage recreational development of areas adjacent to shoreline. Provide continuous public access to shoreline.
- (B) Provide continuous public access to shoreline from Napa Bay to existing park. Protect views of strait from hills.
- (C) Potential park on hills overlooking the Bay.
- (D) Benicia - Prepare precise plan and development program for waterfront west of West Second Street. Structures near waterfront should be kept low and well-spaced to protect views from hills inland. Provide maximum possible public access, including paths, beaches and small parks.
- (E) Possible use of Praxis Pacheco as a dredged material confined disposal site.
- (F) Limit urban development; encourage cluster development to maximize Bay views and conserve natural landscape features.
- (G) Carquinez Strait, Bridge and Shoreline - Enhance scenic qualities, preserve views and increase public access.
- (H) Possible linked industry.
- (I) Possible use of Wickland Selby site as a regional dredged material rehandling facility.

Plan Map 2

Carquinez Strait



San Francisco Bay Conservation and Development Commission

Amended May 2024

San Francisco Bay Plan
Reprinted March 2025

Plan Map 3

Suisun Bay and Marsh

PLAN MAP NOTES

Suisun Marsh *- Thousands of acres of managed wetlands are maintained primarily by private duck-hunting clubs as migratory waterfowl habitat which also provides habitat for other wildlife species such as shorebirds. Areas are diked, but dikes are opened for periodic flooding. Suisun Resource Conservation District assists duck clubs in the protection and enhancement of managed wetlands.*

Suisun Marsh Protection Plan *- The Protection Plan is a more specific application of the policies of the Bay Plan because of the unique characteristics of the Suisun Marsh. The policies of both the Bay Plan and the Protection Plan apply within the Marsh in the absence of a certified Suisun Marsh Local Protection Program component. In event of policy conflict between the Bay Plan and Protection Plan, the policies of the Protection Plan control. Refer to maps and policies of the Protection Plan and the Suisun Marsh Preservation Act of 1977 for more specific information.*

Suisun Marsh Local Protection Program *- Pursuant to the Suisun Marsh Preservation Act of 1977, the Commission has certified the Local Protection Program components of Solano County, Solano County Local Agency Formation Commission, the cities of Fairfield and Suisun City, Suisun Resource Conservation District, and Solano County Mosquito Abatement District. Marsh development permits for development in the Suisun Marsh must be consistent with the Local Protection Program component of the local agency with jurisdiction over the project. See the Preservation Act and the components of the Local Protection Program for more information.*

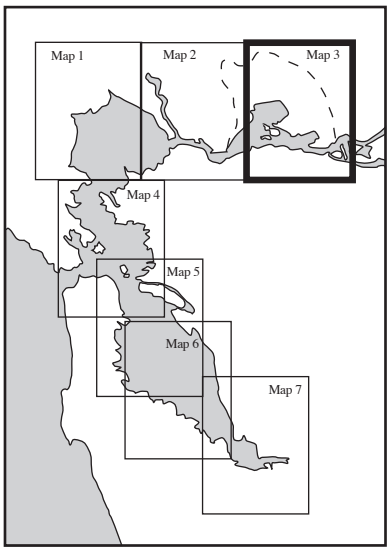
Collinsville Area *- The Collinsville-Montezuma Slough area is adjacent to the deep water shipping channel, has rail facilities nearby, and consists of flat land. The shoreline fronting on the main shipping channel is limited, however, and this relatively small frontage should be carefully planned and shared for maximum industrial development.*

Recreational Potential *- Extensive, valuable recreational potential in river and island areas (e.g. Sherman Island—"Sherman Lake" area popular for boating, fishing). Recreational use should be encouraged.*

Concord Naval Weapons Station *- Plan maps indicate recommended use for bayfront military installations if one or more of these bases is ever declared surplus by the military. The Bay Plan does not advocate the closing of any military installation.*

San Francisco Bay National Estuarine Research Reserve (Rush Ranch Open Space Preserve) *- One of two sites in the Bay, the other being China Camp State Park, with one additional site in the Delta, named Browns Island Regional Shoreline. These sites are part of a federal-state cooperative scientific research and education program that is part of a national system of estuarine research reserves. The Commission supports the program as a member of the Management Advisory Board.*

San Francisco Bay Area Water Trail *- Pursuant to state legislation, the Commission, in partnership with the State Coastal Conservancy, Association of Bay Area Governments and interested parties, is preparing a San Francisco Bay Area Water Trail plan. The Water Trail will provide a series of linked landing and launching sites around the Bay for human-powered boats and beachable sail craft, and provide for diverse, water-accessible overnight accommodations, including camping.*



Amended September 2011

Plan Map 3

Bay Plan Policies and Commission Suggestions

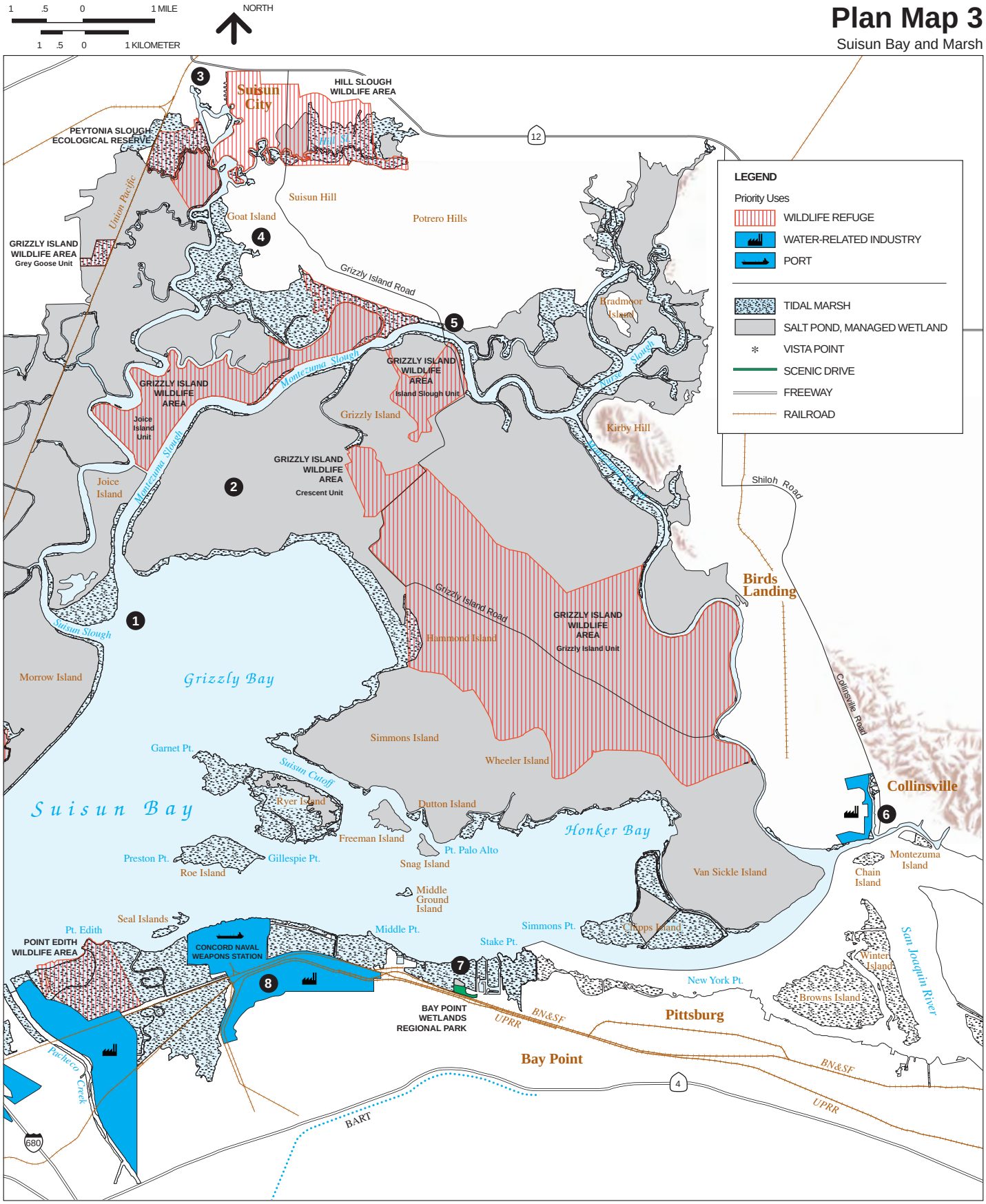
BAY PLAN POLICIES

1. **Montezuma and Suisun Sloughs** - May be dredged for small boat uses.
2. **Regional Restoration Goal for Suisun Bay** - Restore tidal marsh on the northern and southern sides of Suisun Bay, Grizzly Bay and Honker Bay; enhance managed marshes to increase their ability to support waterfowl. See the Baylands Ecosystem Habitat Goals report for more information.
3. **Suisun City** - Preserve boat launch ramp, transient tie-up and small boat launch.
4. **Rush Ranch Open Space Preserve, San Francisco Bay National Estuarine Research Reserve** - Continue federal-state cooperative scientific research and education program that is part of a national system of estuarine research reserves. Provide wildlife compatible recreation opportunities, including natural, historical and cultural interpretation and education, hiking, wildlife viewing, and picnicking.
5. **Beldon's Landing** - Preserve boat launch and park, including access for non-motorized small boats. Provide signage regarding fish consumption advisories for anglers.
6. **Collinsville** - Industries should share limited deep water frontage. Wetland restoration or enhancement of diked wetland areas may occur provided that the restoration or enhancement project: (1) is carried out in a manner that will not preclude use of the deep water frontage and upland portion of the site for water-related industry use; (2) will not result in any adverse environmental impacts on the Suisun Marsh; (3) provides for the protection of adjacent property from flooding that could be caused by the project; and (4) includes a long-range management program that assures the proper stewardship of the wetland. Wetland restoration and enhancement projects may be carried out using dredged material from the Bay region. Wetland restoration and enhancement projects should be designed so as not to restrict development and operation of marine terminals on the deep water shoreline nor impede the movement of waterborne cargo, materials and products from the shoreline terminal to the upland portion of the site. A portion of the site may be used as a regional dredged material rehandling facility for Bay Area projects.
7. **Bay Point Wetlands** - Restore tidal wetlands and provide opportunities for shoreline trail access, wildlife observation, and non-motorized small boat access.
8. **Concord Naval Weapons Station** - When no longer owned or controlled by the federal government, give first consideration to water-related industrial use. Industrial use should be restricted so that they do not adversely affect marshes. If not needed for water-related industry use, consider waterfront park use.

COMMISSION SUGGESTIONS

Plan Map 3

Suisun Bay and Marsh



San Francisco Bay Conservation and Development Commission

Amended March 2020

Plan Map 4

Central Bay North

PLAN MAP NOTES

Point Pinole Regional Shoreline to Wildcat Creek *- Public access to the Bay for recreation is needed in this area, although existing shoreline conditions make this difficult. All development in this area should include provision for substantial public access. Additional land to expand Point Pinole Regional Park should be acquired if feasible.*

San Pablo Peninsula *- Significant potential for creating a permanently protected open space and park facility. Limited commercial development can be compatible with park.*

Miller/Knox Regional Shoreline *- Use and landscaping of the private lands adjacent to the park should be coordinated by owners and city for compatibility with park.*

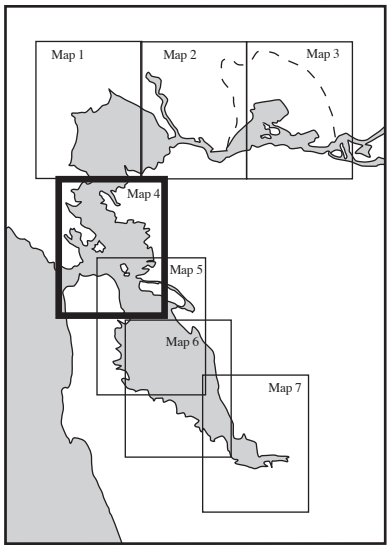
South Richmond Shoreline Special Area Plan *- The South Richmond Shoreline Special Area Plan was adopted by the Commission (May 1977) and the City of Richmond to provide detailed planning and regulatory guidelines for the Richmond shoreline from the west side of Shipyard Three to the southeastern border of the City, including Brooks and Bird Islands and all areas that are subject to tidal action. Refer to the maps, policies, and recommendations of the Special Area Plan for specific information for this area.*

Oakland North Harbor Area *- The Oakland North Harbor has not been included on the Seaport Plan maps as a port priority use area because a need for it has not been substantiated and it has been found to be less desirable for port development than other sites based on environmental, land use, and access considerations. In addition, other uses having public benefits, such as conservation and recreation, have been proposed for this site. Additional studies will be necessary to determine the future use of this area..*

San Francisco Waterfront Special Area Plan *- The San Francisco Waterfront Special Area Plan was adopted by the Commission (April 3, 1975) to provide detailed planning and regulatory guidelines for the waterfront of San Francisco from east side of Hyde Street Pier to south side of India Basin. Refer to the maps and policies of the Special Area Plan for specific information for this area.*

San Francisco Waterfront *- A scenic transit system that incorporates pedestrian and bicycle pathways could be a major waterfront attraction and could eventually operate from Golden Gate Bridge (or even Ocean Beach) to Ferry Building (or south to China Basin).*

Treasure and Yerba Buena Islands *- The City and County of San Francisco is considering revisions to its plan for the redevelopment and reuse of Naval Station Treasure Island that would create a series of linked open spaces on Treasure and Yerba Buena Islands, including a large open space at the northern end of the island.*



Jurisdiction Note *- Along the shoreline in San Francisco and Marin Counties, the Commission's jurisdiction extends 100 feet inland and does not include any area within the jurisdiction of the California Coastal Commission west of the line between Point Bonita and Point Lobos.*

Appearance and Design *- Housing density in hills of Sausalito, Tiburon, and Belvedere should respect the topography; cluster development appropriate in some areas.*

Sausalito - Commuter Ferry Terminal *- To minimize traffic and parking problem, should be served by mass transit or else designed to serve Sausalito and Mill Valley only with other terminals serving rest of Marin.*

Amended September 2006

Plan Map 4

Central Bay North

PLAN MAP NOTES (CONT.)

Tiburon - Ferry Terminals *- To minimize traffic and parking problems, terminals should be served by mass transit.*

Golden Gate National Recreation Area *- A complex of parklands, including Forts Baker, Barry, Point, Mason, and Miley, The Presidio of San Francisco, Lands End and Alcatraz Island within San Francisco Bay managed by the Golden Gate National Recreation Area and the Presidio Trust for recreational and other purposes consistent with National Park Service and Presidio Trust management policies. The Golden Gate National Recreation Area is the largest urban national park in the world. The total park area is 76,500 acres of land and water with approximately 28 miles of coastline. Within its boundaries are ocean and Bay beaches, dramatic headlands, redwood forests, lagoons, and historic military properties.*

Alcatraz Island *- Protect the integrity and resources of the Alcatraz Historic District. Access by boat only. Protect wildlife values. Preserve and interpret military, natural and cultural history of the island.*

Fort Baker *- Protect the integrity and resources of the Fort Baker National Register Historic District. Protect and preserve the coastal habitats, which support Bay-related endangered species, such as the California Brown Pelican, Mission Blue Butterfly and the Least Tern. Preserve offshore eelgrass beds and protect herring spawning zone. Encourage public environmental education facilities and programs. Encourage water-oriented recreation, including mooring facilities for transient recreational boats and small watercraft such as kayaks and sailboards. If the Coast Guard leaves Fort Baker, the buildings and land should be redeveloped for water-oriented recreation and public use.*

Marin Headlands *- Preserve and protect rugged character, especially on Golden Gate and Pacific Coast sides. Limit access to water (at coves) to foot trails.*

Fort Mason *- Continue to manage as National Park, consistent with its status as a National Historic Landmark. Maintain compatible use of buildings and provide continuous shoreline access.*

The Presidio of San Francisco - Golden Gate National Recreation Area *- Develop and manage the area within the jurisdiction of the National Park Service for open space and water-oriented recreation as described in the National Park Service's general management plan. Protect Crissy Field marsh and evaluate the need for expansion and improvement of the marsh. If scientific studies indicate that the marsh should be expanded to improve its functions and habitat values within the jurisdiction of the National Park Service, the Crissy Field marsh expansion should be balanced with the protection of cultural resources and recreation uses. Preserve the existing beach for water-oriented recreation.*

The Presidio of San Francisco - Golden Gate National Recreation Area *- Develop the area of The Presidio of San Francisco within the jurisdiction of the Presidio Trust (Area B) as called for in the Trust's general management plan. If scientific studies indicate that Crissy Field marsh should be expanded to improve its functions and habitat values within the jurisdiction of the Presidio Trust, the marsh expansion should be balanced with the protection of cultural resources and recreation uses. Any alterations to Doyle Drive should preserve recreation opportunities within the waterfront park priority use area and preserve existing natural and cultural values or their restoration potential.*

Fort Miley, Fort Point and Lands End *- Preserve the Coastal and Bay Trail segments, protect dramatic vistas of the Golden Gate and allow appropriate visitor serving commercial uses. Preserve and interpret historic military structures.*

Amended September 2006

PLAN MAP NOTES (CONT.)

Shoreline Parks *- Shoreline parks could be built in several areas between existing or proposed shoreline roads and the shore from Tiburon Peninsula to Point San Pedro. Further study needed.*

San Quentin State Penitentiary - Possible Commuter Ferry Terminal *- If and when not needed by the State of California for a prison facility, a portion of the site should be considered for a commuter ferry terminal.*

Proposed Marin Baylands National Wildlife Refuge *- The U.S. Fish and Wildlife Service proposes to include tidal marsh, seasonal marsh and uplands in a national wildlife refuge located on San Francisco Bay from the City of San Rafael to an area south of the city of Mill Valley in Marin County. The proposed wildlife refuge would be in accord with Bay Plan policies.*

San Francisco Bay National Estuarine Research Reserve (China Camp State Park) *- One of two sites in the Bay, the other being Rush Ranch Open Space Preserve, with one additional site in the Delta, named Browns Island Regional Shoreline. These sites are part of a federal-state cooperative scientific research and education program that is part of a national system of estuarine research reserves. The Commission supports the program as a member of the Management Advisory Board.*

Proposed Alameda National Wildlife Refuge *- The U.S. Fish and Wildlife Service proposes to include tidal marsh and a portion of the former Naval Air Station Alameda in a national wildlife refuge located at the western end of Alameda. The proposed national wildlife refuge would be in accord with Bay Plan policies.*

Yerba Buena Island *- If public trust ownership rights are exchanged between lands on Treasure Island and Yerba Buena Island, the lands thereby encumbered by the trust on Yerba Buena Island will have been found by the State Lands Commission to be useful for public trust purposes. In addition, substantial water-oriented recreation benefits, should be provided.*

San Francisco Bay Area Water Trail *- Pursuant to state legislation, the Commission, in partnership with the State Coastal Conservancy, Association of Bay Area Governments and interested parties, is preparing a San Francisco Bay Area Water Trail plan. The Water Trail will provide a series of linked landing and launching sites around the Bay for human-powered boats and beachable sail craft, and provide for diverse, water-accessible overnight accommodations, including camping.*

Amended September 2006

Plan Map 4

Bay Plan Policies and Commission Suggestions

BAY PLAN POLICIES

1. **Wilson Point Beach and Park** - Preserve rugged character of point. Provide safe, easy pedestrian access. Some fill may be needed. Protect and provide public access to shellfish areas.
2. **Point Pinole Regional Shoreline -** Preserve regional park, trails, fishing pier, picnic facilities, transit access, active play areas, historical and cultural resources and wetlands. Provide wildlife-compatible recreation. Potential water trail campsite. Preserve and interpret natural features and cultural and historic resources. Allow improvement of Goodrick Avenue that is compatible with recreation and conservation for access to inland development.
3. **West Contra Costa Sanitary Landfill** - Proposed Park. Give consideration to beach development. Some fill may be needed. Preserve wildlife and habitat values. Complete Bay Trail.
4. **Point San Pablo Peninsula** - Create a regional open space and park facility. Limited commercial development at Point Molate should be compatible with proposed regional park.
5. **The Brothers** - Preserve islands and lighthouse. Access by boat only.
6. **Point San Pablo Yacht Harbor to Point Richmond** - Develop the Bay Trail as a multi-use trail.
7. **Former Naval Fuel Depot Point Molate** - Develop for park use. Landward of Western Drive should be developed consistent with recreation policy 4-b. Provide trail system linking shoreline park areas and vista points in hillside open space areas. Provide public access to historical district with interpretation of this resource. The Point Molate Pier should be re-used for water-oriented recreation and incidental commercial recreation. Encourage water-oriented recreation, including mooring facilities for transient recreational boats, excursion craft and small water craft. Protect existing eelgrass beds.
8. **Castro Rocks** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young.
9. **Red Rock** - Protect wildlife values.
10. **Miller/Knox Regional Shoreline** - Preserve vistas, picnic areas, trails, wildlife values, Ferry Point Pier and Keller Beach. Protect and provide public access to shellfish beds offshore. Provide signage regarding fish consumption advisories for anglers.
11. **Port of Richmond** - See Seaport Plan. Some fill may be needed.
12. **South Richmond Shoreline Special Area Plan** - See special area plan for detailed planning guidelines for the shoreline between Shipyard Three and the southeastern border of the City of Richmond.
13. **Brooks Island Regional Preserve** - Preserve island character. Access by boat only. Protect wildlife values.
14. Protect and provide public access to shellfish areas offshore.
15. **Berkeley Waterfront - Cesar Chavez Park** - Preserve marina, beach, small boat launch, windsurfing access, fishing pier, interpretive center and multi-use trails. Possible ferry terminal. Allow if compatible with park and marina use; serve with bus public transit to reduce traffic and parking needs. Provide signage regarding fish consumption advisories for anglers.
16. **Eastshore State Park** - Develop park from Bay Bridge to Marina Bay in Richmond for multiple uses, including recreation, wildlife and aquatic life protection. Protect wildlife and aquatic life values at sites such as Emeryville Crescent, Hoffman Marsh and Albany Mudflats. Provide signage regarding fish consumption advisories for anglers.
17. No roadway in Bay west of present shoreline.
18. **Gateway Shoreline Park** - Develop gateway park at Bay Bridge touchdown with gracious access to the Bay Bridge. Incorporate viewing, picnicking, non-motorized small boat launching and interpretation of current and historic transportation infrastructure and natural and cultural factors. Protect eelgrass beds and nearby endangered species habitats. Provide signage regarding fish consumption advisories for anglers.
19. **Oakland Port Area** - See Seaport Plan. Redevelop Outer, Middle, and Inner Harbors for modern marine terminals. Some fill may be needed. No fill that would impair ship navigation should be allowed in any area needed for such navigation.
20. **Middle Harbor Shoreline Park** - Preserve industrial character of park. Preserve fishing access, picnic facilities, beach, historic features and community gathering and entertainment venues. Provide interpretation of port operations, historic and cultural factors. Provide non-motorized small boat access. Protect eelgrass beds. Provide health and safety information to anglers. Preserve vistas. Provide signage regarding fish consumption advisories for anglers.
21. **Middle Harbor Enhancement Area** – Provide the habitat and public access benefits at the U.S. Army Corps of Engineers' (USACE) and the Port of Oakland's Middle Harbor Enhancement Area (MHEA) project as described in the performance criteria of the USACE's MHEA Construction Period and Long-Term Monitoring, Maintenance, and Adaptive Management Program.
22. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
23. **Treasure Island** - When no longer owned or controlled by the federal government, redevelop for public use. Provide continuous public access to Bay in a manner protective of sensitive wildlife. Provide parking and water access for users of non-motorized small boats, including at north end of the Island. Develop a system of linked open spaces, including a large open space at the northern end of the island.

Amended October 2019

BAY PLAN POLICIES (cont.)

24 **Yerba Buena Island - South of Bay Bridge** - When no longer owned or controlled by the federal government, redevelop for recreational use. Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.

25 **Yerba Buena and Treasure Islands - Clipper Cove** - Expand marina and other water-oriented recreation uses, provide water access for small water craft, such as kayaks, and for swimming. Preserve beaches and eelgrass beds.

26 **Yerba Buena Island - North of Bay Bridge** - Provide: (1) a large public open space at the center of Yerba Buena Island; (2) a large public open space on the plateau on the eastern peninsula, adjacent to and beneath the eastern span of the San Francisco-Oakland Bay Bridge; and (3) a linked system of trails near the shoreline and at the upper elevations that connect vista points and open spaces. Vista points should provide views of the Bay Bridge, San Francisco Skyline and other important Central Bay features. The remainder of the island upland of the shoreline band may be developed for other uses consistent with Bay Plan recreation policy 4-b, and with the applicable public trust provisions and statutes.

27 **San Francisco Waterfront Special Area Plan** - See special area plan for detailed planning guidelines for the shoreline between the east side of the Hyde Street Pier and the south side of India Basin.

28 **Fisherman's Wharf** - Improve and expand commercial fishing support facilities. Enhance public access to and economic value of Fisherman's Wharf area by encouraging development of a public fish market.

29 **Golden Gate Bridge** - Encourage improved public transportation. No second deck or new crossing for automobiles.

30 **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.

31 **Richardson Bay Special Area Plan** - See Special Area Plan for detailed planning policies for the water area and shoreline north of a line drawn betweeen Cavallo Point and Point Tiburon.

32 **Angel Island State Park** - Use only for camping, picnicking, water-oriented recreation. Access by boat only. Preserve boat slips and mooring buoys at Ayala Cove. No commercial uses except for convenience needs of park visitors. Preserve and interpret cultural, historical and natural features of the island. Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.

33 **Romberg Tiburon Center for Environmental Studies** - If and when not needed by San Francisco State University, acquire and develop for park. Expansion of Romberg Tiburon Center should be compatible with park use. Romberg Tiburon Center lands outside of the shoreline band should be developed consistent with recreation policy 4-b. Provide public access through the site to the shoreline.

34 Protect and provide public access to shellfish areas offshore.

35 **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.

36 **Point San Quentin to Point San Pedro** - In connection with shoreline parks and scenic drives, develop system of riding and hiking trails.

37 **Marin Islands National Wildlife Refuge and State Ecological Reserve** - Protect wildlife values. Onshore development should be compatible with wildlife dependent uses. Avoid significant adverse impacts on wildlife, including the regionally significant black-crowned night heron rookery where herons nest and raise their young.

38 **The Sisters** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.

39 **Rat Rock** - Preserve island; no development. Protect wildlife values.

40 **China Camp State Park** - Preserve continuous shoreline recreational area, including beaches, windsurfing access, picnic areas, fishing piers, riding and hiking trails, camping, natural, historical and cultural resources and non-motorized small boat landing and launching. Provide wildlife-compatible recreational opportunities, including natural, historical and cultural interpretation and wildlife viewing.

41 **China Camp State Park, San Francisco Bay National Estuarine Research Reserve** - Continue federal-state scientific research and education program, part of the national system of estuarine research reserves.

42 Protect and provide public access to shellfish beds offshore.

43 **Regional Restoration Goal for Central Bay** - Protect and restore tidal marsh, seasonal wetlands, beaches, dunes and islands. Natural salt ponds should be restored on the East Bay shoreline. Shallow subtidal areas (including eelgrass beds) should be conserved and enhanced. Wherever possible tidal marsh habitats should be restored, particularly at the mouths of streams where they enter the Bay and at the upper reach of dead-end sloughs. Encourage tidal marsh restoration in urban areas. See the Baylands Ecosystem Habitat Goals report for more information.

Plan Map 4

Bay Plan Policies and Commission Suggestions

COMMISSION SUGGESTIONS

(A) Possible scenic transit system along waterfront from Ocean Beach to China Basin.

(B) If and when not needed by the State of California for a prison facility, a portion of the site should be considered for a possible commuter ferry terminal.

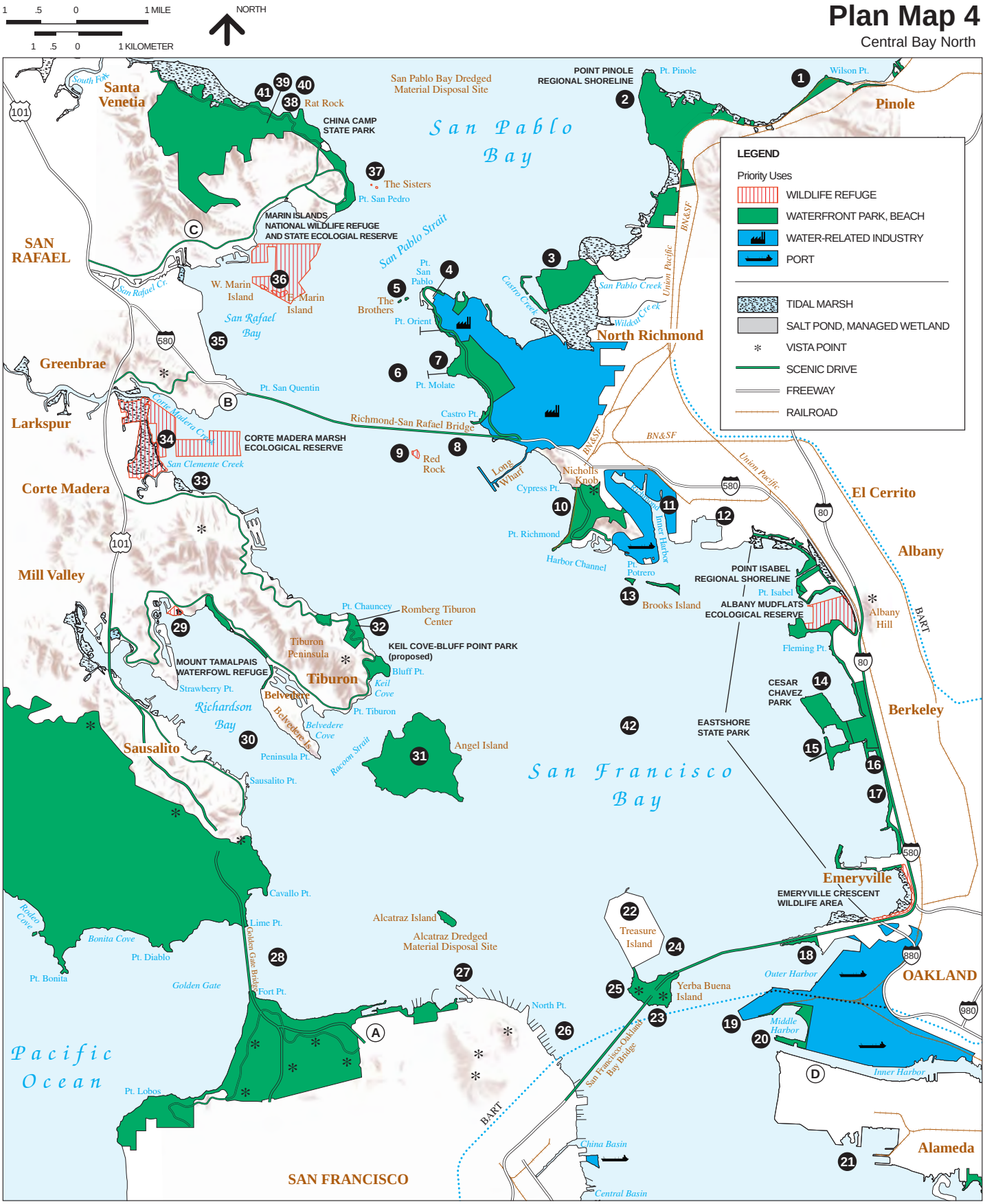
(C) San Pedro Mountain - Develop vista points along ridge.

(D) Possible reuse of dredged material at former NAS Alameda.

Amended September 2006

Plan Map 4

Central Bay North



San Francisco Bay Conservation and Development Commission

Amended May 2024

San Francisco Bay Plan
Reprinted March 2025

Plan Map 5

Central Bay

PLAN MAP NOTES

Oakland North Harbor Area *- The Oakland North Harbor has not been included on the Seaport Plan maps as a port priority use area because need for it has not been substantiated and it has been found to be less desirable for port development than other sites based on environmental, land use, and access considerations. In addition, other uses having public benefits, such as conservation and recreation, have been proposed for this site. Additional studies will be necessary to determine the future use of this area.*

Martin Luther King, Jr. Regional Shoreline Park *- Regional Shoreline developed by East Bay Regional Park District—emphasizing ecology and increased recreation use of the shoreline.*

Bay Farm Island *- The site is adjacent to Oakland Airport, and may be suitable for airport-oriented industry. Bay Farm Island development should not interfere with aircraft operations at Oakland Airport.*

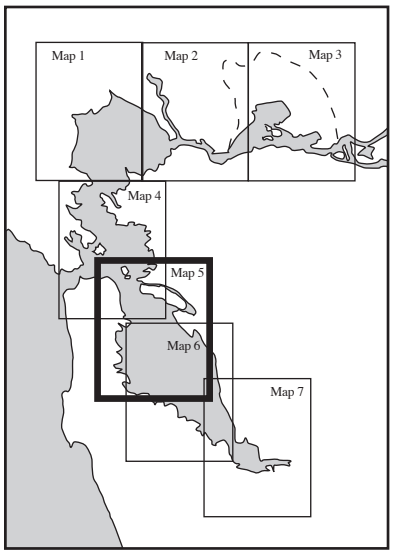
San Mateo (City) Waterfront *- Presently undeveloped. Detailed planning needed to determine most desirable waterfront design emphasizing recreation with minimum of Bay filling.*

Burlingame Waterfront *- Developing waterfront requires detailed planning to determine the most desirable waterfront design emphasizing recreation and public access with a minimum of Bay filling.*

Candlestick Point State Park and Hunters Point Naval Shipyard *- The California State Parks Department and City and County of San Francisco are cooperatively developing plans for Candlestick Point State Park improvements along the north shore of Candlestick Point and the Yosemite Slough Area. The City and County of San Francisco is planning to develop a large community park along the south shore of Hunters Point Naval Shipyard that would connect with Candlestick Point State Park, coordinated with the redevelopment of the Candlestick stadium area and the Hunters Point Naval Ship Yard.*

San Francisco Waterfront *- A scenic transit system that incorporates pedestrian and bicycle pathways could be a major waterfront attraction and could eventually operate from Golden Gate Bridge (or even Ocean Beach) to Ferry Building (or south to China Basin).*

San Francisco Waterfront Special Area Plan *- The San Francisco Waterfront Special Area Plan was adopted by the Commission (April 3, 1975) to provide detailed planning and regulatory guidelines for the waterfront of San Francisco from east side of Hyde Street Pier to south side of India Basin. Refer to the maps and policies of the Special Area Plan for specific information for this area.*



Proposed Alameda National Wildlife Refuge *- The U.S. Fish and Wildlife Service proposes to include tidal marsh and a portion of the former Naval Air Station Alameda in a national wildlife refuge located at the western end of Alameda. The proposed national wildlife refuge would be in accord with Bay Plan policies.*

Treasure and Yerba Buena Islands *- The City and County of San Francisco is considering revisions to its plan for the redevelopment and reuse of Naval Station Treasure Island that would create a series of linked open spaces on Treasure and Yerba Buena Islands, including a large open space at the northern end of the island.*

Yerba Buena Island *- If public trust ownership rights are exchanged between lands on Treasure Island and Yerba Buena Island, the lands thereby encumbered by the trust on Yerba Buena Island will have been found by the State Lands Commission to be useful for public trust purposes. In addition, substantial water-oriented recreations benefits, should be provided.*

Amended September 2006

Plan Map 5

Central Bay

PLAN MAP NOTES (CONT.)

Golden Gate National Recreation Area *- A complex of parklands, including Forts Baker, Barry, Point, Mason, and Miley, The Presidio of San Francisco, Lands End and Alcatraz Island within San Francisco Bay managed by the Golden Gate National Recreation Area and the Presidio Trust for recreational and other purposes consistent with National Park Service and Presidio Trust management policies. The Golden Gate National Recreation Area is the largest urban national park in the world. The total park area is 76,500 acres of land and water with approximately 28 miles of coastline. Within its boundaries are ocean and Bay beaches, dramatic headlands, redwood forest, lagoons, and historic military properties.*

> ***Alcatraz Island*** *- Protect the integrity and resources of the Alcatraz Historic District. Access by boat only. Protect wildlife values. Preserve and interpret military, natural and cultural history of the island.*
>
> ***Fort Mason*** *- Continue to manage as National Park, consistent with its status as a National Historic Landmark. Maintain compatible use of buildings and provide continuous shoreline access.*

San Francisco Bay Area Water Trail *- Pursuant to state legislation, the Commission, in partnership with the State Coastal Conservancy, Association of Bay Area Governments and interested parties, is preparing a San Francisco Bay Area Water Trail plan. The Water Trail will provide a series of linked landing and launching sites around the Bay for human-powered boats and beachable sail craft, and provide for diverse water-accessible overnight accommodations, including camping.*

Amended September 2006

Plan Map 5

Bay Plan Policies and Commission Suggestions

BAY PLAN POLICIES

1. **Gateway Shoreline Park** - Develop gateway park at Bay Bridge touchdown with gracious pedestrian and bicycle access to the Bay Bridge. Incorporate viewing, picnicking, non-motorized small boat launching and interpretation of current and historic transportation infrastructure and natural and cultural factors. Protect eelgrass beds and nearby endangered species habitats.
2. **Oakland Port Area** - See Seaport Plan. Redevelop Outer, Middle, and Inner Harbors for modern marine terminals. Some fill may be needed. No fill that would impair ship navigation should be allowed in any area needed for such navigation.
3. **Middle Harbor Shoreline Park** - Preserve industrial character of park. Preserve fishing access, picnic facilities, beach, historic features and community gathering and entertainment venues. Provide interpretation of port operations, historic and cultural factors. Provide non-motorized small boat access. Protect eelgrass beds. Provide signage regarding fish consumption advisories for anglers.
4. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
5. **Coast Guard Island** - If and when not needed by the Coast Guard and the island is transferred out of federal ownership or control, Coast Guard Island upland of shoreline band should be developed consistent with recreation policy 4-b. Provide continuous shoreline public access and public and commercial recreation uses.
6. **Robert W. Crown Memorial State Beach and Elsie Roemer Bird Sanctuary** - Preserve Elsie Roemer Bird Sanctuary public access and endangered species there. Preserve Crab Cove Visitors Center, swimming and non-motorized small boat access, accessible tide ramp and hiking and biking trails. Some fill may be needed for beach and marina protection.
7. Protect and provide public access to shellfish areas offshore.
8. **San Leandro Bay** - Valuable wildlife habitat; great recreation potential. Develop boating facilities and parks, but preserve wildlife habitat. Provide continuous public access to northeastern and southern shoreline. Some fill may be needed.
9. **Martin Luther King, Jr. Regional Shoreline Park** - Provide diverse wildlife compatible recreation opportunities, including picnicking, wildlife viewing, environmental education, boating, bicycling, and hiking. Preserve habitat areas and protect wildlife, including endangered species. Improve connections between park and inland neighborhoods.
10. **Oakland Airport** - Further expansion into the Bay only if clear need is shown by regional airport system study. Keep runway approach and takeoff areas clear of tall structures and incompatible uses. Complete Bay Trail along inland route.
11. **Oyster Bay Regional Shoreline** - Provide opportunities for shoreline trail access, completion of San Francisco Bay Trail gaps, wildlife observation and non-motorized small boat access. Preserve group picnic areas, vistas, multipurpose trails and rugged character of the shoreline.
12. **San Leandro Shoreline Park System** - Protect and provide public access to shellfish beds offshore.
13. **San Francisco Airport** - Further expansion into Bay only if clear need is shown by regional airport system study. Keep runway approach and takeoff areas free from tall structures and incompatible uses. Complete Bay Trail along inland route.
14. Protect and provide public access to shellfish areas offshore.
15. **Oyster Point Marina Park** - Preserve and improve marina and shoreline park. Preserve picnicking, swimming, boating, hiking, windsurfing, and fishing opportunities. Possible ferry terminal. Allow if compatible with park and marina use; serve with bus public transit to reduce traffic and parking needs. Some fill may be needed. Provide signage regarding fish consumption advisories for anglers.
16. Provide safe, accessible pedestrian access across freeway.
17. No roadway in Bay east of U.S. 101.
18. **U.S. 101 Causeway** - Develop scenic frontage road and turnouts for fishing and viewing. Protect shellfish beds offshore.
19. **Bay View Park** - Provide trail link to waterfront.
20. **Candlestick Point State Recreation Area** - Some fill may be needed. Preserve fishing, camping, picnicking, windsurfing, hiking and viewing opportunities. Potential water trail camping site. Provide signage regarding fish consumption advisories for anglers.
21. **South Basin** - Some fill may be needed in inlet west of proposed freeway.
22. **Hunters Point** - Develop shoreline park and integrate with Candlestick Point State Recreation Area, consistent with San Francisco redevelopment plan. Potential water trail camping site. Some fill may be needed.

Plan Map 5

Bay Plan Policies and Commission Suggestions

BAY PLAN POLICIES (cont.)

23 **Port of San Francisco** - See Seaport Plan. Some fill may be needed.

24 **San Francisco Waterfront Special Area Plan** - See special area plan for detailed planning guidelines for the shoreline between the east side of the Hyde Street Pier and the south side of India Basin.

25 **Yerba Buena Island - South of Bay Bridge** - When no longer owned or controlled by the federal government, redevelop for recreational use. Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.

26 **Yerba Buena and Treasure Islands - Clipper Cove** - Expand marina and other water-oriented recreation uses, provide access to small water craft, e.g., kayaks, and swimming. Preserve beaches and eelgrass beds.

27 **Yerba Buena Island - North of Bay Bridge** - Provide: (1) a large public open space at the center of Yerba Buena Island; (2) a large public open space on the plateau on the eastern peninsula, adjacent to and beneath the eastern span of the San Francisco-Oakland Bay Bridge; and (3) a linked system of trails near the shoreline and at the upper elevations that connect vista points and open spaces. Vista points should provide views of the Bay Bridge, San Francisco Skyline and other important Central Bay features. The remainder of the island upland of the shoreline band may be developed for other uses consistent with Bay Plan recreation policy 4-b, and with the applicable public trust provisions and statutes.

28 **Treasure Island** - When no longer owned or controlled by the federal government, redevelop for public use. Provide continuous public access to the Bay in a manner protective of sensitive wildlife. Provide parking and water access for users of non-motorized small boats at north end of Treasure Island. Develop a system of linked open spaces, including a large open space at the northern end of the island.

29 **Fisherman's Wharf** - Improve and expand commercial fishing support facilities. Enhance public access to and economic value of Fisherman's Wharf area by encouraging development of a public fish market.

30 **Regional Restoration Goal for Central Bay** - Protect and restore tidal marsh, seasonal wetlands, beaches, dunes and islands. Natural salt ponds should be restored on the East Bay shoreline. Shallow subtidal areas (including eelgrass beds) should be conserved and enhanced. Wherever possible tidal marsh habitats should be restored, particularly at the mouths of streams where they enter the Bay and at the upper reach of dead-end sloughs. Encourage tidal marsh restoration in urban areas. See the Baylands Ecosystem Habitat Goals report for more information.

COMMISSION SUGGESTIONS

A Possible reuse of dredged material at former NAS Alameda.

B Jack London Square - Expand commercial recreation facilities as needed. Provide continuous public access along Estuary to Lake Merritt Channel.

C Brooklyn Basin - Expand commercial fishing and recreational facilities.

D Possible scenic path, Coliseum to Bay.

E Bay Farm Island - Undeveloped areas may be suitable for airport-related industry.

F Possible extension of scenic drive.

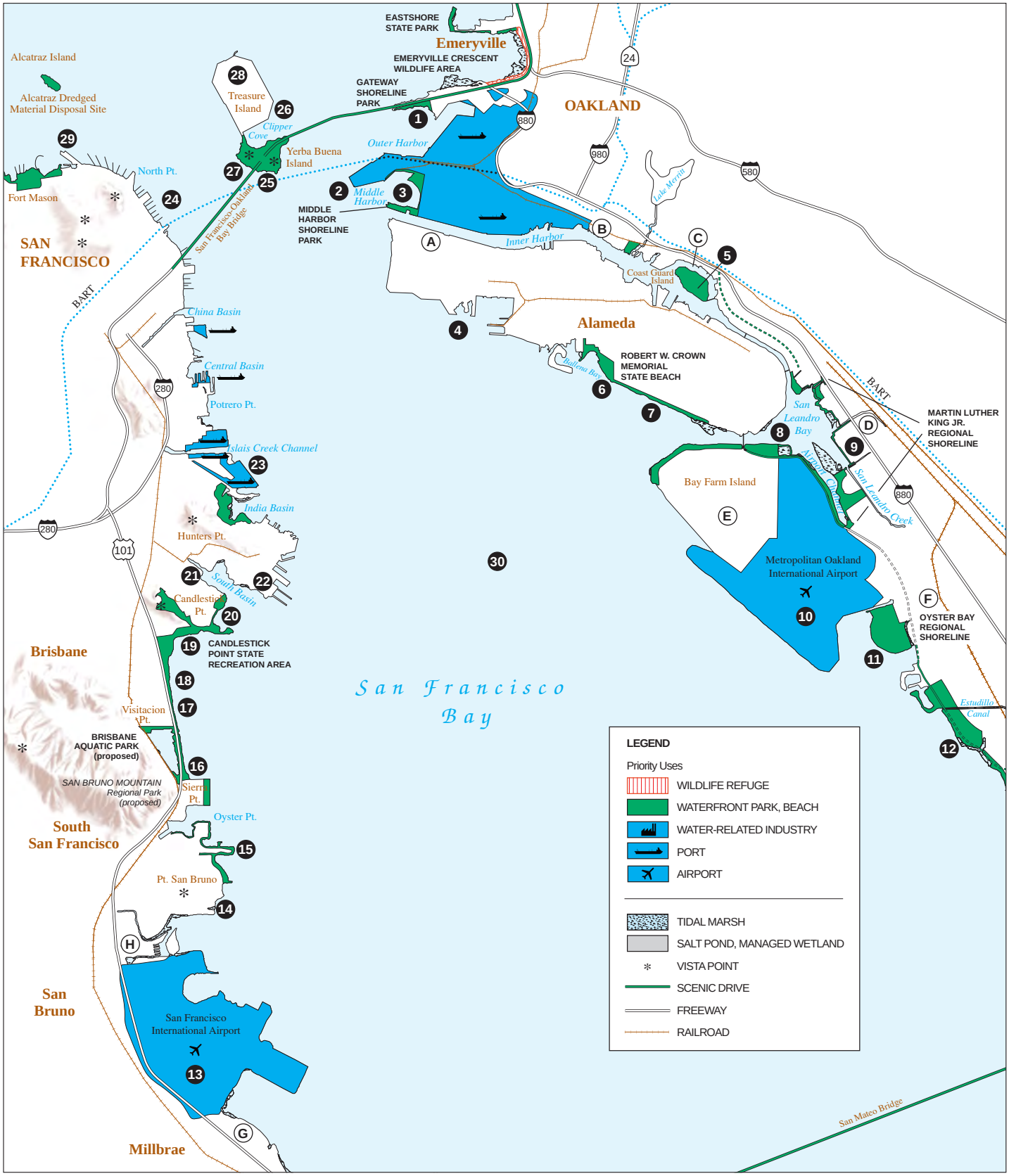
G Develop scenic drive and riding and hiking trail along waterfront from airport to Foster City.

H Possible airport industry.

Amended September 2006

Plan Map 5

Central Bay



San Francisco Bay Conservation and Development Commission

Amended May 2024

Plan Map 6

Central Bay South

PLAN MAP NOTES

Hayward Area Waterfront *- The Hayward Area Shoreline Plan, a detailed plan for the Hayward area shoreline between the San Leandro city limits on the north and Fremont and Union City city limits on the south, was prepared by the Hayward Area Shoreline Planning Agency. The Plan, adopted by the City of Hayward, Alameda County, East Bay Regional Park District, and the Hayward Area Recreation and Park District, provides for marsh restoration and shoreline recreation use.*

Greco Island *- Largest remaining marsh in South Bay. Tidal marsh and adjacent tidal flats are part of Don Edwards San Francisco Bay National Wildlife Refuge and are important feeding areas for birds. Area used by California Clapper Rail, a rare species of bird, endangered by loss of habitat.*

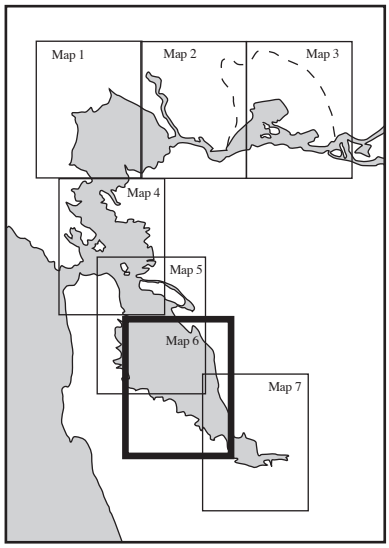
San Mateo (City) Waterfront *- Presently undeveloped. Detailed planning needed to determine most desirable waterfront design emphasizing recreation with minimum of Bay filling.*

Burlingame Waterfront *- Developing waterfront requires detailed planning to determine the most desirable waterfront design emphasizing recreation and public access with a minimum of Bay filling.*

Don Edwards San Francisco Bay National Wildlife Refuge *- The U.S. Fish and Wildlife Service manages and proposes to restore approximately 9,600 acres of salt ponds and adjacent tidal habitats added to the Don Edwards San Francisco Bay National Wildlife Refuge to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies and provides excellent wildlife compatible recreation opportunities.*

Eden Landing Ecological Reserve *- The California Department of Fish and Game manages and proposes to restore 5,500 acres of salt ponds and adjacent tidal habitats added to the Eden Landing Ecological Reserve to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies and provides excellent wildlife compatible recreation opportunities.*

San Francisco Bay Area Water Trail *- Pursuant to state legislation, the Commission, in partnership with the State Coastal Conservancy, Association of Bay Area Governments and interested parties, is preparing a San Francisco Bay Area Water Trail plan. The Water Trail will provide a series of linked landing and launching sites around the Bay for human-powered boats and beachable sail craft, and provide for diverse water-accessible overnight accommodations, including camping.*



Amended September 2006

Plan Map 6

Bay Plan Policies and Commission Suggestions

BAY PLAN POLICIES

1. **Oakland Airport** - Further expansion into the Bay only if clear need is shown by regional airport system study. Keep runway approach and takeoff areas clear of tall structures and incompatible uses. Complete Bay Trail along inland route around airport.
2. **Oyster Bay Regional Shoreline** - Provide opportunities for shoreline trail access, completion of San Francisco Bay Trail gaps, wildlife observation and non-motorized small boat access. Preserve group picnic areas, vistas, multipurpose trails and rugged character of the shoreline.
3. **San Leandro Shoreline Park System** - Protect and provide public access to shellfish beds offshore.
4. **Hayward Shoreline** - Preserve interpretive center. Continue to manage for wildlife habitats and wildlife, and provide wildlife compatible recreation activities. Maintain trails and continue to provide environmental education. Gateway to Eden Landing Ecological Reserve.
5. If not needed for salt production, ponds west of Coyote Hills should be restored consistent with management objectives for the Don Edwards San Francisco Bay National Wildlife Refuge.
6. **Dumbarton Bridge** - Approaches should provide for fishing and wildlife observation. Maintain existing public path.
7. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
8. **Greco Island** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young.
9. **Port** - See Seaport Plan. Expand marine terminals and water-related industries. Some fill may be needed.
10. Provide public access to the Bay along levees in a manner that is protective of sensitive wildlife. Provide trail linkage between San Carlos Airport and Whipple Avenue.
11. **Bair Island Ecological Reserve** - Restore and enhance habitat for the benefit of wildlife and aquatic life. Protect harbor seal haul-out and pupping sites where harbor seals rest, give birth and nurse their young. Provide wildlife compatible recreation opportunities.
12. **Redwood Shores** - Provide continuous public access to Bay and to Belmont, Steinberger, Smith, and Corkscrew Sloughs if in a manner protective of sensitive wildlife; where appropriate include paths, beaches, small parks, and wildlife observation areas. Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
13. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
14. **Foster City** - Provide continuous public access to Bay and Belmont Slough, including paths, beaches, and small parks.
15. Protect and provide public access to shellfish beds offshore.
16. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
17. **Coyote Point Recreation Area** - Provide full-service public marina. Preserve beach and launching ramp; expand marina. Some fill may be needed. Preserve and improve swimming, windsurfing, picnic, family gathering, museum, interpretive facilities and playgrounds. Allow appropriate concessions. Stabilize shoreline. Potential water trail campsite. Improve access for non-motorized small boats. Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
18. **Bayside Park** - Retain lagoon as open water.
19. **San Francisco Airport** - Further expansion into Bay only if clear need is shown by regional airport system study. Keep runway approach and takeoff areas free from tall structures and incompatible uses.
20. **Regional Restoration Goal for South Bay** - Restore large areas of tidal marsh connected by wide corridors of similar habitat along the perimeter of the Bay. Several complexes of salt ponds, managed to optimize shorebird and waterfowl habitat functions, should be interspersed throughout the region, and natural unmanaged salt ponds should be restored on the San Leandro shoreline. Natural transitions from tidal flat to tidal marsh and into adjacent transition zones and upland habitats should be restored wherever possible. See the Baylands Ecosystem Habitat Goals report for more information.

Amended September 2006

COMMISSION SUGGESTIONS

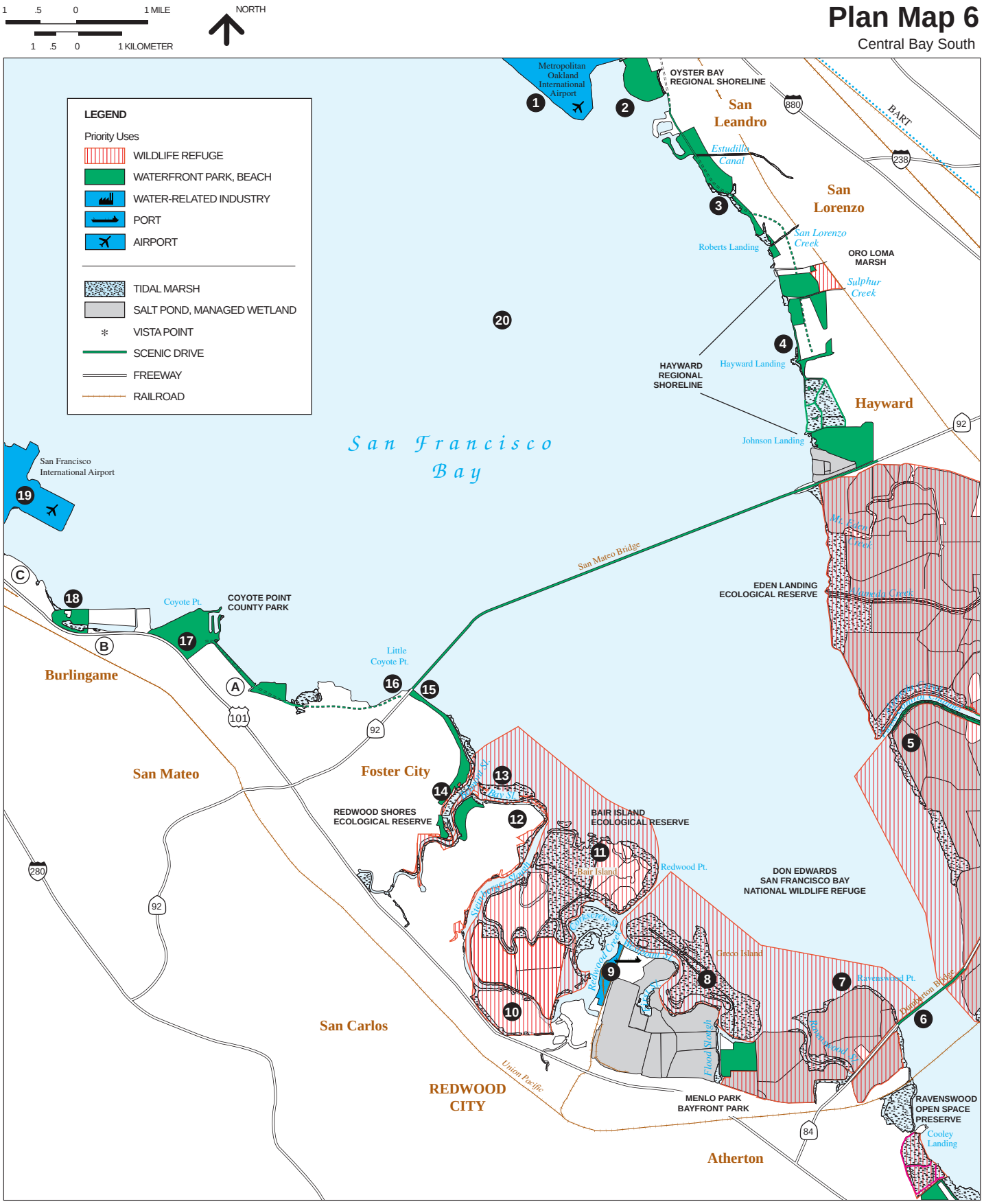
(A) San Mateo - Prepare precise plan and development program for waterfront emphasizing water-oriented recreation. Some fill may be needed.

(B) Burlingame - Prepare precise plan and development program for waterfront; include continuous public access to Bay shoreline for viewing and fishing. Some fill may be needed.

(C) Develop scenic drive and riding and hiking trail along waterfront from airport to Foster City.

Plan Map 6

Central Bay South



San Francisco Bay Conservation and Development Commission

Amended May 2024

San Francisco Bay Plan
Reprinted March 2025

Plan Map 7

South Bay

PLAN MAP NOTES

Hayward Area Waterfront *- The Hayward Area Shoreline Plan, a detailed plan for the Hayward area shoreline between the San Leandro city limits on the north and Fremont and Union City city limits on the south, was prepared by the Hayward Area Shoreline Planning Agency. The Plan, adopted by the City of Hayward, Alameda County, East Bay Regional Park District, and the Hayward Area Recreation and Park District, provides for marsh restoration and shoreline recreation use.*

Coyote Hills *- Possible eastward expansion of Coyote Hills Regional Park through acquisition, development of public access and restoration of habitats on adjacent lands to connect existing park with Paseo Padre Parkway.*

Water Quality *- Water at extreme south end of Bay is often polluted so as to discourage recreational use of sloughs and Bay. Greater recreational use will require improved water quality. Some improvements in the quality of water in the South Bay are now being made pursuant to requirements of the San Francisco Bay Regional Water Quality Control Board, and studies underway by wastewater dischargers will lead to further improvements. The recommendations for long-range improvements to water quality contained in the Water Quality Control Plan for the San Francisco Bay Basin, prepared by the San Francisco Bay Regional Water Quality Control Board and approved by the State Water Resources Control Board, should be followed.*

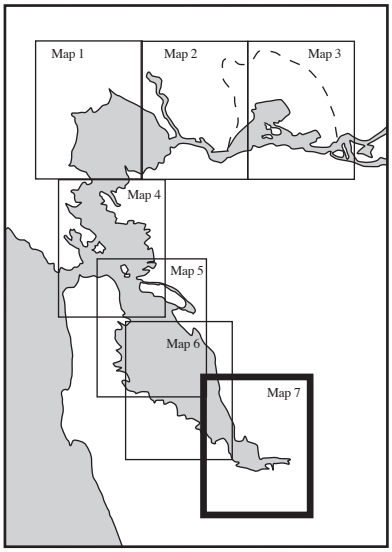
Subsidence *- Area subject to possible subsidence. Construction in or near Bay should be carefully planned, taking into account effects of future subsidence and sea level rise.*

Santa Clara County Shoreline *- The Santa Clara County Planning Policy Committee adopted a Policy Plan for the Baylands of Santa Clara County (July 1972) which establishes conservation and development goals and policies for the Santa Clara County shoreline.*

Alviso-San Jose Waterfront *- Detailed planning is needed to determine most desirable waterfront design and to overcome subsidence problems. Proposals should emphasize the great recreation potential of this area.*

Moffett Naval Air Station *- Plan maps indicate recommended use for bayfront military installations if one or more of these bases is ever declared surplus by the military. The Bay Plan does not advocate the closing of any military installation.*

Don Edwards San Francisco Bay National Wildlife Refuge *- The U.S. Fish and Wildlife Service manages and proposes to restore approximately 9,600 acres of salt ponds and adjacent tidal habitats added to the Don Edwards San Francisco Bay National Wildlife Refuge to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies and provides excellent wildlife compatible recreation opportunities.*



Eden Landing Ecological Reserve - *The California Department of Fish and Game manages and proposes to restore 5,500 acres of salt ponds and adjacent tidal habitats added to the Eden Landing Ecological Reserve to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies and provides excellent wildlife compatible recreation opportunities.*

San Francisco Bay Area Water Trail *- Pursuant to state legislation, the Commission, in partnership with the State Coastal Conservancy, Association of Bay Area Governments and interested parties, is preparing a San Francisco Bay Area Water Trail plan. The Water Trail will provide a series of linked landing and launching sites around the Bay for human-powered boats and beachable sail craft, and provide for diverse water-accessible overnight accommodations, including camping.*

Amended September 2006

Plan Map 7

Bay Plan Policies and Commission Suggestions

BAY PLAN POLICIES

1. If not needed for salt production, ponds west of Coyote Hills should be restored consistent with management objectives for the Don Edwards San Francisco Bay National Wildlife Refuge.
2. **Coyote Hills Regional Park** - Preserve multi-use public access along Alameda Creek Trail to Don Edwards San Francisco Bay National Wildlife Refuge and to Highway 84 toll plaza crossing. Preserve visitor's center, picnic areas, camping, multi-use trails and naturalist programs. Protect tidal wetlands and provide opportunities for wildlife observation and non-motorized small boat access.
3. **Dumbarton Bridge** - Approaches should provide for fishing and wildlife observation. Maintain existing public path.
4. **Newark Slough to Coyote Creek** - Protect harbor seal haul-out and pupping sites where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
5. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
6. **Newby Island** - Provide levee access for wildlife observation.
7. If not needed for sewage treatment purposes, oxidation ponds should be acquired as permanent wildlife area.
8. **Alviso Marina County Park** - Provide public access, regional trail connections, launching ramp, interpretive facilities and picnic areas. Preserve public access to Don Edwards San Francisco Bay National Wildlife Refuge.
9. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
10. If not needed for salt production, ponds north of Moffet Field should be reserved for possible airport expansion.
11. **Moffett Naval Air Station** - If and when not needed by Navy, site should be evaluated for commercial airport by regional airport system study. (Moffett NAS not within BCDC permit jurisdiction.)
12. **South Bay** - Enhance and restore valuable wildlife habitat. Bay tidal marshes and salt ponds may be acquired as part of Don Edwards San Francisco Bay National Wildlife Refuge and managed to maximize wildlife and aquatic life values. Salt ponds can be managed for the benefit of aquatic life and wildlife. Provide continuous public access to the Bay and salt ponds along levees if in a manner protective of sensitive wildlife. Provide opportunities for non-motorized small boat launching facility where compatible with wildlife and habitat protection.
13. **Harbor Seal Haul-Out** - Protect harbor seal haul-out and pupping site where harbor seals rest, give birth and nurse their young. Projects allowed only if protective of harbor seals and other sensitive wildlife.
14. **Regional Restoration Goal for South Bay** - Restore large areas of tidal marsh connected by wide corridors of similar habitat along the perimeter of the Bay. Several complexes of salt ponds, managed to optimize shorebird and waterfowl habitat functions, should be interspersed throughout the region, and natural unmanaged salt ponds should be restored on the San Leandro shoreline. Natural transitions from tidal flat to tidal marsh and into adjacent transition zones and upland habitats should be restored wherever possible. See the Baylands Ecosystem Habitat Goals report for more information.

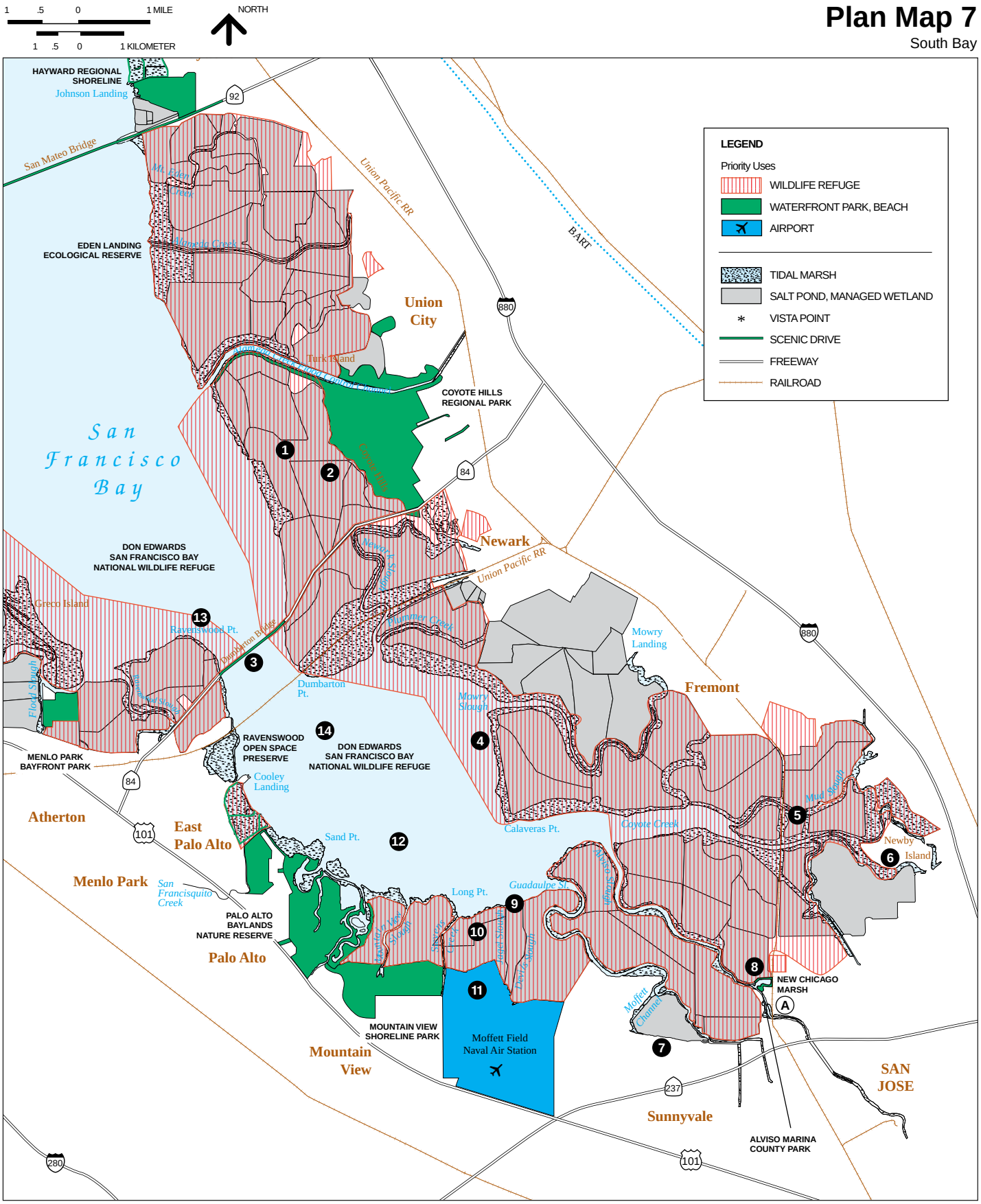
COMMISSION SUGGESTIONS

A. Alviso-San Jose - Provide continuous shoreline public access.

Amended September 2006

Plan Map 7

South Bay



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