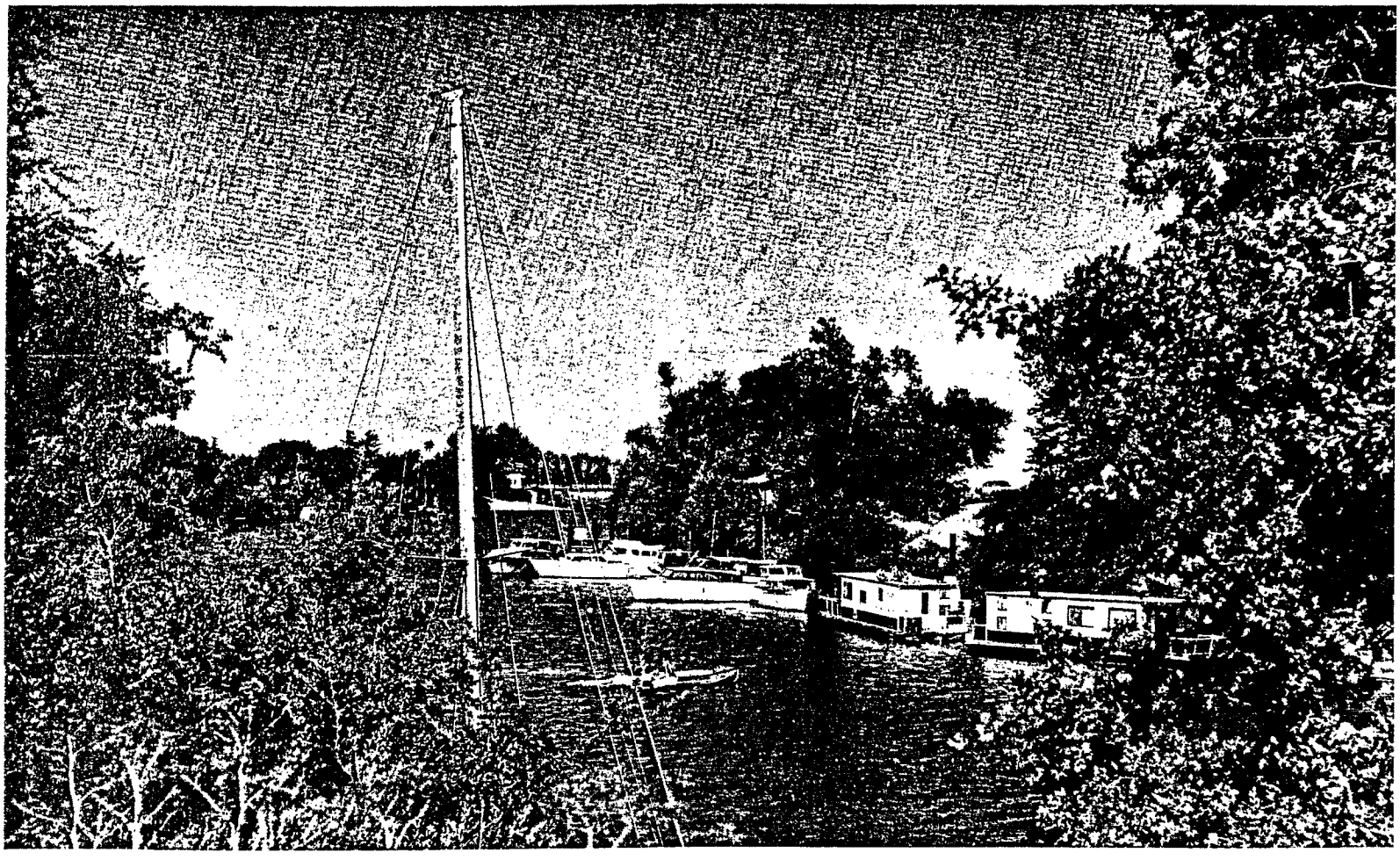
SACRAMENTO-SAN JOAQUIN DELTA MASTER RECREATION PLAN
Updated and Revised Edition of the 1973 Report

DELTA MASTER RECREATION PLAN



SEPTEMBER 1976

EDMUND G. BROWN JR.
Governor
State of California

CLAIRE T. DEDRICK
Secretary for Resources
The Resources Agency

By Assemblyman Z'berg:

House Resolution No. 20

Relative to implementation of the Delta Master Recreation Plan

WHEREAS, The Legislature in 1963 mandated the preparation of the Delta Master Recreation Plan as a guide to coordination of recreational planning between federal, state, and local agencies in the Sacramento-San Joaquin Delta; and

WHEREAS, The Legislature also provided for periodic reports on the implementation of the Delta Master Recreation Plan; and

WHEREAS, The last report on the Plan was transmitted by the Secretary of Resources to the Legislature in 1973 and there are currently pending several development proposals and actions which will have a major impact on future recreational opportunities in the Delta; and

WHEREAS, There is a continuing need to integrate in an orderly manner the policies and actions of federal, state, and local agencies in a coordinated program of recreation development in the Delta; now, therefore, be it

Resolved by the Assembly of the State of California, That the Secretary of Resources is hereby requested to collaborate with appropriate federal, state, regional, and local agencies in revising and updating as necessary the Delta Recreation Master Plan, making maximum use of existing studies, positions, and planning efforts; and to prepare an integrated program of short- and long-term legislative and administrative actions required to accomplish the objectives and recommendations of the Delta Master Recreation Plan; and be it further

Resolved, That the Secretary of Resources shall transmit the revised Plan and implementation program to the Assembly not later than January 1, 1976; and be it further

Resolved, That the Chief Clerk of the Assembly transmit a copy of this resolution to the Secretary of Resources.

Resolution read, and referred by the Speaker pro Tempore to the Committee on Rules.

C-069573

SACRAMENTO-SAN JOAQUIN DELTA MASTER RECREATION PLAN

Prepared by

THE DELTA MASTER RECREATION PLAN TASK FORCE

Convened by the Secretary for Resources

State of California

September 1976

OFFICE OF THE SECRETARY
RESOURCES BUILDING
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Department of Conservation
Department of Fish and Game
Department of Navigation and Ocean Development
Department of Parks and Recreation
Department of Water Resources

EDMUND G. BROWN JR.
GOVERNOR OF
CALIFORNIA

Air Resources Board
Colorado River Board
San Francisco Bay Conservation and Development Commission
Solid Waste Management Board
State Lands Commission
State Reclamation Board
State Water Resources Control Board
Regional Water Quality Control Boards
Energy Resources Conservation and Development Commission

THE RESOURCES AGENCY OF CALIFORNIA

SACRAMENTO, CALIFORNIA

Honorable Edmund G. Brown Jr.
Governor of California
State Capitol
Sacramento CA 95814

Honorable Leo T. McCarthy, Speaker
California State Assembly
State Capitol
Sacramento, CA 95814

Dear Governor Brown and Speaker McCarthy:

I am pleased to transmit to you the 1976 Sacramento-San Joaquin Delta Master Recreation Plan. This report was prepared in response to House Resolution 20 sponsored by the late Edwin Z'berg during the 1975 Session. The report is dedicated to the memory of Assemblyman Z'berg, who recognized and strongly advocated protecting and enhancing the valuable and unique resources of our Delta for the benefit of mankind. I strongly concur with this goal, which also was our goal in preparing the report.

This is the third edition of the Delta Master Recreation Plan. The purposes of this plan are to update the Resources Agency's policy for the Sacramento-San Joaquin Delta and to provide a comprehensive guide to State, federal and local agencies and the public for the protection and development of the Delta's scenic, wildlife and recreation resources.

The report includes major recommendations for maintaining and improving the fragile Delta levees, implementing and enforcing a waterway use program, determining and protecting the public interest in state lands in the Delta, acquiring specifically defined areas with high recreation and wildlife values and developing needed public recreation facilities to satisfy increasing demands while retaining and improving the Delta's important environmental values.

The report was prepared by a task force representing most of the organizations in the Resources Agency and it was coordinated with interested federal, regional and county agencies as well as representatives of interest groups.

C-069575

Included in this report is an updated Delta Waterways Use Program which classifies the Delta waterways into either natural, scenic, or multiple-use categories, and provides waterway use and development standards needed to protect the environmental values of the Delta.

With implementation of the recommended actions by State, federal and local agencies, the California Legislature and the public, this significant local, State and national asset -- our Delta -- can be preserved and enhanced.

Sincerely,

Claire T. Dedrick

Secretary for Resources

C-069576

DELTA MASTER RECREATION PLAN TASK FORCE AND ALTERNATES

James W. Burns, Chairman ..... Resources Agency
Jack Chatfield ..... Department of Parks and Recreation
Stan Euston ..... San Francisco Bay Conservation and Development Commission
Robert Fingado ..... Department of Water Resources
Paul Giguere and Robert Lassen ..... Department of Fish and Game
Herb Maricle and Dwight Sanders ..... State Lands Division
John Payne and George Spencer ..... Reclamation Board
William Van Dyck ..... Department of Navigation and Ocean Development

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Anthony Dehaesus and Karl Wandry ..... Contra Costa County
Earl Fraser and Don Terrell ..... Sacramento County
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James Robertson ..... State Water Resources Control Board
Harold Rubin ..... Consulting Editor
Felix Smith ..... U. S. Fish and Wildlife Service

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PREFACE

In June 1966, and again in February 1973, the California Resources Agency issued Sacramento-San Joaquin Delta Master Recreation Plans in response to legislation. Both plans declared that a primary State goal for the Delta is to protect and develop the Delta's scenic, wildlife and recreational resources. The plans provided the State, other agencies and the public with guidelines and recommendations for accomplishing this goal. The 1973 plan also defined State policy for the Delta. Many of the recommendations in the plans have not been put into effect. In part, this can be attributed to the fragmented mechanisms responsible for carrying out the overall policy, the difficulty of determining the State's interest and ownership of tidal lands in the Delta, and the difficulty of obtaining sufficient funds to implement the recommendations.

Both Delta Master Recreation Plans contained a Waterway Use Plan to guide and control development in and along the Delta Waterways. The 1973 Waterway Use Plan was adopted in principle by the Delta counties and it has been used with some success by the State Departments of Navigation and Ocean Development, Fish and Game, Parks and Recreation and Water Resources, as well as the State Lands Commission and the U. S. Army Corps of Engineers. However, application and interpretation of the Waterway Use Plan by the various governmental agencies have varied.

The California Legislature in 1975 requested the Resources Agency to update the 1973 Plan and this 1976 Delta Master

Recreation Plan responds to that request. The legislation, House Resolution 20, is shown at the front of this report. The 1976 plan has the same purposes as the 1966 and 1973 plans; however, it updates, strengthens and supersedes the two previous plans and their Waterway Use Plans. Additionally, it presents both short-term and long-term legislative and administrative actions necessary to accomplish the goals of the plan, and it emphasizes the responsibilities for the implementation of the various recommendations.

Although the title of the plan implies that it deals solely with recreation, it encompasses much more. It necessarily considers the many factors that influence recreation. These include land use and transportation, levees and waterways; fish and wildlife, land ownership and institutional involvement within the Delta.

The 1976 plan was prepared by a Resources Agency task force made up of representatives from most of the organizations in the Agency. Since recreation development in the Delta is carried on primarily by private interests, and also by local, State and federal agencies, representatives from various interest groups and governmental agencies were invited to participate as a technical advisory group to the agency task force in developing the plan. Members of the Delta Master Recreation Plan Task Force and the Technical Advisory Committee are listed at the front of the report.

SUMMARY

The Delta occupies an area of more than 1,100 square miles at the confluence of the Sacramento and San Joaquin Rivers. It encompasses over 60 leveed islands and tracts, most of which are near or below sea level. The Delta includes some of California's most fertile agricultural land and it is fast becoming one of the State's major recreation areas. With some 700 miles of waterways, it is one of the largest bodies of protected cruising waters in the western United States. In addition to boating, the Delta supports some of the State's most important fishing recreation. Its rich and varied wildlife populations attract sportsmen and nature lovers from all over the State.

Despite its abundant resources, the Delta is not without problems. Urban encroachment in the form of residential, commercial and industrial expansion is a continuing threat to portions of the Delta's recreational, agricultural and open space lands. The existing roadway system in the Delta provides only limited access, and future developments may foster improved access, which in turn could encourage urbanization. Zoning and other means should be used to protect the Delta against undesirable urban growth, and the roadway system should be improved only to serve new urban developments within existing communities and new recreational developments.

Many of the Delta levees are over 100 years old and levee failures are not uncommon. Many miles of Delta levees

need to be improved. Trees and other vegetation should be retained and planted on the Delta levees where possible to improve scenic, recreation and wildlife values.

Existing recreational facilities in the Delta are over-taxed and access to the public waterways is limited. Recreational use of the Delta is expected to continue to increase rapidly. Development of planned recreation and public access facilities in the Delta should be expedited. In addition, recreational developments should be constructed integrally with proposed levee improvement, flood control, water conveyance and navigation projects, and steps should be taken to increase public hunting opportunities in the Delta.

Many of the Delta's nonleveed islands, which may belong to the State, are being used by individuals to the exclusion of the general public. Furthermore, many existing private facilities built in the Delta's waterways, on its levees and on its islands, create conflicts and decrease public recreational opportunities. The extent of State ownership and the rights for public use of these islands should be defined.

Recreational use of the Delta waterways is largely unregulated. Conflicting uses often spoil recreational experiences, threaten public safety, or damage private property. The Delta Waterways Use Program, which appears as Appendix A in this report, should be used by State, federal and local governments to minimize conflicting waterway uses, minimize the adverse effects

of shoreside facilities on the use of the Delta waterways, provide guidelines and minimum standards for water-oriented development, preserve open space, and identify and preserve significant natural areas. State and local governments also should evaluate methods to better enforce the Waterways Use Program and to establish special use zones as provided for in the program.

Despite the abundance of fish and wildlife in the Delta, there has been a decline in their populations. Wildlife habitat has diminished, and various water quality problems such as increased waste discharges, salinity intrusions and reverse flows have adversely affected fish and wildlife. Existing wildlife habitat should be protected, specific wildlife areas as defined in this report should be acquired, and new wildlife habitat should be established. Although salinity intrusion is controlled by water released from Central Valley and State Water Project reservoirs, other Delta water quality problems should be resolved through development of a better understanding of Delta fish and wildlife resource requirements, operation of the State Water Project and Central Valley Project to protect and enhance fish and wildlife, implementation of a Delta Water Facility, adoption and enforcement of strict waste discharge requirements, and enforcement of mutually adopted State and federal water quality standards.

The Delta is also an area where conflicting uses and overlapping governmental jurisdictions make it difficult to

ensure that protection and development efforts will be successful. There are many State, federal and local agencies which conduct programs or regulate activities in the Delta and each follows its own authority and internal policies. The Resources Agency, the Delta Advisory Planning Council, and the U. S. Army Corps of Engineers through its permit program, have furnished a limited degree of coordination among agencies, but there is still a problem of fragmented planning and program implementation. State government, and in particular the Resources Agency, should play a key role in coordinating the protection and enhancement of the Delta. To assist in this role, the Agency is considering steps to initiate a permit procedure to provide a one-time review of projects proposed for construction in Delta waterways or on abutting lands. Each permit, development and review agency would continue to exercise its authorized functions, but each would gain the added advantage of full coordination with other agencies which are or should be involved.

The Delta is an agricultural, open space, recreational and wildlife area of major significance. Implementation of the recommendations which follow will provide a major step in protecting and developing the Delta for this and future generations.

State Legislature, State and Federal Agencies and Local Governments

1. The Legislature and the Delta counties should adopt the Delta Master Recreation Plan. (See Chapter III, page 12 and Chapter VII, page 9.)
2. The Legislature, through legislation, should implement the Delta Waterways Use Program. State and local agencies should implement and enforce the Program; federal agencies should comply with the Program. (See Chapter III, page 12; Chapter IV, page 3; Chapter VII, page 9; and Appendix A.)

State Legislature and State Agencies

3. The Legislature should provide adequate funds to enable the State Lands Division to do the necessary title work to document and substantiate all of the State's titles in the Delta. The State Lands Commission should then firmly establish its claim to many nonleveed channel islands, berms and waterways to make private owners aware of potential conflicts over ownership and eliminate controversies over claims to public lands by adverse possession. (See Chapter VI, page 3.)
4. The Legislature should amend Section 6503 of the Public Resources Code (Statutes of 1941) by rescinding the 1955 amendment that forbids the charging of a rental fee for private recreational docks and piers constructed for a littoral landowner's use, and the State Lands Commission should establish appropriate fees for private recreational docks and piers on State lands. (See Chapter IV, pages 4 and 5.)

State Agencies

5. The Resources Agency, with cooperation from federal, regional and local government, should be the central State agency responsible for coordinating the waterways and abutting land use planning, regulation and development of the Delta. (See Chapter VII, page 10.)

6. A single State agency, such as the State Lands Commission, with powers of condemnation and right of immediate possession, should coordinate the land and easement acquisition for all State agencies wishing to obtain fee and easement interests in the Delta. Any proposed funding for State acquisition of Delta lands should include adequate funds to enable the State Lands Division to make the necessary title and boundary investigation to determine the extent of existing public ownership. (See Chapter VI, pages 3 and 4.)

7. The State Lands Commission should give priority to the identification of the ownership of lands of the Delta currently funded for State Park acquisition (the Delta Meadows, Cosumnes River and Channel Islands projects). The Department of Parks and Recreation should then give priority to the acquisition of these lands and, in coordination with appropriate agencies as well as public and private organizations, should proceed to develop recreational facilities deemed acceptable after public hearings. (See Chapter III, page 13.)

8. The Department of Water Resources, in coordination with other governmental agencies and the private sector, should make a detailed survey to determine the current level of recreational use and future needs in the Delta. This

detailed survey would be the basis for selecting recreation development sites; determining the types of development needed; and staging, sizing and designing the needed public facilities for the Delta. (See Chapter III, page 13.)

9. The Department of Water Resources, in coordination with other governmental agencies and private organizations, should upon the selection of a Delta Water Facility, re-initiate the formulation of the recreation and wildlife features of the selected project. (See Chapter III, page 13.)

10. The Department of Parks and Recreation should develop and coordinate with other governmental agencies as well as private organizations, a recreational trail plan for the Delta that defines opportunities for "high use" recreational trail projects. This plan should recommend priority for the implementation of projects that would meet State criteria for the Delta. (See Chapter III, pages 14 and 16.)

11. The Department of Parks and Recreation should coordinate a comprehensive plan for the preservation, restoration and interpretation of the Delta's historic and cultural resources. (See Chapter III, page 16.)

12. The Department of Fish and Game should provide additional public hunting opportunities at Clifton Court Forebay and Miner Slough. The Department should also continue to encourage private development of more hunting opportunities through club activities. (See Chapter III, page 14.)

13. The Department of Fish and Game in cooperation with affected public agencies should continue efforts to improve wildlife habitat at Clifton Court Forebay (Department of Water Resources), the City of Isleton's waste water treatment facility (City of Isleton), Rough and Ready Island (U.S. Navy), and within highway rights-of-way (Caltrans). The Department should also continue to motivate landowners to provide areas for the maintenance or development of wildlife habitat. (See Chapter V, pages 7, 9 and 10.)

State Agencies and Local Governments

14. The Department of Water Resources should carry out its recently authorized responsibilities under the Nejedly-Mobley Delta Levees Act. The Department should prepare plans and specifications for levee improvements utilizing Department of Water Resources Bulletin No. 192 as a conceptual plan, implement a pilot levee project in an area of critical need of improvement after consummating a cost sharing agreement with a local agency, and report to the Legislature by specified dates on the levee improvement program. Local agency plans for maintenance and improvement of Delta levees should be compatible with the plans shown in Department of Water Resources Bulletin No. 192 and this Delta Master Recreation Plan. (See Chapter II, pages 8 and 9.)

Levee improvement programs should be planned so as not to encourage urban development on existing agricultural lands. (See Chapter I, page 4 .)

15. Caltrans and local governments should make a study of the feasibility, benefits and costs of a public or private land and water transportation system that would provide additional access to existing communities and access to recreational sites in the Delta. However, after completion of I-5, no new freeways should be built in the Delta unless in-depth studies show conclusively that they are necessary and that the adverse environmental impacts will be minimal and adequately mitigated. Other road systems should be planned and developed so as to discourage urban sprawl into the Delta.

The Delta road system should be maintained and improved to serve present rural and recreational development. Expansion of the road system should be allowed only to serve new urban developments within existing communities and new public recreational developments.

The further extension of public-service facilities, particularly roads and sewers, should be timed and directed to prevent scattered urban development from unnecessarily encroaching on agricultural lands. (See Chapter I, pages 4 and 5.)

16. State and local agencies should cooperate in making effective use of Sections 84.5, 991 and 1809 of the Streets and Highway Code to provide further fishing access to Delta waterways. These sections require a report, by the construction agency, on the feasibility of providing public access to the water on proposed State, county and city bridge projects. (See Chapter III, page 14.)

17. The Departments of Fish and Game and Navigation and Ocean Development, in consultation with the Department of Parks and Recreation, State Lands Division and the Delta counties, should give priority to the acquisition and management of selected nonleveed channel islands and other islands for the preservation and enhancement of wildlife habitat and scenic quality of the Delta and to provide for public boater-destination anchorages.

The Department of Fish and Game should establish a priority program for the evaluation, acquisition and management of those islands that have been tentatively identified as follows: (See Figure 5 and Chapter V, pages 8 and 9.)

(a) The Channel islands in Latham Slough between Empire Cut and Columbia Cut.

(b) The unnamed island in the South Fork of the Mokelumne River just north of Sycamore Slough.

(c) Browns Island (near Pittsburg).

(d) The unnamed island in Old River near Bethany.

(e) Old River islands, particularly Rhode Island, between Rock Slough and Quimby Island, including those in Connection Slough.

(f) Eucalyptus Island between Widdow and Kings Island north of Clifton Court Forebay.

The Department of Navigation and Ocean Development, in consultation with the Departments of Fish and Game, Parks and Recreation, the State Lands Division and local government,

should develop a program to acquire selected nonleveed channel islands in the Delta's "Scenic" and "Multiple Use Waterways" (as identified in the Waterways Use Program, Appendix A) for development as boater-destination anchorages. (See Chapter IV, page 5.)

18. The Department of Navigation and Ocean Development should determine the feasibility of establishing enforceable standards for restricted wake zones to protect sensitive ecological resources, moored vessels, or any area where boat wakes can create a hazard or safety problem. Upon development, these standards should be codified in the Harbors and Navigation Code. Local governments and the Department of Navigation and Ocean Development should establish restricted wake zones where desirable. (See Chapter IV, page 4.)

19. Local governments, in coordination with the Department of Navigation and Ocean Development and the Resources Agency, should establish limited speed and recreational use zones in areas where desirable. Local governments in coordination with the Department of Navigation and Ocean Development should also evaluate methods of establishing a coordinated boat patrol for better enforcement of boating safety and waterways use regulations. (See Chapter III, page 12 and Chapter IV, pages 3 and 4.)

State and Federal Agencies and Local Governments

20. The Department of Water Resources and the U. S. Army Corps of Engineers, through their new multiple-purpose levee

improvement studies, should ensure that both the State and federal levee standards for the Delta permit a maximum of vegetation to be retained on the levees. Stripped levees should be replanted and multiple-purpose levee maintenance standards established to allow original or replanted vegetation to remain on newly rehabilitated levees where its retention would not adversely affect levee stability, navigation and the necessary flood carrying capacity of the channels.

State fiscal assistance programs which encourage the retention and planting of vegetation on levees should give priority to "Natural Areas" (as identified in the Waterways Use Program, Appendix A). The U. S. Army Corps of Engineers, special districts and local governments should ensure that their regulations, actions, policies and fiscal programs are consistent with that objective. (See Chapter II, page 9 and Chapter V, page 7.)

State and Federal Agencies

21. The Departments of Water Resources and Fish and Game, the U. S. Bureau of Reclamation and the U. S. Fish and Wildlife Service should continue their cooperative studies and actions relative to the Delta environment, fish and wildlife resources, water management, export and fish protective facilities so that:

    (a) An adequate understanding of the fish and wildlife resources of the San Francisco Bay-Delta System is developed;

(b) Proper design and operating criteria are developed for the State Water Project and the Central Valley Project, and;

(c) Project operations are monitored, evaluated and modified as necessary to ensure the protection and enhancement of fish and wildlife in the Delta. (See Chapter V, pages 4, 5 and 6.)

22. Federal and State agencies should carefully study any navigation project which involves the deepening of Delta ship channels to ensure that the operation does not damage the Delta environment. Adequate mitigation should be required of any channel-deepening project that would adversely affect environmental quality. (See Chapter I, page 5 and Chapter III, pages 6, 7 and 8.)

23. Federal and State flood control, water conveyance and navigation projects in the Delta should have recreation access sites, boater-destination sites and appropriate recreational facilities as integral elements of the project subject to provisions for the adequate control of trespass, litter and sanitation. Controlled public access easements to selected potential recreation sites and waterways should be strongly considered as a condition for expending public funds on the Delta levees.

A study should be made to determine the best methods of controlling trespass, litter and sanitation at recreation access sites and facilities established as elements of federal and State flood control, water conveyance and navigation projects. Specifically, the operation and maintenance problems should be addressed. (See Chapter III, page 13.)

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24. The Departments of Fish and Game, Parks and Recreation and Conservation, the State Reclamation Board and the U. S. Army Corps of Engineers should investigate the feasibility of revegetating Delta spoil deposition areas on a rotation basis and they should renegotiate agreements on present spoil sites on Lower Sherman Island and on the west side of the Sacramento River below Rio Vista.

Dredged material could be placed on Lower Sherman Island to provide better public access and spoil from the Rio Vista area could be placed on the east side of the river to provide a beach area and give protection to State Highway 160. (See Chapter V, page 10.)

25. The State Lands Commission and the U. S. Army Corps of Engineers should cooperate in the administration of their respective authorizations to remove, from lands under their jurisdictions including the Delta waterways, all structures and obstructions which constitute a threat to public safety and, if possible, expand such efforts. The program should cause the removal from such waterways, including Franks Tract, of all abandoned piling and other submerged or partially submerged man-made objects which have been designated as safety hazards by the aforementioned agencies. (See Chapter IV, page 4.)

Federal Agencies

26. The U. S. Bureau of Reclamation should increase the vertical clearance of the Delta Cross-Canal structure, or provide a

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boat lock for small craft around the structure to improve cross-Delta navigation. This action would require the alteration or removal of the adjacent Southern Pacific Railroad bridge. (See Chapter IV, page 5.)

Local Governments

27. Local governments should develop plans and regulations to implement the Delta Master Recreation Plan and its Waterways Use Program. These plans and regulations should:

(a) Include adoption of zoning ordinances that assure that uses of land abutting Delta waterways are compatible with the Waterways Use Program. (See Chapter I, page 4 and Appendix A.)

(b) Protect existing wildlife habitat, particularly that abutting waterways classified as "Natural" or "Scenic". (See Chapter V, page 8 and Appendix A.)

(c) Emphasize the reduction of conflicts among the uses of the waterways. (See Chapter IV, pages 3 and 4.)

28. Local governments should recognize that the agricultural, open space and recreational resources of the Delta are of critical concern to the State. Maximum use should be made of zoning and enforceable restrictions, such as Williamson Act contracts, to protect Delta agricultural lands and open space from urban encroachment. Delta lands included in open space, agricultural and flood-hazard designations should be given the maximum regulatory protection. Urban development should be allowed only where the proposed project areas are

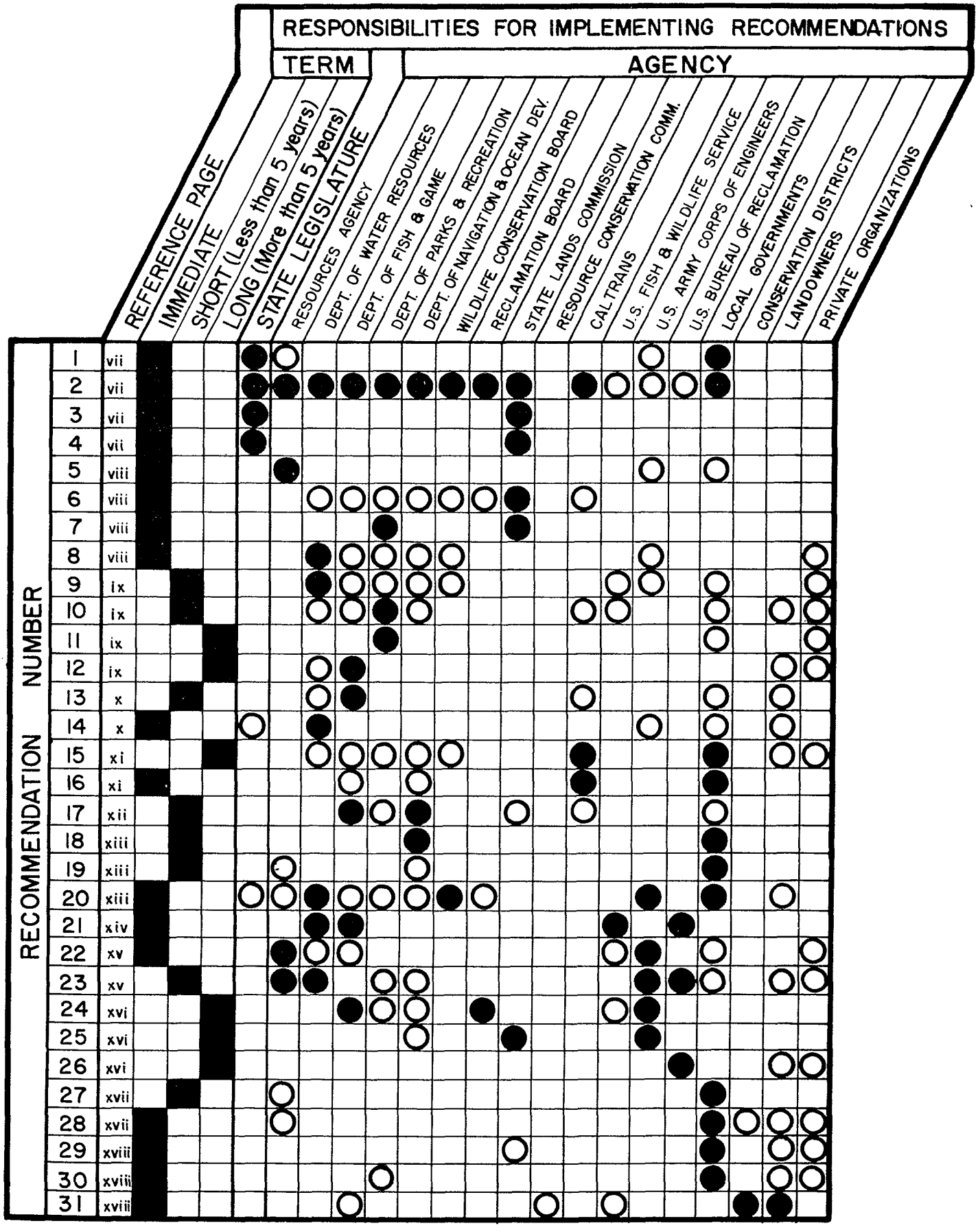
provided with at least 100-year flood protection. (See Chapter I, page 4 and Chapter II, page 7.)

29. Local governments should require proof of ownership prior to accepting property taxes on nonleveed channel islands to prevent the seizing of these islands by private individuals to the exclusion of the public. The proliferation of structures on nonleveed channel islands can best be controlled by implementation and enforcement of the Waterways Use Program and strong local zoning ordinances. (See Chapter IV, page 5 and Chapter V, page 8.)

30. The Sacramento Housing and Redevelopment Agency's recently initiated preservation plan for the town of Locke should be coordinated with other appropriate government agencies and public and private organizations. (See Chapter III, page 16.)

Landowners and Conservation Districts

31. Landowners and Resource Conservation Districts, with assistance from the State Resource Conservation Commission should make maximum use of the U. S. Department of Agriculture programs and funding to conserve Delta soils and improve wildlife habitat. (See Chapter I, page 5 and Chapter V, page 7.)



● PRIMARY RESPONSIBILITY

○ SECONDARY RESPONSIBILITY / CONCERN

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CHAPTER I: LAND USE AND TRANSPORTATION IN THE DELTA

A. GENERAL DESCRIPTION OF THE LAND USE AND TRANSPORTATION

The Delta is situated at the confluence of the Sacramento and San Joaquin Rivers, where it occupies an area of more than 1,100 square miles. Before the California gold rush, the entire Delta was a great natural inland tule marsh with scattered groves of trees and abundant fish and wildlife. During the early 1850s, the tremendous agricultural potential of the area was recognized and land reclamation began.

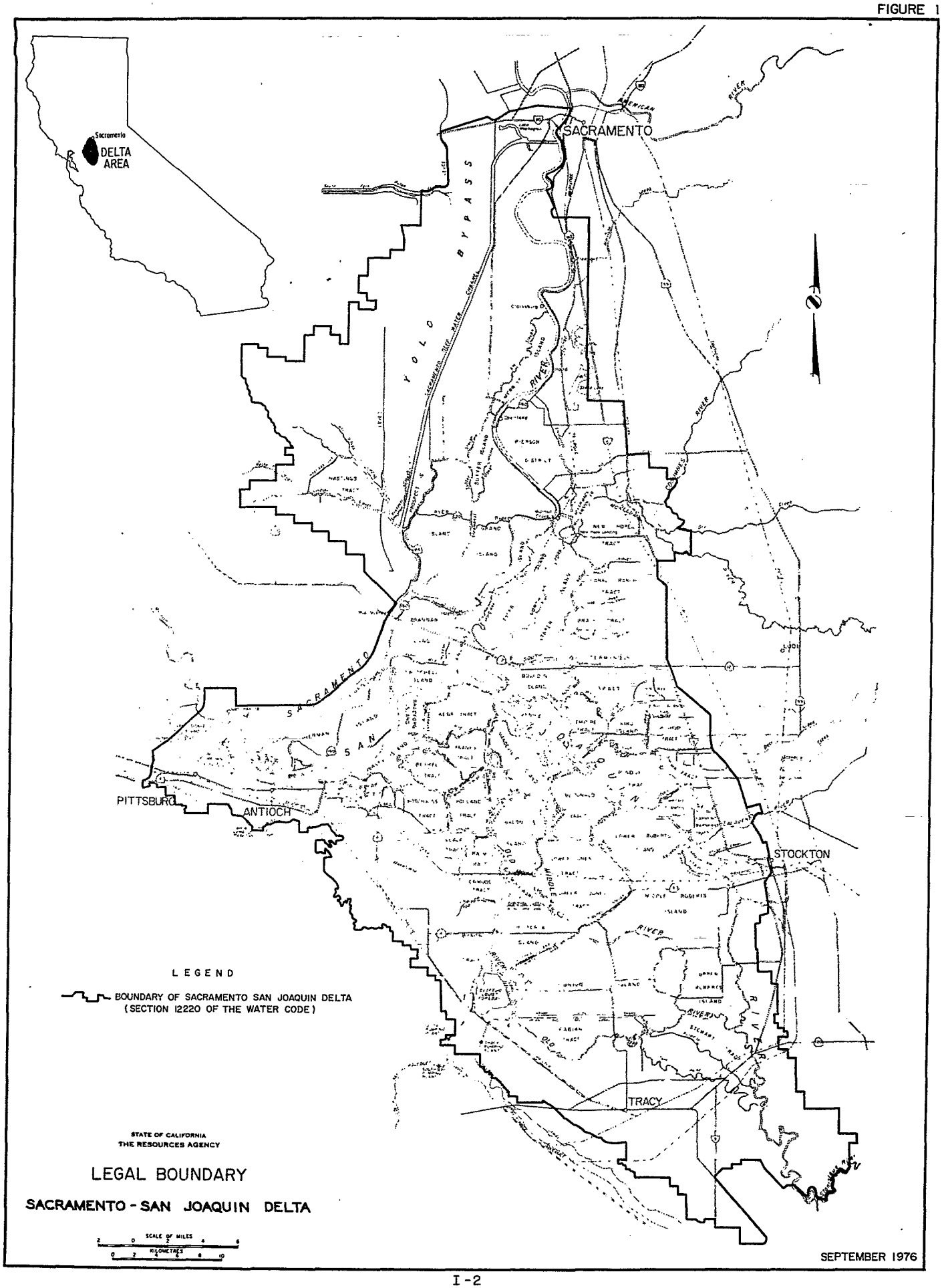
Most of the land in the Delta is near or below sea level, and an extensive network of levees has been built to protect the land from floods and tides. The Delta now contains about 60 leveed islands and tracts, and more than 700 miles of waterways surround these islands.

About 20 cities and towns are located in the Delta, and these are generally situated in the upland areas near the outer boundaries of the Delta and along the Sacramento River. No major cities are located entirely within the Delta; however, the legally defined Delta includes parts of Sacramento and Stockton. Smaller cities within the Delta are typified by Antioch, Pittsburg, Isleton and Rio Vista. To the west, the Delta opens onto San Francisco Bay and the heavily populated Bay Area. About 250,000 people live in the Delta. The legal boundaries of the Delta, shown in Figure 1, are described in Section 12220 of the California Water Code.

Because of the difficulties and high costs involved in the construction and maintenance of levee highways and bridges, the circuitous routes imposed by the island road system and the flood hazard, urban development has been slow in most of the Delta. The Delta is actually an obstruction to land transportation, and this condition has helped preserve its open space. Two major roads, Highways 4 and 12, bisect the Delta. Highway 160 follows the meandering course of the Sacramento River. Interstate 5 skirts the eastern side of the Delta. Other state highway routes traversing portions of the Delta are Routes 84, 113 and 220.

Transportation through the Delta is still most readily accomplished by boat. At present, the U. S. Army Corps of Engineers maintains 30-foot-deep ship channels to the ports of Sacramento and Stockton, and the channels enable ocean-going vessels to berth there. Both ports are important to commercial shipping; over six million tons of cargo move annually through the Delta.

FIGURE 1



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The Delta is not highly industrialized, but some heavy industry is found along its western border. Beneath the Delta lie some of California's most important natural gas fields. There are about 35 fields and they have produced more than 3.5 trillion cubic feet of gas. Imported and local natural gas are stored in strata under several of the Delta islands.

The Delta is an agricultural and recreational area of major significance to the nation. It is one of the most fertile areas in the United States, and agriculture is the Delta's primary industry. The annual harvest is valued at more than $275 million. Nearly all of the Delta lands are devoted to agriculture and the region is noted for its asparagus, pears, potatoes, celery and other truck crops.

Recreation is the second most important industry in the Delta and the region is a major attraction for people from the heavily populated urban centers of the San Francisco Bay Area, Sacramento and Stockton. The Delta waterways provide unique and attractive sites for fishing, boating, picnicking, camping, water sports and sightseeing.

B. PROBLEMS RELATED TO LAND USE AND TRANSPORTATION

1. Urban and Industrial Development

A major consideration of virtually all public planning for the Delta has been the enhancement of the region's food-producing capacity and the protection of it's agricultural and recreational lands. As is true elsewhere in California, however, agriculture and open space lands are threatened by other land uses.

In the Delta, urban encroachment has taken the form of expanding residential development primarily from Sacramento and Stockton, and new recreational communities. In addition, industrialization along the deep-water channels has been proposed, particularly in the western Delta.

2. Land Transportation

Current problems concerning transportation relate to land use, recreation and environment. Improved access could encourage scattered urbanization. The improvement of the trans-Delta transportation system would result in increased pressure for development.

With the completion of Interstate Highway 5, which runs along the eastern edge of the Delta, there will be growing pressure for urban development on farmland.

Although the roads are generally adequate for the Delta's current agricultural orientation, some access and recreational sites are not well served by the present road system. In the future, the highway system will be subjected to severe stress by recreational traffic, particularly on weekends, unless the system is improved or other means of transportation are developed and used (e.g. a water transportation system).

3. Water Transportation

The John F. Baldwin and Stockton Ship Channel projects extend from San Francisco Bay, through the Delta, to Stockton. These projects call for deepening the channel to 35 feet through the Delta. The projects have been authorized by Congress, but construction has been temporarily suspended pending resolution of complex environmental problems. The major problems involve the disposal of dredge spoils and the effects of deepening the channel on Delta outflow and salinity.

C. SOLUTIONS

1. Recommendations for Resolving Land Use Problems

a. All future planning and regulatory action in the Delta should recognize that the agricultural, open space and recreational resources of the Delta are of critical concern to the State.

b. Maximum use should be made of zoning and enforceable restrictions, such as Williamson Act contracts, to protect Delta agricultural lands and open space from urban encroachment.

c. Delta lands included in open space, agricultural and flood-hazard designations should be given the maximum regulatory protection.

d. Local governments should adopt zoning ordinances that assure that uses of land abutting Delta waterways are compatible with the Waterways Use Program (See Appendix A).

e. Levee-improvement programs should be planned so as not to encourage urban development on existing agricultural lands (See Chapter II).

f. Further extension of public-service facilities, particularly roads and sewers, should be timed and directed to prevent scattered urban development from unnecessarily encroaching on agricultural lands.

g. Landowners and Resource Conservation Districts should make maximum use of U. S. Department of Agriculture programs and funding to conserve the Delta soils.

2. Recommendations for Resolving Transportation Problems

a. After completion of I-5, no new freeways should be built in the Delta unless in-depth studies show conclusively that they are necessary and that the adverse environmental impacts will be minimal and adequately mitigated. Other road systems should be planned and developed so as to discourage urban sprawl into the Delta.

b. The Delta road system should be maintained and improved to serve present rural and recreational developments. Expansion of the road system should be allowed only to serve new urban developments within existing communities and new public recreational developments.

c. State and local governments should make a study of the feasibility, benefits and costs of a land and water transportation system that would provide additional access to existing towns and access to recreational sites in the Delta.

d. Deepening of the Delta ship channels should be carefully studied to ensure that the operation does not damage the Delta environment. Adequate mitigation should be required of any channel-deepening project that would have an adverse effect on environmental quality.

CHAPTER II: THE DELTA LEVEES

A. GENERAL DESCRIPTION OF THE LEVEES

The first Delta levees were built during the California gold rush by Chinese laborers. They used hand tools to reclaim the rich Delta soil for farming and to build levees to protect the land from flooding. Clamshell dredges were used later to excavate material from the channels to build higher and better levees.

Today the Delta levees serve many diverse uses. They provide flood protection for the Delta's cities and towns, agricultural lands, gas wells and utilities. The levees are essential to the Delta's transportation network because many roads are located on the levee crowns, and the levees protect other roadways as well as railways and airports from flooding. Levees are used by increasing number of picnickers, boaters, fishermen, campers, and sightseers, and the vegetation on the levees affords sanctuaries for wildlife and enhances the scenic and recreational qualities of the Delta. The levees also protect the quality of the water in the Delta by concentrating flows in channels and thereby controlling saltwater intrusion. The control of the salinity made possible by the levees also is essential to the maintenance of the large anadromous fish resources of California's Central Valley. Levees also are important to commercial shipping because they confine flows and help maintain navigation channels. In short, the levees are vital to the continued existence of the Delta as we know it today.

Most of the levees in the Delta are on privately owned land. Easements have been obtained in some areas for levee construction and maintenance, but only a few levees are on land that has been acquired in fee title by public agencies.

Delta levees are termed either as project levees or nonproject levees.

Project levees, which make up about 15 percent of the total levee system, were either built, rebuilt, or adopted as federal flood control project levees. They are maintained by local districts or by the State in accordance with federal standards. Most of the project levees are in the northern and southern ends of the Delta.

Nonproject levees are termed either as private or direct-agreement levees.

Private levees, which make up 75 percent of the system, were privately constructed and are maintained by landowners or

local districts. These levees are not required by law to be maintained to any particular standards. In some instances, however, the standards set for project levees serve as a guide for the owners of private levees or for the local levee maintaining agencies. Nearly all of the levees in the Central Delta are private levees.

Direct-agreement levees, which make up the remaining 10 percent are either part of a navigation project or were rebuilt by the federal government after a flood. These levees must be maintained to at least the constructed or rehabilitated condition, but they do not have to be maintained to project levee standards. Most of these levees are along the San Joaquin River.

B. PROBLEMS RELATED TO LEVEES

Many problems must be resolved if the Delta levees are to accommodate the diverse and sometimes conflicting uses to which they are increasingly being subjected. Major problems involve inadequate flood protection, inadequate levee maintenance, destruction of levee vegetation, inadequate public access and levee recreational facilities and multiple-purpose use of single-purpose levees. Other problems include, (1) Inadequate financing for the development and maintenance of true multiple-purpose levees, (2) Earthquake hazards, and (3) The lack of a regional land use plan which is based upon the extent and level of flood protection in the various parts of the Delta.

1. Flood Protection

Levee failures have been a problem in the Delta since the first levees were built there. Most of the islands and tracts have been inundated at least once since reclamation began, and some have been flooded several times. During the past 75 years, more than 100 islands and tracts have been flooded excluding the islands in the Yolo Bypass.

Flood protection provided by the Delta levee system is generally inadequate, except for areas protected by project levees. Many of the nonproject levees have stability problems, due mainly to poor foundation materials, insufficient height and cross-section, erosion and inadequate maintenance.

Most nonproject levees are located in the Central Delta where there are peat soils. As the peat soils on an island erode and subside, the increased water pressure on the levee may rupture a portion of the levee and cause flooding or water may overtop the levee due to levee settlement.

Most of the levees lack sufficient freeboard during high-water periods. Sometimes wind-driven waves coincide with high water and the levees are overtopped, causing flooding. Levees are also eroded by flood flows, tidal flows, and wavewash from wind and boats. Many miles of levees have deteriorated from these causes. If one island is flooded and its levees destroyed, the levees on adjacent islands become more vulnerable, particularly to wind and wave erosion.

The deterioration of the Delta levees generally has had an adverse effect on the area. Flooding has caused economic losses to agriculture. Cities and towns have been flooded, wildlife habitat has been destroyed and recreational opportunities have been significantly reduced. Levee failures also have resulted in significant decreases in the anadromous fishery resources of the Central Valley.

2. Levee Maintenance

Delta levees are maintained by a variety of agencies, districts and landowners. Until 1973, all levee maintenance costs were paid by those protected by the levees. Since there are no overall area-wide nonproject levee maintenance standards, the quality of maintenance of each nonproject levee depends upon the standards set by the local maintenance agency for that levee. Few of the levees are maintained to provide a high level of flood protection or to preserve levee vegetation because either would increase costs.

3. Levee Vegetation

Levees with heavy vegetation are often difficult and costly to maintain to adequate flood control standards. The costs of maintaining levees with trees, shrubs and grasses is about double the cost of maintaining "stripped" levees. Consequently, trees, shrubs and grasses have been removed from many of the levees. Furthermore, erosion of the levees and levee berms by flood flows, tidal flows, wind waves and boat wakes also has resulted in a loss of levee vegetation. The reduced vegetative cover has adversely affected the food supply and habitats of fish and wildlife, the natural beauty of the area and recreational opportunities.

4. Public Access and Recreational Facilities

The public demand for access to Delta levees and waterways is steadily increasing. Many of the Delta levees, islands, and tracts are privately owned; consequently, public vehicular access to the levees is limited and recreationists using

the levees often are trespassing. Furthermore, there are insufficient levee recreational facilities and parking sites. Policing of the private property used by recreationists is difficult because of the remoteness of much of the Delta, the difficult access for enforcement purposes and the widespread recreational use of the Delta. These factors lead to a number of problems including damage to the levee structure and levee facing, destruction of levee vegetation, pollution of the Delta waterways, littering and vandalism on private property and improper and unsafe parking.

5. Multiple-Purpose Use of Single-Purpose Levees

The Delta levees were constructed to reclaim land and protect it from flooding. Most levees are still maintained only for flood protection. Today, however, the levees are being called upon to serve many diverse uses. Any plan to develop multiple-purpose Delta levees involves difficult trade offs. A solution that completely satisfies all the competing interests on all levees is unlikely.

Trees, shrubs and grasses on the levees are aesthetically pleasing and provide shade. The cover provides an excellent habitat for wildlife and may provide some erosion control above the tidal zone. Vegetation, however, increases the problems and costs of levee inspection and maintenance. Additionally, although vegetation serves as a habitat for wildlife, holes dug in the levees by burrowing animals can cause levee failures. Large trees near the water's edge can topple over during high winds, accelerating erosion or causing levee failure.

Recreational uses of the levee may disturb wildlife. Erosion of recreational trails and holes dug in the levee by recreationists as well as removal of rock riprap by recreationists may eventually cause levee failure unless adequate maintenance is provided. Levees and levee berms are subjected to erosion from boat wakes as well as from natural causes. As recreational boat traffic on the Delta channels and recreational use of levees increase, erosion repair will become increasingly difficult and costly.

C. SOLUTIONS

1. Present Programs

Three statutes enacted in 1973 provide for partial State funding of levee construction and maintenance and encourage the retention of vegetation on the levees. Senate Bill 541 (Sections 12988-12991, California Water Code) provides for reimbursement of a portion of the maintenance costs of

AB 541 AB 214

nonproject levees in the Delta. Assembly Bill 214 (Sections 8450-8457, California Water Code) appropriates $200,000 annually from the State General Fund to reimburse the maintaining agencies for 50 percent of the increased costs of planting and retaining vegetation for wildlife, recreation, scenic and aesthetic qualities on project levees. Assembly Bill 641 (Sections 12840-12849, California Water Code) declares that flood control and watershed protection projects shall provide full potential for enhancement of fish and wildlife as well as recreation opportunities for the public. It also provides that the State shall pay 50 percent of the nonfederal capital costs of the recreation and fish and wildlife enhancement features of most legislatively authorized flood control and watershed protection projects.

The 1973 Statutes recognize the public benefits provided by the Delta levees, but the Statutes do not provide for a complete solution of the levee problems. Although the funds provided by the Statutes can assist in improving the Delta levees, the appropriations in themselves do not assure a comprehensive program of levee construction and maintenance to provide for both structural and environmental benefits. Furthermore, the funds can be decreased or eliminated and the demand for funds can exceed the available funding.

2. Studies and Reports

In September 1973, the Department of Water Resources completed an interim report entitled "Delta Levees, What is Their Future?". The report was prepared in response to Senate Concurrent Resolution 151 of the 1969 Legislative Session, (Resolutions 1969, Chapter 297) which requested the Department to study the problems related to Delta levees and to develop a comprehensive plan of action to resolve the problems. The report presented four alternative courses of action for the Delta levees which ranged from no improvement to extensive improvement.

Public meetings were held in Sacramento, Isleton, Los Angeles, Stockton and Oakland to obtain comments on the alternative courses of action. Written comments also were received. Nearly all of those commenting stated that the character of the Delta, including its channel configuration, should be preserved essentially as it is today, and that better flood control should be provided for the Delta by developing improved multiple-purpose levees.

With those goals in mind, the Department of Water Resources completed its studies and formulated a plan of improvement for the levees. The plan was published in May 1975, as Department of Water Resources Bulletin No. 192, "Plan for Improvement of the Delta Levees". Implementation of the plan would benefit both the State and the Delta by improving flood control, providing open space and recreational opportunities, and preserving and enhancing the scenic quality and wildlife values of the Delta.

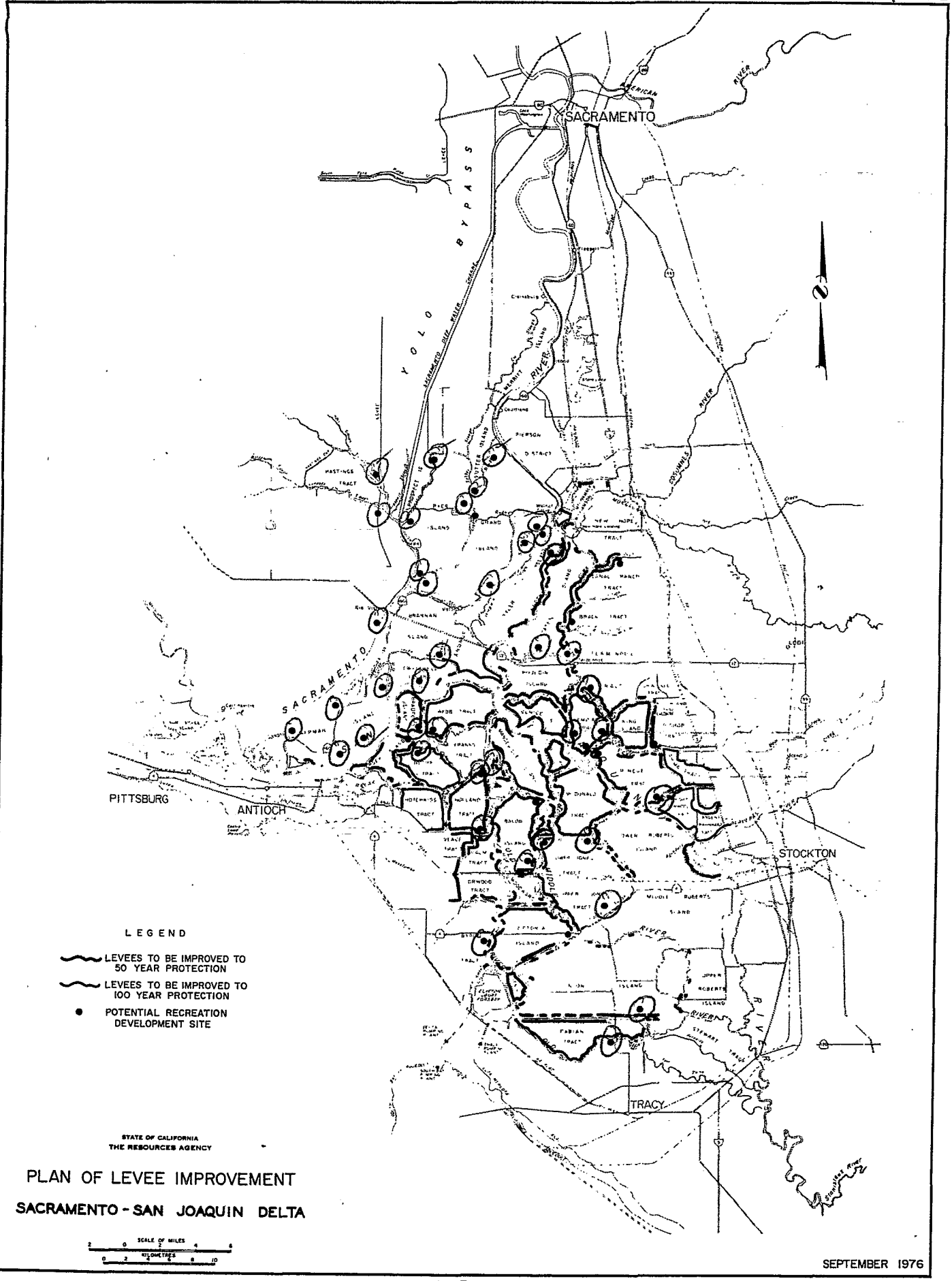
The Plan, shown in Figure 2, would provide for multiple-purpose improvement of 310 miles of levees that surround portions of 55 islands and tracts in the Delta. About 45 miles of these levees which are on islands with urban centers would be improved to provide 100-year flood[1/] protection, which is considered adequate for some urban uses. The remaining 265 miles would be improved to provide 50-year flood protection, which is adequate for agricultural use but not for urban use.

The improved levees would be planted with vegetation to provide wildlife habitat and to improve the aesthetics of the levees. The vegetation would be planted on the waterside slopes of the levees between the top of the riprap and the crowns of the levees. Where the flood carrying capacity of the channels would not be threatened, vegetation would be allowed to remain on existing channel berms.

Public access and recreation facilities would be included as integral features of the plan. Day-use recreation facilities would be constructed at approximately 50 sites. Potential recreation sites were identified in the 1973 Delta Master Recreation Plan and are shown in Figure 2. About 40 of these would be fishing access sites. These sites would cover from one to five acres, and would include parking and sanitary facilities. The remaining sites would range from five to ten acres in size, and would include boat launching ramps, parking areas, picnic facilities, fresh water supply and sanitary facilities. Where feasible, the sites would be purchased in fee and the recreational features would become an integral part of the levee system. Access corridors between the Delta channels and the public roads would be included where necessary. Access to some of the recreation sites could be limited to boaters, bicyclists and hikers.

1/ A flood having an average frequency of occurrence of once in 100 years, although it may occur in any year.

FIGURE 2



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The development of the recreation sites would not only provide facilities for recreationists but also would tend to concentrate recreation at sites on public land, thereby reducing some of the present problems such as trespassing and littering on private property, improper parking on the levees, damage to the levees by recreationists, waterway pollution, difficult policing and disturbance of wildlife and wildlife habitat by recreationists. The selection of the specific recreation sites to be developed and the type of facilities to be constructed at each site as well as the timing of development would be determined in coordination with appropriate federal, state and county agencies and local districts during more definitive planning studies.

The project would be constructed over a 20-year period. The estimated capital cost of the project at 1974 price levels was $128 million. The estimated total annual costs including repayment of capital costs, operation, maintenance and replacement at that time was $5.5 million. As proposed in Bulletin No. 192, the capital costs would be shared 50 percent by the federal government, 30 percent by the State and 20 percent by the counties and local reclamation and levee maintenance districts. The annual operation and maintenance costs would be the responsibility of State and local interests. Implementation of the plan would provide benefits totaling about $7 million annually due to recreation enhancement, flood damage reduction, land enhancement, erosion reduction and water quality and roadway improvements.

The U. S. Army Corps of Engineers has completed about one year of a 4-1/2 year study of Delta levees. This study is being conducted in coordination with the Department of Water Resources and can lead to federal participation in the levee program.

3. Legislation

As a result of the recommendations in Bulletin No. 192, the California Legislature passed SB 1390, the Nejedly-Mobley Delta Levees Act, during the 1976 Session. The Act essentially carries out the recommendations of Bulletin No. 192. It approves the plan shown in Bulletin No. 192 as a conceptual plan for improving the Delta levees, it authorizes the Department of Water Resources to prepare detailed plans and specifications for these improvements, and it requires the Department to report to the Legislature by specific dates its recommendations concerning the improvements as well as the status of the levee improvement program. The Act also permits the Department, after entering into a cost sharing agreement with a local agency, to construct a pilot project for a levee in critical need of improvement. Finally, the

bill appropriates $200,000 to continue reimbursing local districts for a portion of the maintenance costs of non-project levees under Part 9 of Division 6 of the Water Code, Section 12988-12991. The Act requires that local plans for such maintenance and improvements be compatible with Bulletin No. 192 and take into account the most recently updated Delta Master Recreation Plan.

4. Recommendations

   a. The Department of Water Resources should carry out its recently authorized responsibilities under the Nejedly-Mobley Delta Levees Act. To accomplish this, the Department should prepare detailed plans and specifications for levee improvements in the Delta utilizing Department of Water Resources Bulletin No. 192 as a conceptual plan, implement a pilot levee project in an area in critical need of improvement after consummating a cost sharing agreement with a local agency, and report to the Legislature by specified dates on the levee improvement program.

   b. Local agency plans for maintenance and improvement of Delta levees should be compatible with the plans shown in Department of Water Resources Bulletin No. 192 and the Delta Master Recreation Plan.

   c. The Department of Water Resources and the U. S. Army Corps of Engineers through their new studies should ensure that both the State and federal levee standards for the Delta permit a maximum of vegetation to be retained on the levees consistent with levee stability, navigation and the necessary flood carrying capacity of the channels. State fiscal assistance program which encourage the retention and planting of vegetation on levees, should give priority to the retention of levee vegetation in "Natural Areas" which are defined in Appendix A and shown on the Waterways Use Program Map. The U. S. Army Corps of Engineers, special districts and local governments should ensure that their regulations, actions, policies and fiscal programs are consistent with that objective.

CHAPTER III: RECREATION IN THE DELTA

A. GENERAL DESCRIPTION OF THE RECREATION

The Delta is, and will continue to be, a popular recreation area. It is close to several major metropolitan areas and parts of it are readily accessible. It contains one of the largest recreational waterways in the western United States. Its temperate climate allows year-round use; however, the major recreation season extends from about Memorial Day through the first week in September. These factors plus the attractive setting and the excellent sports fishery contribute to the Delta's constantly growing popularity and the demand there for a wide variety of recreational activities.

Recreation in the Delta can be grouped into water-dependent and land-dependent uses. The 1975 projected potential participation[1/] in the Delta's water-dependent and land-dependent activities, assuming that facilities were available to accommodate them, is shown in Table 1.

Figure 3 shows the projected recreation participation from 1975 to 2000. Projected data indicate that the demand for recreation in the Delta should more than double during the next 25 years. Additional factors that are likely to increase demand for recreation in the Delta are the availability and cost of petroleum products. Shortages and high prices should cause metropolitan Californians to seek recreational opportunities closer to home.

The Delta is a major recreation resource in California, and the existing recreation activities are significant to the Delta's economy. The determination of the type and degree of recreational activities that can be accommodated in the future without adverse consequences depends upon a variety of factors, including the following: (1) The number of persons that can be accommodated for specific recreational activities without adversely affecting the area's environment; (2) The effect that various activities will have upon each other (i.e., can a variety of high-quality recreation experiences occur simultaneously?); (3) The possibility of accommodating some activities at locations other than the Delta; and (4) Completion of tasks by governmental agencies and the private sector to provide for recreation activities (i.e., acquisition, development, etc.)

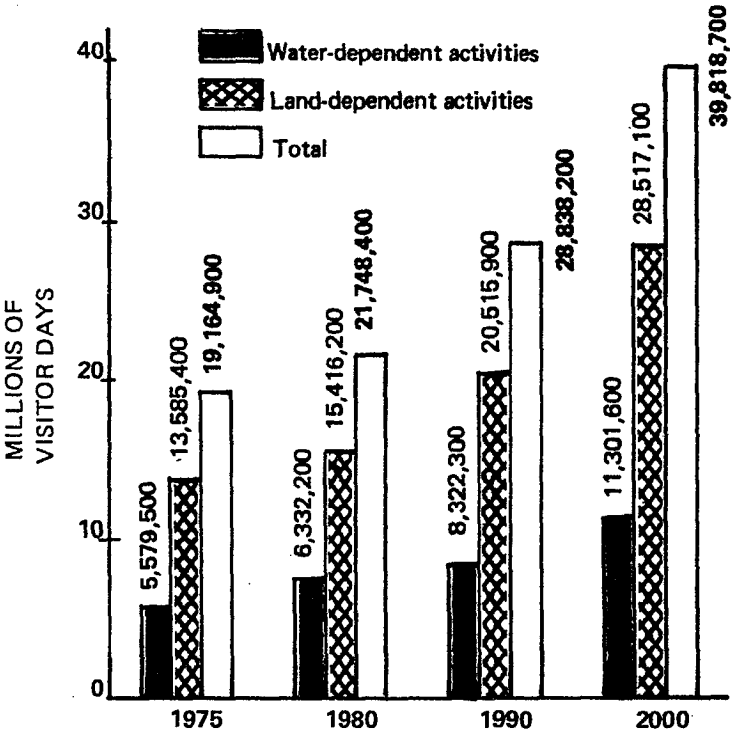
1/ Estimates in this report of potential participation by individuals in Delta recreation are based on a modification of the State Park and Recreation Information System (PARIS) model. That model is currently used by the Department of Parks and Recreation to determine projected recreation demands in California and a description of the methodology is available from the Grants and Statewide Studies Division, Department of Parks and Recreation.

TABLE 1
POTENTIAL PARTICIPATION[2] IN WATER–BASED AND LAND-BASED RECREATION ACTIVITIES IN THE DELTA, 1975

	Visitor Days	% of Total
Water-Dependent Activities		
Swimming	3,604,500	
Boating	796,300	
Fishing	710,000	
Waterskiing	374,600	
Sailing and canoeing	94,100	
Subtotal	5,579,500	29%
Land-Dependent Activities		
Walking for pleasure	3,115,700	
Playing outdoor sports, games	2,407,000	
Driving for pleasure	2,290,900	
Bicycling	2,037,700	
Sightseeing	1,138,000	
Attending outdoor sports events	745,900	
Picnicking	470,800	
Camping	321,900	
Nature walks	306,700	
Horseback riding	245,800	
Hunting	110,000	
Hiking	96,200	
Attending outdoor concerts, dramas	96,100	
Miscellaneous activities	202,700	
Subtotal	13,585,400	71%
Activities Total	19,164,900	100%

2 Potential participation measures the amount of use that would occur if facilities were available to accommodate such use. It is not a measure of existing use or attendance.

FIGURE 3
POTENTIAL PARTICIPATION[2] IN RECREATION ACTIVITIES, 1975 to 2000



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B. PROBLEMS RELATED TO RECREATION

The major recreation problems in the Delta center around conflicting types of recreational activities, unsatisfactory public access, and inadequate facilities for public recreation.

1. Conflicting Recreational Activities

Recreational use of the Delta's waterways is essentially unplanned and unregulated. Conflicting types of activities spoil the recreational experience of many visitors, and some activities are serious threats to public safety and to private property.

For example, speedboat operators, water skiers, and fishermen often encroach on each other's activities. Also, the wakes created by boaters sometimes interfere with fishing and cruising. Local law enforcement officials have had varying success in coping with these problems.

Many docks have been built by lessees and squatters adjacent to leveed islands and nonleveed channel islands. This type of development decreases the available public boater-destination sites and anchorages and, in many instances, slows boat traffic.

These waterways use problems are more fully discussed in Chapter IV.

2. Inadequate Public Access and Recreational Facilities

Because of the high costs of bridges between the islands and the difficulty and high cost of building and maintaining roadways on peat soils and levees, the public road system provides only limited access for recreationists. There are few places for cars to stop and park along the generally narrow public roads. Many of the roads are on levee crowns. Recreationists can drive on public roads that parallel some of the public waterways, but they often are trespassing on private land if they attempt to gain access to the waterway. Some public bridges in the Delta are situated where public roads cross public waterways, but provisions for parking and access to the water are limited.

With the exception of the few county facilities, the Brannan Island State Recreation Area, Clifton Court Forebay and some public launching ramps, there is a lack of adequate public recreational facilities along the 700 miles of navigable public waterways. Riding, hiking and bicycle trails in the Delta are few in number because of the lack of public lands, the high cost of building bridges between islands, the narrow levees and the scarcity of paved roads.

Access for bank fishing in the Delta is limited. Although the Wildlife Conservation Board has developed two bank fishing sites and one fishing pier (the latter at Antioch), much of the shore fishing involves trespass, and most of the bank fishing areas now used by the public could be closed at the option of the landowner or reclamation district.

During the 1974-75 hunting season, about 175 private duck clubs and 25 pheasant clubs were operating in the Delta. Although these private clubs provide hunting for only a limited number of people, they maintain vital wetlands habitat for wildlife. Few opportunities are available for the non-club hunter. Hunting on public land is limited to Lower Sherman Island and Miner Slough (wildlife areas operated by the Department of Fish and Game) and to Clifton Court Forebay (a unit of the State Water Project where the Departments of Fish and Game and Water Resources have cooperated to provide waterfowl hunting). On public waterways, only a relatively poor grade of pass and decoy shooting is available. The present recreational use of Lower Sherman Island is heavy, and there is an increasing demand for similar recreational facilities. The current demand for hunting in the Delta is approximately 110,000 visitor days annually, and it may double in the next 25 years.

About 260,000 visitors used the facilities and areas provided by the Department of Parks and Recreation in the Delta during fiscal year 1974-75. These include facilities at Brannan Island that have been developed to approximately 70 percent of their potential, and Franks Tract, that has no developed facilities. Even if these sites were fully developed and used to capacity, Brannan Island and Franks Tract would be able to accommodate only about nine percent of the expected Delta recreationists in 1990.

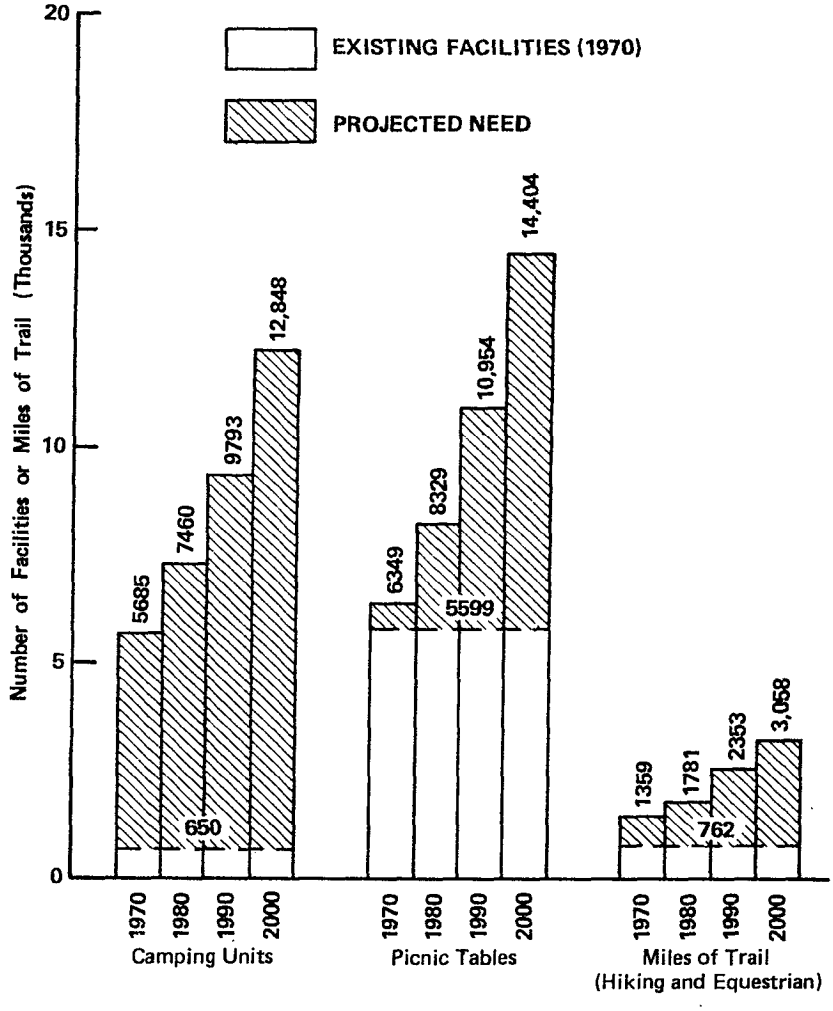
Detailed data pertaining to current recreational use in the Delta are not available to adequately assess the effect of major public works projects on recreational use or to assess the environmental impact of the numerous small public and private projects, such as marinas and other commercial establishments.

Furthermore, programs and facilities to adequately preserve and interpret the Delta's historic and cultural resources are inadequate. For example, the historic town of Locke, which has been identified in the National Register of Historic Places at the State level of significance, is in danger of being lost because it lacks proper fire protection.

Based on the projected PARIS recreation-demand information, estimates of the facilities needed can be derived for

each county in the State. Since these estimates are based on a 1970 inventory, the data should be used only as a general indication of the needs. The estimated needs for camping sites, picnic sites and trails for the counties (Contra Costa, Sacramento, San Joaquin, Solano and Yolo) are shown in Figure 4.

FIGURE 4
COUNTY[3] RECREATIONAL FACILITIES



The current intensive use of boat-in sites at Mandeville Tip and Brannan Island indicates the need for additional boater anchorage and destination sites.

3/ Contra Costa, Sacramento, San Joaquin, Solano and Yolo Counties

C. RECREATIONAL FACILITIES PROPOSED OR UNDER STUDY

1. Federal Projects

The U. S. Army Corps of Engineers is currently studying five projects that could provide recreation facilities in the Delta: Morrison Creek Stream Group Project; Stockton Deep Water Ship Channel Project; Sacramento River Deep Water Ship Channel Project; Sacramento-San Joaquin Delta Project; and the Sacramento River Bank Protection Project. The Corps of Engineers is coordinating its activities on these projects with State and local agencies.

a. Morrison Creek Stream Project

The proposed Morrison Creek Stream Project would provide for: storage and transport of floodflows in the Morrison Creek Stream Group Basin and the discharge of these flows at adequate rates to downstream channels; project-related outdoor recreation opportunities readily accessible to residents of large urban centers; and the preservation of open space and a greenbelt in the Beach-Stone Lakes area (conforming to the Sacramento County General Plan).

The Beach-Stone Lakes Basin, with its natural lakes, marshland and riparian areas, is one of the few remaining areas in the Central Valley with a thriving and diverse wildlife community. Preservation of this basin is of special importance because of its relation to the Delta Meadows and Cosumnes River Project and its proximity to urban Sacramento. Funds for purchase of the Stone Lakes Basin have been provided by Sacramento County and the State Legislature.

b. Stockton Deep Water Ship Channel Project

The Stockton Deep Water Ship Channel Project, extending from Suisun Bay to the Port of Stockton provides for the deepening of the existing ship channel to 35 feet. Dredged material removed for channel deepening would be disposed of at several sites along the ship channel and at the proposed cutoff through False River. Sites for the disposal of dredged material could be developed as public recreation sites, and recreational facilities could be developed if State, county and city agencies participated in their construction and operation. The project has been authorized by Congress and construction has begun; however, work has been temporarily suspended pending completion

of post-authorization planning studies and resolution of complex environmental problems.

The Department of Fish and Game is interested in using Donlan and Venice Cut Islands as wildlife areas for waterfowl, upland game and other species. The proper placement of dredged material along with habitat improvements would help develop these areas. The islands would be managed similarly to nearby Sherman Island.

The Departments of Parks and Recreation and Navigation and Ocean Development are interested in providing recreation improvements on three dredged-material-disposal sites at the Franks Tract State Recreation Area. Dredged sand from the navigation project could be used to build up beach areas next to the northern levee remnants of Franks Tract. This would separate the ship channel from the open water recreation area and prevent conflicts with recreational boating.

Included in this plan is the deposition of dredged material on approximately 400 acres on the south side of Franks Tract (at the northern end of Holland Tract). The latter site could provide recreation facilities comparable to the Brannan Island State Recreation Area and would establish the required base to operate the other proposed recreation facilities related to the Franks Tract State Recreation Area. Dredged material, to be deposited on the tip of Mandeville Island, could also be used for the development of boat-destination facilities.

The Department of Navigation and Ocean Development also is interested in the development of boating facilities at dredged-material-disposal sites. The facilities it proposes to develop at Roberts and Hog Islands would be operated and maintained by San Joaquin County.

The East Bay Regional Park District plans to participate in developments at a dredged-material-disposal site next to the southwest shore of the Big Break area, and the City of Antioch plans to participate in developments on a nearby dredged-material-disposal site.

c. Sacramento River Deep Water Ship Channel Project and Investigation

The existing Sacramento Deep Water Channel, with its wide berms and banks, offers excellent

opportunities for riding, hiking and biking trails; public access for bank fishing; and the development of wildlife habitat. Development of this area for recreational uses and wildlife features is presently being negotiated.

A feasibility study of deepening the existing 30-foot channel was begun by the U. S. Corps of Engineers in 1970. Recreation improvement and fish and wildlife management, together with commercial navigation, are being considered in this study. The study is scheduled for completion in 1977, but any project the study may recommend is not likely to be completed before 1985.

d. Sacramento-San Joaquin Delta Investigation

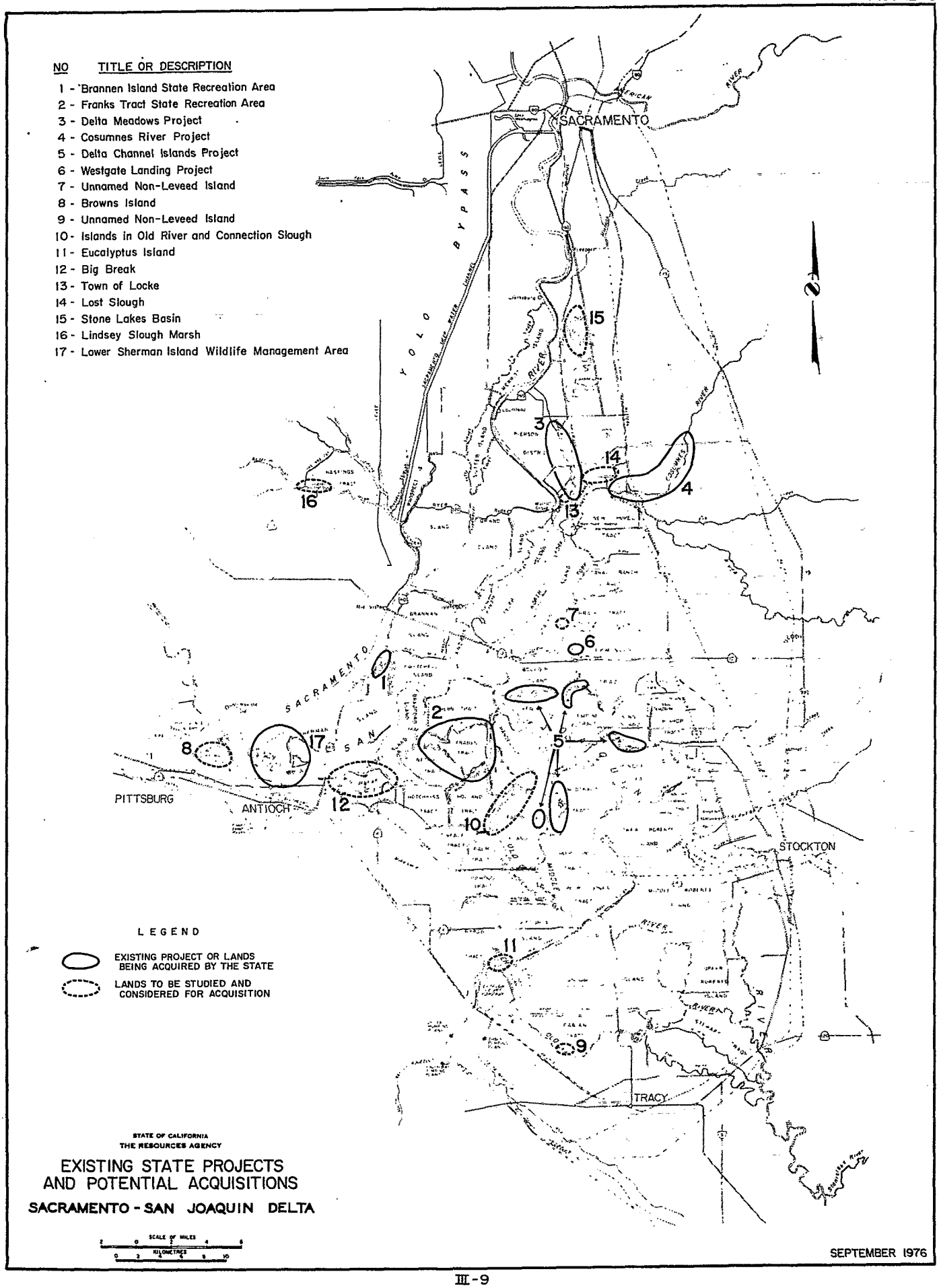
Investigation of flood problems and recreation needs in the Sacramento-San Joaquin Delta was resumed by the U. S. Corps of Engineers in 1975. The studies, which are being coordinated with the State, are expected to provide for levee improvements, and if feasible, other means of flood control, resolution of water quality problems, public access and recreation facilities. A preliminary concept developed by the Corps in 1966 identified a joint federal-nonfederal program with $50 million for development of recreation improvements at 35 locations. Chapter II of this Delta Master Recreation Plan provides a description of the State's plan for the improvement of the Delta levees.

e. Sacramento River Bank Protection Project

The existing Sacramento River Bank Protection Project includes recreation facilities at Hogback Island on Steamboat Slough, at Garcia Bend on the Sacramento River, and at two locations on Georgiana Slough. These facilities have boat launching ramps, parking areas and access roads. Agencies of local government, which operate and maintain the sites, also have provided water supplies, restrooms and day use facilities. Other sites with recreation potential related to this project will be considered for future development as agencies, other than federal, agree to participate.

2. State Projects

Figure 5 indicates the location of the following State projects that would provide recreation and wildlife features in the Delta.



a. Cosumnes River and Channel Islands Projects

Land for the proposed Cosumnes River Project includes natural meadows interspersed with valley oak and dense riparian vegetation. The area has outstanding wildlife habitat. Most of the channel islands within the area of the project contain tule marsh and significant riparian vegetation.

The acquisitions entailed in the Cosumnes River and Channel Islands Projects are currently funded from the State Beach, Park, Recreational and Historical Facilities Bond Act of 1974 (Section 5096.71 et. seq., Public Resources Code).

Both the Cosumnes River and Channel Islands Projects will be devoted primarily to the preservation of significant examples of the natural environment and the preservation of recreational opportunities. Future developments at the Cosumnes River Project could include camping, picnicking, hiking, bicycling, swimming, fishing, canoeing and nature study. Future development of selected Channel Islands would probably consist of sites where boaters could camp overnight. However, developments at either project would depend on the results of a resource inventory, public hearings and approval of a Resource Management and General Development Plan.

b. Delta Meadows and Old River Island Projects

Most of the lands for the proposed Delta Meadows and Cosumnes River Projects encompass the remains of the original Delta wilderness. Recreational activities in the Delta Meadows would be similar to those in the Cosumnes River Project. Planning and development of the Delta Meadows, Cosumnes River and the Stone-Lakes Basin will be coordinated to provide the maximum public benefit consistent with preservation of their natural characteristics.

Funds were provided for acquiring the Delta Meadows and Old River Island in 1966. Delta Meadows has not been purchased yet due to difficulties encountered in determining the State's ownership of the tidal lands.

The San Joaquin County Board of Supervisors held a public hearing in September 1975 and rescinded

support of the Old River Island Project. Due to this decision and to the lack of local support, the Department of Parks and Recreation expects to terminate the project. Funds already appropriated will revert back to the 1964 State Park Bond account for use on some other project, not necessarily in the Sacramento-San Joaquin Delta.

c. Franks Tract State Recreation Area

The existing Franks Tract State Recreation Area contains 3,531 acres, of which all but 330 acres (in the Little Franks Tract) are under water. Little Franks Tract is currently being evaluated for possible reclassification to Natural Preserve status.4/ Future developments, if the reclassification occurs, would be limited to perimeter trails and to some dry-use facilities. Recreation areas related to Franks Tract State Recreation Area are proposed in conjunction with federal Stockton Deep Water Ship Channel.

d. Delta Water Facility

The Department of Water Resources is studying alternative means of conveying water south across the Delta while, at the same time, protecting and enhancing the Delta environment. Planning of the Delta Water Facility is being coordinated with other projects in the Delta. The project could provide recreation facilities, protect and enhance fish and wildlife resources and improve the flood-carrying capacity of the Delta channels.

A draft Environmental Impact Report on a proposed Delta Water Facility -- the Peripheral Canal -- was published in August 1974. Since mid-1975, as part of the environmental review process, the Department of Water Resources has been evaluating alternatives to the Peripheral Canal, and a specific facility has not been selected.

e. Westgate Landing Boat Anchorage and Pittsburg Fishing Pier

The proposed Westgate Landing Project consists of about 16 acres on three nonleveed channel islands on the South Fork of the Mokelumne River. The Department of Navigation and Ocean Development project will stabilize, elevate and revegetate one of the islands, develop beaches and create a

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4/ Defined in Section 5001.5, Public Resources Code.

day-use and overnight-anchorage for boats if a local agency agrees to operate and maintain the facility.

The Wildlife Conservation Board has budgeted for, and plans to build within five years, a fishing pier at Pittsburg in Contra Costa County.

f. Lower Sherman Island

At Lower Sherman Island hunting opportunities may be expanded by the Department of Fish and Game in the next few years. Tule and cattail stands can be opened by burning and by pothole blasting. Channels can be cut into the old spoil areas and new potholes can be excavated. Dense blackberry thickets can be opened and rejuvenated by burning.

Public access can be improved by channel cleaning and marking. Walkways can be constructed to pothole areas where water depths or soft soils prevent access on foot.

g. Marsh Area at the Junction of Miner Slough and the Sacramento Deep Water Channel

Because of a 1972 agreement between the Sacramento and San Joaquin Drainage District (State Reclamation Board) and the Department of Fish and Game, the Department of Fish and Game now controls and manages 36.5 acres of this marsh area; however, there are no plans to acquire additional acreage at this location.

D. SOLUTIONS

1. Recommendations for Resolving Problems of Conflicting Activities

a. The Delta Master Recreation Plan should be adopted by the Legislature and Delta counties; and the Waterways Use Program described in Appendix A should be implemented through legislation and enforced by State and local agencies and complied with by federal agencies.

b. Local governments, in coordination with the Department of Navigation and Ocean Development, should evaluate methods of establishing a coordinated Delta boat patrol for better enforcement of boating safety and waterway use regulations.

2. Recommendations for Improving Access and Recreational Facilities

a. Subject to provisions for the adequate control of trespass, litter and sanitation, recreation access sites, boater-destination sites and appropriate recreation facilities should be established as integral elements of proposed federal and State flood control, water conveyance and navigation projects. Controlled public access easements to selected potential recreation sites and waterways should be strongly considered as a condition for expending public funds on the Delta levees.

b. A study should be made to determine the best methods controlling trespass, litter and sanitation at recreation access sites and facilities established as elements of federal and State flood control, water conveyance and navigation projects. Specifically, the operation and maintenance problems should be addressed.

c. A detailed survey should be made by the Department of Water Resources in coordination with other governmental agencies and the private sector to determine the current level of recreational use and future needs in the Delta. This detailed survey would be the basis for selecting recreation development sites; determining the types of development needed; and staging, sizing and design of the needed facilities for the Delta.

d. The State Lands Commission should give priority to the identification of the ownership of lands in the Delta that have been funded for state acquisition (such as Delta Meadows and the Cosumnes River and Channel Islands Projects).

e. After acquisition of lands for the Delta Meadows, Cosumnes River and Channel Islands Projects, which should be given priority, the Department of Parks and Recreation, in coordination with appropriate agencies and public and private organizations, should proceed to develop recreational facilities deemed acceptable after public hearings.

f. Upon selection of a Delta Water Facility, the Department of Water Resources should reinitiate the formulation of the recreation and wildlife features of the selected project in coordination with other governmental agencies and private organizations.

g. Further fishing access may also be provided through implementation of Section 84.5, 991 and 1809 of the Streets and Highways Code which require the use of design hearings for State highway projects that involve construction of a new bridge across a navigable river. This process would require a report on the feasibility of providing public access to the water for recreational purposes. Furthermore, before a new bridge can be constructed on a county highway or city street, the responsible agency must hold a public hearing and issue a report on the feasibility of providing public access to the water. The various interested State and local agencies should cooperate in making effective use of these provisions.

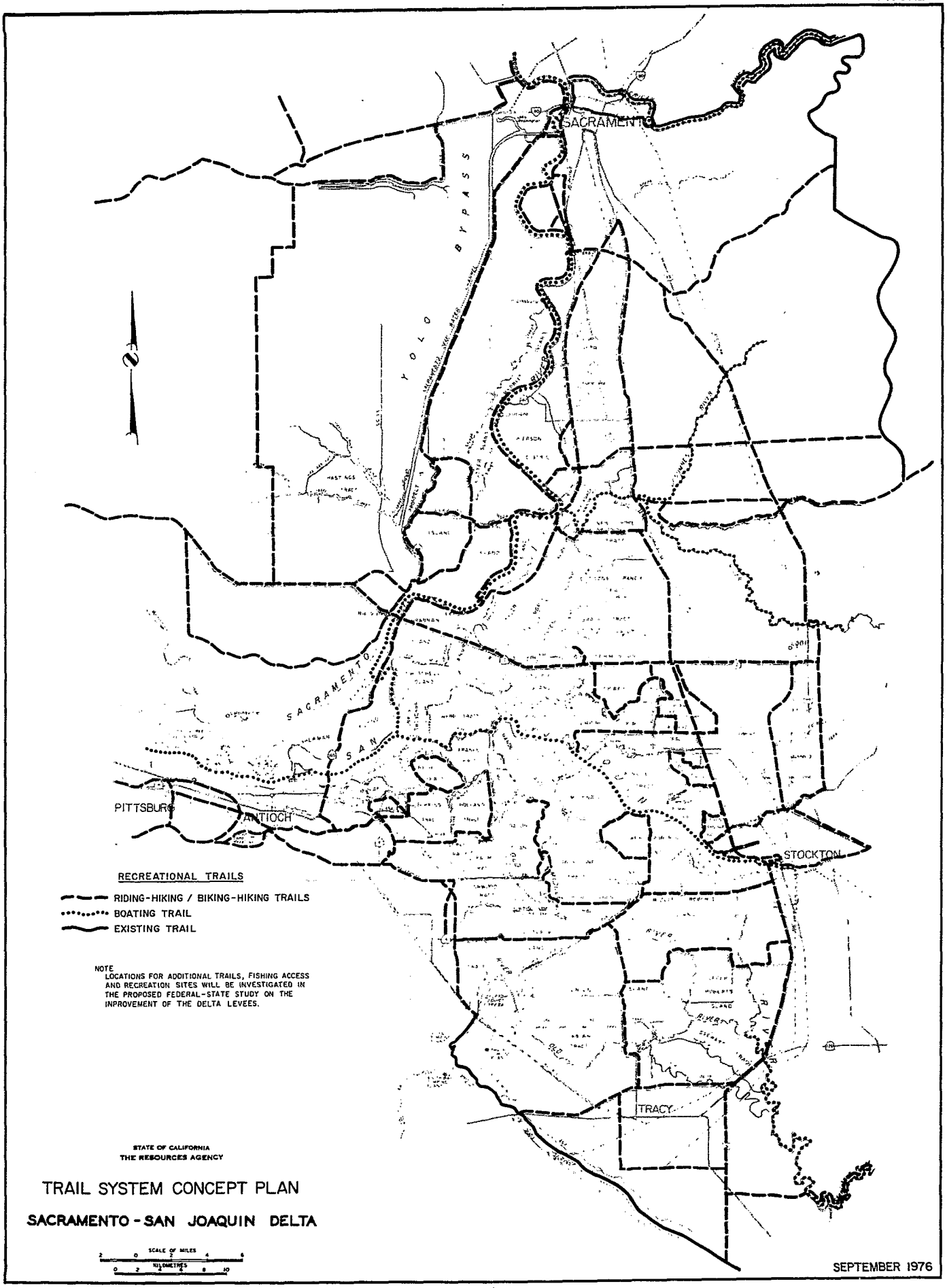
h. Throughout the Delta there is fairly adequate access for the angler who fishes from a boat. The Wildlife Conservation Board and other public agencies have developed ten public launching ramps in the Delta and private resorts and boat harbors have an additional 42 ramps. Ramps at Steamboat Slough and Garcia Bend have been cooperatively developed by the U. S. Army Corps of Engineers and the State Reclamation Board. The private sector should be encouraged to develop and operate additional access and recreational facilities, provided that all developments are in conformance with the Waterways Use Program (see Appendix A).

i. Steps to increase hunting opportunities at Clifton Court Forebay and Miner Slough Area have not been formulated, but the Department of Fish and Game's plans for expanded use should be completed and put into effect by 1980.

j. The Department of Fish and Game should continue to encourage private development of more hunting opportunities through club activities.

k. The Department of Parks and Recreation was authorized in 1974 to prepare the "California Recreational Trails System Plan" by AB 3594 (Section 157.2, Highway and Streets Code and Section 5070 et. seq., Public Resources Code). Their preliminary concept of the plan for the Delta Trail System is shown in Figure 6. Based on the Department's current planning and the

FIGURE 6



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consensus of reactions to a widely distributed preliminary plan, the Department of Parks and Recreation is stressing the identification of safe and scenic recreational trail opportunities that will generate large amounts of use. Because of the shortage of funds available for recreation (particularly for recreational trails), investments should be limited to those specific projects satisfying the greatest needs. Accordingly, it is recommended that the Department of Parks and Recreation develop and coordinate, with other governmental agencies and private organizations, a recreational trail plan for the Delta that defines opportunities for "high use" recreational trail projects. This plan should recommend priority for the implementation of projects that would meet State criteria for the Delta.

1. The Department of Parks and Recreation should coordinate a comprehensive plan for the preservation, restoration and interpretation of the Delta's historic and cultural resources. This effort should make use of the expertise of historical societies, universities and other interested groups. The Sacramento Housing and Redevelopment Agency has recently initiated a preservation plan for the town of Locke. This plan should be coordinated with other appropriate government agencies and public and private organizations.

CHAPTER IV: THE DELTA WATERWAYS

A. GENERAL DESCRIPTION OF THE WATERWAYS

Most of the 700 miles of Delta waterways, which vary from less than 100 feet to almost 1 mile in width, are navigable. The Sacramento River and Sacramento and Stockton deepwater channels are the only Delta waterways where formal navigation channels are marked and maintained. Most of the waterways, however, have adequate depths for recreational boating.

All of the Delta's rivers and most of the channels and sloughs are natural waterways, although they have been altered in depth and confined in fixed channels by an extensive levee system. Watercourses that are generally described as canals or cuts were artificially created when the levees were initially built or when the deepwater channels were constructed.

Many of the Delta's fresh water rivers, sloughs and channels contain islands without levees which are commonly referred to as nonleveed islands. Generally, these islands are the products of early levee construction techniques, when material was dredged from both sides of the channel. Lands that were beyond the reach of the dredge booms were left as islands. Many of these islands with elevations at, or slightly above, mean sea level are remnants of the Delta as it existed in the 1800's. Most of the higher nonleveed islands were originally part of the initial reclamation work and were later cut off by way of dredger cuts to straighten the levees for more economical maintenance. There are also a number of islands with remnant levees that are the product of ship channel construction. These islands and the meandering waterways are especially attractive to boaters.

Just as there are problems in resolving conflicting uses of the Delta levees as described in Chapter II, some difficult trade offs also must be made in resolving conflicts involving waterway development and waterway usage. As recognized in the 1973 "Delta Master Recreation Plan", development interferes with the recreational uses of the Delta's public waterways, yet there is an increasing need for recreational facilities. The competing waterway uses make it necessary to control and better define criteria pertaining to shoreline facilities, and to minimize conflicts among recreation, navigation and development.

B. PROBLEMS RELATED TO WATERWAYS

1. Conflicting Water Activities

There are potential and existing conflicts between various recreational uses on the waterways. Conflicts between the

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more active uses such as water skiing and cruising will generally occur in narrow or heavily used channels. However, problems related to conflicting uses can occur even when there is sufficient water area for various types of boating activities.

2. Waterway Development Versus Open Space

Commercial and public facilities, typified by marinas, resorts, boat launching ramps, piers, docks and marine sales and repair, are important to the Delta's recreational uses and to the economy of the area. At the same time, if the Delta is to retain its unique water-oriented recreational character, most of the waterway shorelines should remain undeveloped.

3. Public Waterways Versus Private Lands

Most of the land within the Delta is privately owned, and public use of the waterside of the levees often involves trespass. This situation of public waterways and private lands poses a continuing problem in the Delta. In addition, many of the higher nonleveed channel islands have been taken over by squatters. Ownership of many of these islands is contested, and the voluntary payment of property taxes is sometimes used to create a claim to ownership. When an individual claims ownership of an island, he usually posts the land to exclude public use.

4. Navigation Hazards

Major navigation hazards in the Delta waterways consist of abandoned pilings, snags and shifting sandbars. Pilings that have been cut or have rotted off at or below the waterline are particularly dangerous. Hazards in the form of fence posts, building remnants, and farm equipment also exist within Franks Tract, limiting the use of this large, open body of water.

5. Boating Accidents

The meandering courses of the waterways, heavy boat traffic, excessive speed, large wakes, reckless or negligent boat operation and natural and man-made hazards cause most of the boating accidents in the Delta. Minor accidents and injuries may become aggravated due to the remoteness of most waterways from land-based fire-fighting and medical facilities.

6. Waterway Access

Georgiana Slough and the Delta Cross-Canal provide the only waterway access north of Three-Mile Slough from the Sacramento

River to the eastern part of the Delta. The Cross-Canal, situated immediately north of Walnut Grove, provides a short and direct link between the Sacramento River and Snodgrass Slough. However, the limited vertical clearance of the canal's gate structure and the adjacent railroad bridge limit passage to small or low-profile boats.

Furthermore, the Cross-Canal gates are subject to periodic closure, usually at times of high water. When the Cross-Canal gates are closed, vessels must take the long circuitous route via Georgiana Slough, causing excessively heavy use of this narrow waterway. In addition, the Georgiana Slough detour increases passage time and fuel expenditure.

Continuous and direct access for vessels between the Sacramento River and Upper Delta would reduce the concentration of boats and traffic congestion on Georgiana Slough and the north fork of the Mokelumne River.

7. Boat Sewage Discharges

Bacterial contamination and adverse effects on the aesthetic qualities of the Delta result from the discharge of human waste from vessels. The problem varies with the flow characteristics of a given slough or channel and the amount and kind of wastes discharged. For example, a serious problem exists in a backwater reach of Snodgrass Slough, known as "The Meadows". Generally, "The Meadows" has a high concentration of boats, and tidal fluctuations provide only nominal flushings.

C. SOLUTIONS

1. The Waterways Use Program that appears in Appendix A of this report, has been revised and updated from the 1973 Delta Master Recreation Plan to recognize current patterns of waterway use; provide for potential future patterns of use; preserve open space; identify and preserve significant natural areas; minimize the adverse effects of shoreside facilities on the use of Delta waterways; maintain through navigation; provide guidelines and minimum standards for developers involved in Delta water-oriented construction; strive for practicable trade offs between land use and waterway activities; improve boating safety; and resolve conflicting waterway activities by instituting special-use zones. State and local governments should implement and enforce the Program; federal agencies should comply with the Program.

2. Local governments, in coordination with the Department of Navigation and Ocean Development and the Resources Agency,

should establish limited speed and recreational use zones in areas where desirable.

3. The Department of Navigation and Ocean Development should determine the feasibility of establishing enforceable standards for restricted wake zones to protect sensitive ecological resources, moored vessels, or any area where boat wakes can create a hazard or safety problem. Upon development, these standards should be codified in the Harbors and Navigation Code. Local governments and the Department of Navigation and Ocean Development should establish restricted wake zones where desirable.

4. Local governments, in coordination with the Department of Navigation and Ocean Development, should evaluate methods of establishing a coordinated boat patrol for better enforcement of boating safety and waterways use regulations.

5. The State Lands Commission (through the authority given in Section 6216.1, Public Resources Code) and the U. S. Army Corps of Engineers should cooperate in the administration of their respective authorizations to remove structures and obstructions which constitute a threat to public safety from lands under their jurisdictions, including the Delta waterways, and, if possible, expand such efforts, The Program should cause the removal from such waterways, including Franks Tract, of all abandoned piling and other submerged or partially submerged man-made objects which have been designated as safety hazards by the aforementioned agencies. Other agencies with programs within the Delta, such as the State Departments of Navigation and Ocean Development, Fish and Game and Parks and Recreation should notify the Corps and the Commission of the existence of safety hazards.

6. Facilities intended for group use rather than for the individual use of property owners should be encouraged. This goal, however, may be hindered by existing law (1955 amendment to Section 6503, Public Resources Code), which forbids the State Lands Commission from charging a rental fee for private recreational piers on State land. Group-use facilities could be interpreted as not being private facilities, and thereby would be subject to rental fees, which might deter their development. Exemption of private recreational piers from a rental fee in the Delta is detrimental to the public interest. A recent opinion by the Attorney General states that the free permits violate a section of the State Constitution that prohibits gifts of public property. The Legislature should amend Section 6503 of the Public Resources Code (Statutes of 1941) by rescinding the 1955 amendment that forbids the charging of a rental fee for private recreational docks and piers constructed for a

littoral landowner's use, and the State Lands Commission should renegotiate leases and establish appropriate fees for private recreational docks and piers on State lands.

7. Local governments should require proof of ownership prior to accepting property taxes on nonleveed channel islands. This action by local governments will help prevent the seizing of islands by private individuals to the exclusion of the public. It should be noted, however, that title by adverse possession cannot be obtained against the State, and the payment of taxes does not establish any rights against sovereign lands.

8. The Department of Navigation and Ocean Development, in consultation with the Departments of Fish and Game, Parks and Recreation, the State Lands Division and local government, should develop a program to acquire selected nonleveed channel islands in the Delta's "Scenic" and "Multiple Use Waterways" (as identified in the Waterways Use Program) for development as boater-destination anchorages. Some of these anchorages could require excavation of an island's interior and elevation of portions of the island to provide uplands capable of supporting sanitary and camping facilities as well as trees. Others may require little alteration, such as planting trees, and would be acquired to provide offshore public boat anchorage sites and wildlife enhancement.

9. The U. S. Bureau of Reclamation should increase the vertical clearance of the Delta Cross-Canal structure, or provide a boat lock for small craft around the structure to improve cross-Delta navigation. This action would require the alteration or removal of the adjacent Southern Pacific Railroad bridge.

10. The problem of untreated sewage discharge from vessels should be resolved by the recently enacted Environmental Protection Agency - U. S. Coast Guard standards and tentative dockside waste discharge requirements of the State Water Resources Control Board. In addition, a new California statute (Section 775, Harbors and Navigation Code) requires all marinas to have sewage pumpout stations by January 30, 1978.

CHAPTER V: DELTA FISH AND WILDLIFE

A. GENERAL DESCRIPTION OF THE SPECIES AND HABITAT

The Delta supports a substantial portion of California's warmwater and anadromous fisheries. About 80 percent of the salmon landed commercially in California are produced in rivers tributary to the Delta. Largemouth bass, smallmouth bass, catfish, warmouth, Sacramento perch, crappie, bluegill and green sunfish are some of the warmwater gamefish that are year-round residents of the Delta's smaller sloughs and backwaters above the salinity gradient. Striped bass, king salmon, steelhead trout, sturgeon and American shad are the principal anadromous game species inhabiting the Delta. Nongame species found in the Delta include carp, splittail, blackfish, squawfish, suckers, golden shiner, hitch and freshwater sculpins.

The Delta's leveed channel islands and the banks of its drainage canals and leveed islands provide habitat for at least seven species of amphibians -- one of the most important is the bullfrog. In some of the waterways, crayfish are present in numbers sufficient to support a small commercial fishery.

Although the waters of the Delta are murky, in comparison with waters elsewhere in the United States, they are relatively clean.

The Delta's wetlands are important to the birds of the Pacific Flyway. Besides numerous waterfowl, the Delta supports about 200 species of nongame birds, several species of upland game birds (of which pheasant and mourning dove are most abundant) and at least 39 species of mammals and 19 species of reptiles.

Some of the birds commonly seen in the Delta are grebes, herons, swans, sandhill crane, geese, ducks, hawks, white-tailed kite, owls, kingfisher, woodpeckers, wrens, thrushes, warblers, flycatchers, swallows, blackbirds, sparrows and quail. Some rare species of birds, like the black rail and yellow-billed cuckoo, inhabit the Delta.

Mammals found in the Delta include beaver, muskrat, river otter, raccoon, mink, skunks, weasels, opossum, gray fox, and a variety of small mammals -- gophers, moles, mice, squirrels and rabbits. Deer can still be found in areas having dense riparian vegetation, particularly along portions of the Cosumnes and Mokelumne Rivers.

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Wildlife inhabiting the Delta are vitally dependent upon natural vegetation. Trees, shrubs, herbaceous plants, grasses and aquatic plants provide food and cover for many species. In addition to their value to wildlife, native vegetation contributes to the aesthetic values of the Delta. Several species of rare and endangered plants occur in the Delta. The most notable of these is the California hibiscus. A partial list of the rare and endangered plant and animal species found in the Delta appears in Appendix C.

B. PROBLEMS RELATED TO FISH AND WILDLIFE

1. Water Quality

Increases in California's population, industry and the standard of living have increased water consumption and wastes discharges to the Delta.

A combination of decreased inflow to the Delta (because of increased upstream diversions) and net reductions in Delta outflow (because of local use and export) have resulted in flow-reversals (flows in the wrong direction) and intrusions of salt water that adversely affect water quality and fish and wildlife. For example, reverse flows disrupt salmon migrations into the San Joaquin River and salinity intrusions affect the distribution and abundance of neomysis shrimp, an important fish food organism. Salinity intrusions have other subtile effects whose impacts are more difficult to evaluate. Much of the spawning of striped bass, for example, has shifted from the San Joaquin River to the fresh water portions of the Sacramento River and salinity intrusions in years of relatively low flows may have been one of the factors responsible. However, a combination of natural or man-caused changes may also be responsible for the shift. Certain species of vegetation used as food by waterfowl are adversely affected by high salinity. Suisun Marsh, which lies immediately west of the Delta, is an area of concern because it is an important wintering area for waterfowl and increased salinity would adversely affect its vegetation. Future increases in upstream uses and exports of water could increase salinity in the Delta.

Waste water and other discharges contain concentrations of nutrients and other substances, which can damage the aquatic environment. This condition is especially acute when waste water discharges and/or water consumption increase to the point that there is inadequate dilution of nutrients and other contaminants.

The maintenance of high concentrations of dissolved oxygen is essential to fish and other aquatic organisms and to the aesthetic quality of water intended for recreational use. In recent years, water with a low dissolved oxygen content has been detected in some of the dead end sloughs and in the San Joaquin River near Stockton. Primarily responsible are discharges of municipal, agricultural and industrial wastes that have a high biochemical oxygen demand, and are high in nutrients that stimulate excessive algae growths which, upon decomposition, deplete the dissolved oxygen. The major, seasonal depletion of dissolved oxygen in the San Joaquin River near Stockton has been attributed to a combination of low flows, high water temperatures, waste discharges having high oxygen demands and an increase in the river's cross-section to accommodate commercial shipping.

Toxicity data and the occurrence of periodic fish kills indicate that there are other pollution problems in the Delta. An average of about six fish kills occurs each year, and only a few of these have been attributed to waste water discharges or to spills of toxic materials. The causes of the remaining incidents have not been determined.

Channel-bottom materials disturbed by dredging operations can impair water quality by increasing turbidity, suspended solids and biochemical oxygen demand. In addition the disturbance can redistribute toxicants into the water column or decrease the numbers and diversity of bottom dwelling organisms. The proposed improvement of the Stockton Deep Water Channel will require careful consideration of these potential water quality problems as well as potential salinity intrusions that could result from an increased cross-sectional area.

2. Wildlife Habitat

There has been a steady decline in the amount of wildlife habitat in the Delta and most of the loss can be attributed to the removal of native vegetation. Levee repair often causes the removal of vegetation from the levee or the destruction of the berm. Levee maintenance practices such as burning, spraying and disking eliminate all vegetation except annuals. Annual removal of vegetation from drainage systems destroys wildlife habitat. Intensive agricultural practices such as clean farming, increasing the number of crops per year and cultivation to the edges of roads and levees destroy native vegetation. Additionally, river and boat-caused wave erosion wash

away the waterward berm and vegetation on levees, and erode low lying unleveed channel islands. Other activities contributing to the decline in wildlife habitat include the proliferation of man-made structures in the waterways, in riparian habitat and on islands; the filling of wetlands for development or for deposition of dredging spoils; and the conversion of agricultural lands to urban uses.

C. SOLUTIONS

1. Improvement of Water Quality

a. Under terms of a 1969 Memorandum of Understanding, the Departments of Water Resources and Fish and Game, the U. S. Bureau of Reclamation and the U. S. Fish and Wildlife Service periodically place a temporary dam across the head of Old River to force more flow down the San Joaquin River during low flow periods and thereby, reduce the oxygen sag near Stockton. This action along with upstream improvements in the San Joaquin Valley has, apparently been effective in improving conditions for fish migrations. It should be continued as an interim measure pending solution of inflow problems.

b. The operation of the Central Valley Project and the State Water Project have an impact on the fish and wildlife resources of the Delta. A more thorough understanding of the requirements of these resources is necessary to define design and operating criteria for the projects so that the protection of the Delta's fish and wildlife resources can be assured. Extensive studies to obtain a thorough understanding of the resources in the Delta have been underway since 1970. That program, the Interagency Study Program for the Sacramento-San Joaquin Estuary, is being conducted cooperatively by the California Department of Fish and Game, the California Department of Water Resources, the U. S. Fish and Wildlife Service and the U. S. Bureau of Reclamation. The program is being conducted under terms of an Interagency Memorandum of Agreement executed on July 13, 1970.

c. In 1974, a Statement of Intent was signed between the Departments of Water Resources and Fish and Game. The Statement covered goals and objectives for water management in the Delta. In the Statement, the agencies defined goals to maintain fish and wildlife

at average levels existing prior to 1971 and to increase the resource above these levels to the extent compatible with other project purposes.

d. Also, in October 1974, the Departments of Water Resources and Fish and Game, the U. S. Bureau of Reclamation and the U. S. Fish and Wildlife Service signed a Statement of Intent which pledged agreement to the long-term protection of fish and wildlife resources in the Sacramento-San Joaquin Delta, Suisun Bay and Suisun Marsh. Included in the Statement are specific Delta fish and wildlife management goals and objectives, initial water management terms and criteria, procedures for implementation, a monitoring and evaluation program and a provision for renegotiating terms and criteria to better achieve the goals and objectives. This agreement should assure that the State Water Project and Central Valley Project will be operated to insure the protection and enhancement of the Delta environment.

In furterance of the October 1974 Statement of Intent, the four agencies are jointly developing a memorandum of understanding which will define conditions of flow, water quality and other parameters which must be met in the Delta through operation of the export facilities of the State and federal projects. This memorandum of understanding is intended to insure that there will be sufficient habitat to support the same level of abundance of fish and wildlife resources as existed before the projects were built. The memorandum of understanding will recognize that additional development will undoubtedly take place in the Delta to insure continued protection for the Delta resources and, to the extent possible, insure a greater reliability for the State and federal projects in meeting their water delivery commitments. For this reason it will be an interim operating document to be modified when additional development occurs.

Finally, under the four agency program, the Department of Water Resources recently completed the construction of a test facility adjacent to the Sacramento River at Hood. The facility is being used by the four agencies to develop an efficient fish protective facility to prevent loss of fish through project diversions to the extent necessary to maintain stocks of adult fish using the Delta.

These programs should be continued until an adequate understanding of the fish and wildlife resources of the San Francisco Bay-Delta System is developed, proper design and operating criteria are developed for the State Water Project and the Central Valley Project, and project operations are monitored, evaluated and modified if necessary to ensure the protection and enhancement of fish and wildlife.

e. As described in Chapter III, the Department of Water Resources is planning the Delta Water Facility of the State Water Project to convey water south across the Delta. The specific facility to be constructed has not been selected at this time. However, as in the case of recreation, a Delta Water Facility can have a significant effect on fish and wildlife and it could help resolve many of the problems in the Delta.

f. To resolve other Delta water problems, it will be necessary to meet and enforce the mutually[1/] and the standards identified in the State Water Resources Control Board's Delta Water Rights Decision 1379[2/] and the State Water Quality Control Plans 5A, 5B and 5C for the Sacramento River, Sacramento-San Joaquin Delta and San Joaquin River Basins. These standards may require periodic modification as more definitive information on fish and wildlife requirements becomes available. Implementation of the State Water Quality Control plans to improve the quality of waters discharged into these waterways should continue to receive major attention and funding. The Interagency Study Program for the Sacramento-San Joaquin Estuary should continue and agreements related to salinity intrusion and other water quality problems affecting fish and wildlife should be implemented.

g. The amount of persistent pesticides now being used in and upstream from the Delta has decreased. The problem of gradual long-term buildup of persistent pesticides in aquatic organisms can be expected to progressively decrease with the reduced use of these materials. There are occasional die-offs of fish in localized areas because of a spill or misuse of a pesticide. However, spills and misuse are being reduced by better training of operators

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1/ State Water Quality Control Policy, 1967; SWRCB Resolution 68-17, 1968; and SWRCB Resolution 73-16, 1973; all of which have been adopted at the federal level (Environmental Protection Agency or its predecessors).

2/ Subject to pending litigation.

and improvements in mixing systems and procedures. Stricter requirements for initial registration of pesticides at the State and federal levels are also reducing pesticide problems.

2. Levee Vegetation

Stripped levees should be replanted and multiple-purpose levee maintenance standards should be established to allow original or replanted vegetation to remain on newly rehabilitated levees where its retention would not adversely affect flood-carrying capacity or levee stability. Uniform standards for multiple-purpose levee maintenance should be developed through coordination by the U. S. Army Corps of Engineers, the Department of Water Resources and the State Reclamation Board to supplement or modify existing federal standards. Although present standards do not require removal of vegetation, they do not specifically provide for its retention or reestablishment. Such revisions would require changes in several federal statutes and regulations applicable to maintenance standards for project levees.

The supplemental standards should encourage beneficial vegetation to remain on the levees and waterward berms, if the flood-carrying capacity and levee stability does not become threatened. Although the federal standards (Title 33 USC 709, par. 208.1) apply nationwide, the Corps can grant exceptions.

3. Agricultural Practices

There is no total solution to the problem of the loss of wildlife habitat resulting from intensive agriculture; however, educational programs, carried out by the Department of Fish and Game's wildlife protection and management personnel, should be continued to motivate landowners to provide areas for the maintenance or development of wildlife habitat.

In addition, the Resources Conservation Commission with the assistance of the local resource conservation districts should provide assistance in the use of U. S. Department of Agriculture programs and funding to improve wildlife habitat.

4. Protection of Existing Habitat

Proliferation of structures in the navigable waterways can best be controlled by vigorous enforcement of Section 10 of the "River and Harbor Act of 1899" by

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the U. S. Army Corps of Engineers, the permit requirements and trespass investigation of the State Lands Commission and implementation and enforcement of the Waterways Use Program (Appendix A). Comments and recommendations on proposed structures and existing, illegal structures by the Resources Agency have already resulted in some improvement in this regard.

Proliferation of structures on the islands can be best controlled by implementation and enforcement of the Waterways Use Program including strong local zoning ordinances and adequate sanitary standards. The Department of Water Resources Bulletin No. 192, "Plan for Improvement of Delta Levees", provides for specific degrees of flood protection and it should be used by local agencies to establish land-use zones for each island. Local governments should allow urban development only where the proposed project areas are provided with at least 100-year flood protection. Furthermore, as recommended in the Delta Waterways Use Program, local government should enact land-use regulations to protect existing wildlife habitat, particularly that abutting waterways classified as "Natural" or "Scenic".

5. Acquisition of Wildlife Areas

a. Channel Islands

The channel islands in Latham Slough between Empire Cut and Columbia Cut should be acquired. In 1974, the Department of Parks and Recreation recommended that funds be made available from the State Beach, Park, Recreational and Historical Facilities Bond Act of 1974 to provide for the necessary title search and acquisition. Those funds are now available.

b. The unnamed island in the South Fork Mokelumne River just north of Sycamore Slough should be acquired.

c. Browns Island (Near Pittsburg)

This island is included in a current study related to preparation of the "Fish and Wildlife Element of the Suisun Marsh Protection Plan". This study was authorized by Senate Bill 1981, "Suisun Marsh Preservation Act of 1974". No decision on acquisition of the island should be made until the Suisun Marsh plan has been considered by the Governor and Legislature.

d. Unnamed Island Near Bethany in Old River

The Department of Fish and Game should reexamine the feasibility of acquiring this island.

e. Old River Islands between Rock Slough and Quimby Island, including those in Connection Slough.

Rhode Island, the largest island in this chain, has been recommended for acquisition as an ecological reserve. Environmental Protection Program (Section 3907, Health and Safety Code) monies, derived from the sale of personalized license plates, could be used for the purchase. The Department of Fish and Game should budget funds to determine ownership of the remaining islands and make suitable purchases within the next five years.

f. Eucalyptus Island

Eucalyptus Island has been investigated for possible preservation as a resident waterfowl nesting area. It is situated between Widdow and Kings Island in the south Delta. The Department of Fish and Game will make further biological studies of the island in 1976 and may budget for its acquisition, if the area meets the criteria for an ecological reserve.

6. Creation of New Habitat

The Department of Fish and Game, in cooperation with the Department of Water Resources, should continue efforts to revegetate lands surrounding Clifton Court Forebay.

The Department of Fish and Game should improve conditions for wildlife on the 15 acres surrounding the City of Isleton's new waste water treatment facility.

The Department of Fish and Game, in cooperation with the federal government, should continue the habitat improvement program for Rough and Ready Island.

Additionally, the Department of Fish and Game, in cooperation with the California Department of Transportation (Caltrans), is investigating the feasibility of providing wildlife habitat in highway rights-of-way. Such opportunities should be approved within the next two years, and selected areas in the Delta should be revegetated by 1980. A problem exists

relative to roadside plantings, however, because county and State highway maintenance practices usually eliminate vegetation close to the shoulder of the road.

The Department of Water Resources in accordance with agreements with the Departments of Fish and Game and Transportation is planning and implementing creation of wildlife habitat and fishing and hunting opportunities in and adjacent to the borrow ponds that are created by excavation of materials used for Interstate 5 in San Joaquin and possibly Sacramento Counties.

7. Revegetation of Spoil Areas

The Departments of Fish and Game, Parks and Recreation and Conservation, the State Reclamation Board and the U. S. Army Corps of Engineers should investigate revegetating spoil areas on a rotation basis and they should renegotiate agreements on present spoil sites on Lower Sherman Island and on the west side of the Sacramento River below Rio Vista.

Dredged material could be placed on Lower Sherman Island so that better access would be provided to some of the briar patch areas, and spoil from the Rio Vista area could be placed on the east side of the river to provide a beach area and to give protection to State Highway 160. The latter proposal should be given additional study by State and federal agencies as an alternative to using other spoil deposition sites.

The Division of Forestry (Department of Conservation) has had many years of experience in revegetation and they should assist in the investigation of revegetation possibilities.

CHAPTER VI: LAND OWNERSHIP IN THE DELTA

A. GENERAL DESCRIPTION OF THE PRINCIPAL SOURCES OF PRESENT DAY TITLES

Titles to private ownership in the Delta can be traced to the Spanish occupation of California in 1769, when the King of Spain took title to the land. During the Spanish period, before the end of the 18th century, concessions of ranch property were made. Such grants were in the nature of grazing permits, rather than absolute land grants.

Between 1822 and 1846, particularly after 1828, the Mexican government granted many ranch titles. Some of these grants were confirmations of previous Spanish grazing concessions. Most of the ranchos were granted after secularization of the missions, which was completed in 1836.

The Spanish and Mexican grants were later approved or disapproved by the Board of Land Commissioners that was appointed by Congress in 1851, or by the federal courts to which the Commissioners' decisions were appealed. Successful claimants received a confirmatory patent, which at that time included all mineral rights, from the federal government.

Public ownership of land by the State can be traced to the date of California's admission into the Union in 1850. As new states were forged out of the federal territories after formation of the Union, they were admitted with the same rights, sovereignty and jurisdiction as the original states possessed within their respective borders.1/ Accordingly, title to all tide and submerged lands and lands beneath inland navigable waters were vested in the new states, including California, upon their admission into the Union, by virtue of their sovereignty, under the equal footing doctrine.2/

The navigable waterways are termed the sovereign lands of the State of California and the sale of sovereign lands is constitutionally prohibited.3/ In determining whether a body of water is navigable or non-navigable for the purposes of declaring it to be sovereign land, the federal test of navigability applies.4/ The federal test of navigability was

1/ Mumford v. Wardwell 73 U.S. (6 Wall.) 423, 436, (1867).
2/ Pollard's Lessee v. Hagan 44 U.S. (3 How.) 212 (1845); Shively v. Bowlby 152 U.S. 1 (1893); Weber v. Board of Harbor Commissioners 85 U.S. (18 Wall.) 57, 65-66 (1873).
3/ California Constitution, Article I, Section 25; Article XV, Sections 2 and 3; and Public Resources Code Section 6370.
4/ United States v. Oregon 295 U.S. 1 (1934); United States v. Ladley 4 Fed. Supp. 580 (1933).

stated early in The Daniel Ball 77 U. S. 557 (1870), and was reiterated by the United States Supreme Court as recently as 1971 in Utah v. United States 403 U.S. 1:

> "Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used or are susceptible of being used, in their ordinary conditions, as highways of commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel in water ...." /77 U.S. 557 at 563/

This statement applies to all water courses, rivers, lakes and sloughs.5/

California's title to swamp and overflowed lands from the United States derives from the Arkansas Swamp Land Act of 1850.6/ Swamp and overflowed lands were defined as lands which required drainage or leveeing to render them suitable for ordinary purposes of husbandry.7/ Specific reference was made to "lands unfit for cultivation" as being the decisive criterion for determining which lands were swamp and overflowed lands.

Private individuals made application to the federal government and in most instances received a patent to the lands in their possession. Also, large areas of public domain and rights of way, usually 200 feet in width, were granted to railroads by acts of Congress.

The California Legislature in 1855 determined that swamp and overflowed lands should be sold to encourage reclamation and cultivation.8/ Statutes cited previously contain provisions for determining the boundaries of the swamp and overflowed lands. Generally, the purchaser was required to make application to and have the land surveyed by the county surveyor, with the survey expense paid by the purchaser. The county surveyor's field notes and the plat of the survey were to be filed and recorded in the county recorder's office. This recorded survey generally marked the boundaries of the swamp and overflowed land.

5/ United States v. Oregon, supra.

6/ September 28, 1850, 9 Stats. 520. The Act itself and subsequent statutory authority can be found in 43 U.S.C. Sections 983 et seq.

7/ S. F. Saving Union v. Irvin 28 Fed. 708 (1886); State v. Gerbing 47 So. 353 (1908).

8/ Following are the statutes that give California authority for such sales: Chapter 151 Statutes of 1855; Chapter 235 Statutes of 1848; Chapter 314 Statutes of 1859; Chapter 397 Statutes of 1863; Chapter 415 Statutes of 1868; Political Code Sections 3440-3492.5; Public Resources Sections 7501 35 seq.; 2 Cal. Adm. Code Sections 2300 et seq.

In order to protect the State's interest in lands granted to the State by the federal government as a result of California's statehood in 1850, the California Legislature in 1938 passed the State Lands Act. This Act delegated responsibility for protecting the State's interests to a newly created agency -- the State Lands Commission.

B. PROBLEMS RELATED TO LAND OWNERSHIP

Because of the modification of the Delta waterways by man, it is often difficult to determine the boundaries between publicly and privately owned land. In addition, many of the higher non-leveed channel islands have been taken over by squatters who have used the voluntary payment of property taxes to create a claim to ownership. In order for the State to claim title to land with disputed boundaries, detailed and costly studies must be made.

C. SOLUTIONS

1. Establish Claim to State Lands

California, through the State Lands Commission, should firmly establish its claim to many nonleveed channel islands, berms and waterways in the Delta. In doing so, the Lands Commission could eliminate controversies over claims to public lands by adverse possession.9/

The State Lands Division, being the staff of the State Lands Commission, has a relatively complete title organization and has a research team working in the Bethel Island area. The Division has the capability to document and substantiate all of the State's titles in the Delta.

Due to complicated title problems in the Delta, the State Lands Division should be given adequate funds to enable it to do the necessary title work and to make private owners aware of potential conflicts over ownership and boundaries.

2. Acquisition

Any proposed funding for the acquisition of Delta property by the State should include adequate funds to enable the State Lands Commission to make the necessary title and boundary investigation. This precaution would preclude paying for land that is already publicly owned.

9/ The term "adverse possession" is a legal concept that defines ownership only on the basis of possession over a fixed period of time. Title by adverse possession does not establish rights against sovereign lands.

Other portions of this report specify lands that should be acquired in fee simple title. Other lesser rights that should be acquired also are indicated. These lesser rights include easements for access, recreational trails, roads and other uses. Land and easement acquisition for all State agencies wishing to obtain fee and easement interests in the Delta should be coordinated, generally, by a single State agency. The agency should have powers of condemnation and right of immediate possession to preclude development on significant parcels.

Any acquisition program undertaken by a State agency should provide for consultation with the State Lands Commission relative to the extent of existing public ownership of Delta lands.

The following procedures are intended to indicate a standard approach to land and easement acquisition. Nothing herein is intended to adversely affect agencies that already are vested with acquisition authority, such as the Reclamation Board, the Department of Water Resources, the State Department of Transportation, the Wildlife Conservation Board and the State Lands Commission:

> All State agencies concerned with the Delta should comply with the current Delta Master Recreation Plan. When a specific agency decides to acquire a parcel of land, it should notify other State agencies of its decision.
>
> The memorandum for notification should identify the land to be acquired; describe the intended use of the property -- consistent with this master plan --; and indicate the source of funds for the purchase.
>
> If no objections have been encountered at this point, the acquiring agency should present its findings to the State Legislature, together with a request for an appropriation of necessary funds. By specific legislation, the State Legislature could appropriate the required funds and authorize the requested acquisitions.
>
> Generally, unless an agency already has acquisition authority, all budgeted acquisitions should be coordinated with the Department of General Services. Under current law, such acquisitions are made pursuant to the Property Acquisition law. This law provides for condemnation proceedings if negotiations are unsuccessful.

CHAPTER VII: REGULATORY AUTHORITIES IN THE DELTA

A. GENERAL DESCRIPTION OF THE AUTHORITIES

The preceding chapters discuss the physical and environmental problems related to recreation in the Delta and make recommendations that will assist in resolving these problems. This section examines the various governmental entities, each with its own interest and expertise, which have jurisdiction and authority affecting recreation in the Delta.

Numerous governmental agencies are involved in programs that regulate the use of the Delta. The authority of each agency is limited by specific legislation and by the agency's own policies and procedures.

1. Federal Programs

a. U. S. Army Corps of Engineers

Sections 9 and 10 of the River and Harbors Act of 1899 prohibits the unauthorized obstruction or alteration of any navigable waterway in the United States. Unless the Secretary of the Army has granted prior approval, construction of any structure in or over any navigable water of the United States, excavation from or deposition of material in such waters, or any other activities that affect the course, location, condition or capacity of such waters are unlawful. Recent federal court decisions which interpret the National Environmental Policy Act and the Rivers and Harbors Act, have increased the Corps' authority to control the issuance of permits for environmental reasons. Only recently has this permit program been applied extensively in the Delta, and the Corps is in the process of requiring permits for all structures within the waterway.

In addition to regulating the condition of existing structures, the Corps receives applications for new structures. By use of this authority, governmental agencies exercise their greatest control over developments. The Corps' practice is to invite comments from all interested parties and to deny permits to those applicants whose projects are determined not to be in the public interest. Generally, Corps permits will not be issued in those instances where required state or local authorizations have been denied.

The Corps is increasing its surveillance capabilities so as to detect unapproved structures

during the early stages of construction and to require that existing structures, which do not meet Corps standards, be brought into compliance with the law. The program effectively regulates new structures because applicants are unlikely to proceed with construction after a permit has been denied. However, the program is less effective with existing structures because of the time, staff and funds that would be required to enforce compliance.

The Corps has recently been directed to broaden its interpretation of Section 404 of the Federal Water Pollution Control Act of 1972, for the purpose of regulating the deposition of dredged and spoil material in all waters of the United States, and all wetlands adjacent or contiguous thereto. This authority is limited to the shore below the plane of mean high water in tidal waters and the plane of ordinary high water in nontidal waters. Fill activities above these elevations are not subject to the program. This broadened interpretation will bring almost all construction in the Delta under jurisdiction of the Corps in a staged program by July 1, 1977.

The Corps, as the construction agency for flood control project levees in the Delta, requires that the project levees be maintained in accordance with specific standards. Maintenance of project levees is the responsibility of the State Reclamation Board which in turn passes this responsibility on to local reclamation districts or to other legally constituted maintaining agencies. The Corps, however, maintains some levees along the Stockton Ship Channel in order to protect these levees from ship wave wash erosion.

Maintenance of levees repaired or replaced by the Corps under emergency authorities is the responsibility of the appropriate local agencies or individuals.

b. Coast Guard

The Coast Guard has three major programs that affect the Delta. One program provides aids to navigation through the maintenance and operation of lights, buoys and other warning or signal devices to mark the channels of the Sacramento and San Joaquin Rivers.

The second program involves regulation of the construction, modification and operation of bridges.

Through the third program, which involves boating safety, the Coast Guard provides a rescue service, information about safe boating, enforces boating safety regulations and issues permits for boat races and parades.

c. Fish and Wildlife Service

The Fish and Wildlife Coordination Act of 1958, the Estuary Protection Act of 1968 and the National Environmental Policy Act of 1969 are a few of the authorities under which the U. S. Fish and Wildlife Service operates.

One of this agency's basic policies and responsibilities is to preserve, restore, and improve the fish, wildlife and natural values of waters and related wetlands.

The Coordination Act mandates that any department or agency of the United States, or any public or private agency under federal permit or license, proposing to modify any stream or other body of water, shall first consult with the U. S. Fish and Wildlife Service to determine the effects of the proposed projects on fish and wildlife resources. The intent of such stewardship is to protect wildlife and their habitat.

Under the Rivers and Harbors Act of 1899 and in conjunction with the Corps' Section 10 Permit Program, the Service investigates, reviews and provides ecological advice and technical assistance to applicants for federal permits and other developments in navigable waters.

d. Other Agencies

Other federal agencies have regulatory programs that affect the Delta. Two of the more important of these are the Environmental Protection Agency, which established standards for allowable water and air pollution, and the Department of Housing and Urban Development, which administers the Federal National Flood Insurance Program.

Other federal agencies whose actions and policies may affect the Delta are: the Department of Agriculture (Soil Conservation Service); the Department of Interior (Bureau of Reclamation

and Bureau of Land Management); the Department of Health, Education and Welfare; the Office of Economic Opportunity; and the Office of Coastal Zone Management (Department of Commerce).

2. State Programs

a. State Lands Commission

The State Lands Commission is one of the permit-issuing agencies with jurisdiction in the Delta. Its authority is a stewardship derived from common law, from the act admitting California into the Union, and from the Public Resources Code, which gives it exclusive jurisdiction over natural, navigable waterways. The Commission also has some responsibility, which is not clearly defined, relative to the public's easement over other lands for commerce, navigation and fishing.

In brief, the State has a definite interest, which is not always clearly defined, in all navigable waterways, as well as over some islands, berms, or other land features. Accordingly, the extent of the State's involvement and authority needs legal definition.

A 1972 State Supreme Court decision, in the Marin County case of Marks v. Whitney reaffirmed and expanded the principle that the State has a strong involvement in tidal and submerged lands for two reasons: (1) the public cannot be blocked from utilizing the public easement; and (2) the easement itself (designated the "public trust") was shown not to be limited to commerce, navigation and fishing, but also includes the preservation of the land.

The authority to sell, lease, or otherwise encumber the tidelands and submerged lands of the State in the public's behalf passed to the State Lands Commission in the 1930s, when there was pressure to develop waterfront land for commerce. More recent legislation, however, requires the Commission also to consider environmental effects.

An applicant for a lease is usually required to obtain a Corps of Engineers' permit and local approvals, where the State and counties have permit issuing authority.

State Lands Division permits, except those for private recreational piers, provide some revenue to the State and are valid for from 5 to 49 years. Removal of the structures when the permit has expired is required only where the State owns the land in fee. Consequently, a title inventory is made to determine the extent of State, fee-owned lands, and to determine the applicants authority to acquire through agreements, exchanges and purchase, such lands or rights in lands as are needed to carry out the recommendations specified in the required environmental impact report. In most instances, an environmental impact report is required with the permit application and these reports are reviewed for adequacy by the Resources Agency and other agencies. The Division has also adopted regulations to protect the natural environment.

b. Reclamation Board

The Reclamation Board's primary function is to participate with the federal government in the completion of federal levee and channel flood control projects. This involves providing project assurances and acquiring rights of way for the projects. The Board's secondary function is to insure the integrity of the federally constructed levee and channel flood control systems in the Central Valley. The Board's jurisdiction includes the Delta, and the Board has participated in the construction and repair of the project levees, which make up about 15 percent of the total Delta levee system.

The Board's principal regulatory activities in the Delta consist of the review of any works that will have an impact on the project levees or channels. Works include -- but are not limited to -- marinas, gas pipelines, aerial and underground communication facilities, bridges, docks, platforms, pumps, stairways and plantings on the levee. Approval, in the form of an order of the Board, must be obtained prior to construction. Each order contains technical conditions, which assure that the proposed work will not adversely affect the flood control works.

The Board can require the submittal of an application for approval of plans for any work affecting the levees or channels in the Delta. However, any conditions that affect approval are considered binding only where the work would have impact on a project

levee, or on a plan of flood control adopted by the Legislature or the Board.

c. Water Resources Control Board

The State Water Resources Control Board and the Regional Water Quality Control Board review proposals for the discharge of waste into the waters of the Delta and establish regulations for the protection of water quality. The waste discharge regulations are a means of implementing water quality control plans that have been adopted by the State Board in accordance with State and federal law.

In addition, the State and Regional Boards review all proposed activities in the Delta that require federal grants, licenses or permits, to determine the effect of the proposed action on water quality. Applications to the federal government must include a certification from the State Board stating that there is reasonable assurance the proposed activity will not violate federal water quality standards.

The State Board also reviews applications for the diversion of water from the Delta or its tributaries in order to determine the effect of the proposal on the quantity and quality of water, and the resultant effect on other uses of water in the Delta. Permits for diversion and storage of water may include special conditions that depend on a specific water quality and quantity.

d. Air Resources Board

The Air Resources Board is responsible for the adoption and enforcement of standards, rules and regulations for the control of air pollution throughout the State. The Board conducts studies of the causes of air pollution and evaluates the effects of air pollution upon human, plant and animal life.

The State is divided into air basins and the Board adopts standards for ambient air quality for these basins. The Air Resources Board also coordinates the activities of the State's local air pollution control districts.

Other responsibilities of the Board are to set emission standards for all nonvehicular sources of air pollution for each air basin; to adopt and enforce standards for exhaust emission from new and used motor vehicles; to test and approve vehicle emission control devices; to regulate agricultural, range, forest, and open-dump burning; and to administer and coordinate a program of air pollution research.

e. Department of Fish and Game

In addition to programs for the preservation and protection of fish and wildlife, the Department of Fish and Game has specific regulatory responsibilities in the Delta. The Department enforces fishing, hunting, and trapping regulations and laws, including screening of water diversions (Sections 5980-6100, Fish and Game Code).

It is responsible for the licensing of private pheasant clubs and shares in the enforcement of trespass and litter laws. The Department also has authority to regulate hunting and to conduct wildlife management programs on Lower Sherman Island.

Based on Sections 1601 and 1602 of the Fish and Game Code, the Department also has some control over any physical changes that require the alteration of streambeds or banks. Proposed works are reviewed by the Department for their impact on fish and wildlife. If an agreement on how to mitigate any adverse effects cannot be reached between the applicant and the Department, the decision is placed before an arbitration panel.

f. Resources Agency Coordination

The State Resources Agency coordinates all State agency comments on applications to the U. S. Army Corps of Engineers for permits. These comments indicate whether the application conforms with the Waterways Use Plan and Shoreline Criteria of the 1973 Delta Master Recreation Plan. The Agency also responds to State Clearinghouse notices of public agency and subdivision projects. In addition, it evaluates environmental impact documents for State Lands Division permits and leases.

In each evaluation, the Resources Agency considers existing State policy, programs and plans. Its responses to permit applications are considered by the Corps of Engineers, the State Lands Division and by other permit issuing agencies.

g. Other Agencies

Other State agencies whose actions and policies may affect the Delta include: the Bay Conservation and Development Commission and the Departments of Parks and Recreation, Water Resources, Navigation and Ocean Development, Food and Agriculture and Transportation.

3. Local Government Programs

Parts of five counties -- Contra Costa, San Joaquin, Solano, Yolo and Sacramento -- and about 20 cities and towns lie within the Delta, and these entities are particularly concerned with the region's future. These local governments are responsible for land use planning and regulation, and for issuing building, use and health permits within their jurisdictions. Their actions are guided by general plans that have been mandated by State law. Relative to waterways, the local governments have law enforcement responsibilities that involve patrolling and establishing speed limit zones.

Some Local Agency Formation Committees (LAFCOs) are making efforts to coordinate their plans for the Delta. The Delta Advisory Planning Council (DAPC - a five counties, joint powers organization established in October 1972 and inactivated in July 1976) was a particularly noteworthy effort to develop an overall plan for the Delta region. The DAPC responded to local needs and to State and federal programs that affect the Delta, and prepared a comprehensive resources management plan for the Delta. Implementation of the plan, however, will present a major challenge to local and other governments. The DAPC could perform a valuable role in the affairs of the Delta by serving as a single voice for the five involved Delta counties.

Also involved in the Delta are many local districts, special districts (about 100 reclamation and levee districts), and many water-related districts.

B. PROBLEMS RELATED TO REGULATORY PROGRAMS

1. Implementation of Past Delta Master Recreation Plans

In 1973 Delta Master Recreational Plan defined State policy relative to the region, and provided the State and other agencies with guidelines for protecting and developing the Delta. The 1973 Master Plan also contained recommendations for carrying out short- and long-term goals, but most of the recommendations have not been put into effect. In part, this situation can be attributed to the fragmented mechanisms responsible for carrying out the overall policy. Other problems have been the difficulty of determining the State's interest in the Delta and of obtaining sufficient funds to implement the recommendations in the Master Recreation Plan.

A Waterways Use Plan was first formulated in the 1966 Delta Master Recreation Plan and that plan was modified in the 1973 report. The 1973 Waterways Use Plan has been used by the Department of Navigation and Ocean Development, the Department of Fish and Game, the Department of Parks and Recreation, the Department of Water Resources, the Resources Agency, the U. S. Army Corps of Engineers and the Delta counties as a guide to control development along the Delta's waterways. It is evident, however, that application and interpretation of the 1973 plan by the various governmental agencies has varied. Obviously, the Waterways Use Program is only one aspect of a much broader issue -- that of insuring conservation and development of the Delta in accordance with a policy that will best serve public and private interests at the local and state levels.

2. Coordination

The problems can also be considered in terms of overlapping jurisdictions and the need for intensive coordination. For example, many local, State and federal agencies administer various permits (such as land use, zoning, building, dredging, water quality and encroachment permits). Many times, areas of concern are not clearly defined and there is considerable duplication of effort in the review of a permit application. An applicant often has no way of determining if he has gotten all the necessary permits. As many as 25 agencies could become involved in the process. Generally, however, for the standard marina or dock project about six agencies are involved.

C. SOLUTIONS

As already indicated, the State has a broad and diversified interest in the Delta and what has been lacking is a coordinated effort by all of the agencies that share this interest (federal, State, regional, county and local). That shortcoming must be remedied in order to properly develop and protect the resources of the Delta, and thereby ensure maximum benefits to the public.

Because of the numerous overlapping jurisdictions and the interrelated environmental problems of the Delta, there is an obvious need for planning and coordination on a regional basis. A regional agency with local, State and federal input and broad powers to coordinate land and waterway planning, review permits and control development may be the answer to this problem. A joint State, local and federal investigation would be a good way to determine the organizational structure best suited to accomplish these goals. However, before another level of regulatory government is established, a substantial effort should be made to resolve the problems and coordinate programs under present authorities.

Therefore, the Legislature and Delta counties should adopt this Delta Master Recreation Plan, and the Legislature, through legislation, should implement the Delta Waterways Use Program. State and local agencies should implement and enforce the Waterways Use Program. Federal agencies should comply with the Program.

The Resources Agency, with cooperation from federal, regional and local agencies, should be the central agency responsible for coordinating the waterways and abutting land use planning, regulation and development of the Delta. Along these lines, the Resources Agency is studying the permit process with the goal of making the process easier for the applicant and the regulatory agencies involved. One proposal that has merit is for the Resources Agency to designate a Permit Coordinator who, with adequate staff, could coordinate the administration of permits for uses of waterways and for uses of lands abutting the waterways. This could be accomplished through a "Permit Forum". Such a forum would be made up of representatives of each of the affected State, federal and local government agencies and it would be convened by the coordinator to provide a one-time review of all proposed waterway and/or abutting land use projects. Each permit and review agency would continue to exercise its current function, but it would have the added advantage of full coordination with the other agencies that are involved. From 1970 through 1975, the number of applications for permits for projects in the Delta processed annually by the U. S. Army

Corps of Engineers ranged from 81 to 152. This is a partial indication of the workload that the Permit Coordinator and the Permit Forum could expect for Delta projects.

APPENDIX A

SACRAMENTO-SAN JOAQUIN DELTA WATERWAYS USE PROGRAM

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C-069661

WATERWAYS USE PROGRAM

I. GENERAL

A. Purpose of the Program

This program is established to guide uses and development in, on, over and abutting[1/] all Delta waterways, unless specific portions of the Delta are more stringently regulated by appropriate governmental agencies. The program is specifically intended to: protect, preserve, and restore the Delta's natural and ecological values; halt development of, and cause removal of, unauthorized[2/] projects[3/] in, on, over and abutting Delta waterways, or cause permit processes to be initiated; establish uniform standards for all levels of government to use in evaluating project proposals; reduce conflicts between uses and to encourage a wider distribution of recreational activities throughout the Delta; protect the public interest and the public trust (see Section I.C.) in the Delta waterways; and improve public health and safety.

B. Implementation of the Program

1. These standards shall be mandatory upon and observed by all departments, boards and commissions of the Resources Agency unless they conflict with statutory authority and shall be used by the Resources Agency in responding to U.S. Army Corps of Engineers Public Notices for permit requests in the Delta.

2. These standards are recommended:

   a. For use by all other State agencies and shall become mandatory upon legislative action.

1/ It is recognized that, generally, the State has jurisdiction over waterways to Mean Higher High Water (MHHW) and has delegated its land use authority to local governments. Consequently, local government is encouraged to establish land use regulations consistent with the Delta Master Recreation Plan including this Waterways Use Program.

2/ "Unauthorized" means a facility which has not received all required federal, State and local permits or clearances.

3/ "Projects" are defined as any public or private construction, development or alteration which has a potential for physical impact on the environment.

b. For use by all federal agencies and especially the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service in the Section 10 (of the Rivers and Harbors Act of 1899) and 404 (of the Federal Water Pollution Control Act of 1972) permit programs for control of navigation, alteration of water bodies, and disposal of dredge materials.

c. To local governments for implementation by land use regulations consistent with waterways classifications and enactment of any special ordinances necessary, provided they conform with Section 660 of the Harbors and Navigation Code, and for evaluation of all projects with approval contingent upon consistency with the standards.

d. To special districts as guidelines in any construction projects or levee maintenance efforts.

3. The Resources Agency may amend, as required, this Delta Waterways Use Program but only after a public hearing and full review by the affected jurisdictions.

4. The large scale official "Delta Waterways Use Map" shall be maintained in the Resources Agency for reference.

5. The establishment of "Special Use Zones" (speed, wake and recreation) shall receive special emphasis. Speed and wake zones shall be established according to provisions of the Harbors and Navigation Code. A copy of every proposed ordinance which would establish speed or wake zones or special recreational use areas shall be transmitted to the Resources Agency and the Department of Navigation and Ocean Development[4/] for evaluation as to consistency with the objectives and standards of this program. Actual implementation of speed and wake zones or special recreational use areas lies in their adoption, posting and enforcement by local governments.

6. Unauthorized structures require increased identification by the U.S. Corps of Engineers and State Lands Division. All administrative procedures for either removal or permitting such structures will be utilized before relying on judicial determination.

C. Doctrine of the Public Trust

A declaration upon which the concept of the "public trust" over the State's tide and submerged lands is established and maintained as contained in a statement made by Chief Justice Taney of the

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4/ As per the requirements of Section 660 of the Harbors and Navigation Code.

United States Supreme Court. According to Chief Justice Taney, "When the revolution took place, the people of each state became themselves sovereign; and in that character hold the absolute right to all their navigable waters, and the soils under them, for their own common use."[5/] Subsequent to the information of the United States, each additional state was admitted into the Union under the doctrine of "equal footing", that is, on a basis equal to that of the original thirteen states. It is through the application of this doctrine in 1845[6/] to the beds of navigable waters that the sovereignty over the tidelands (the lands lying between the lines of ordinary high and low tide) passed to California on September 9, 1850.[7/]

One of the earliest references to the "public trust" in California was in 1854 when the State Supreme Court said that the State: (1) holds the complete sovereignty over her navigable bays and rivers and (2) owns such lands for the purpose of preserving the public easement, or right of navigation.[8/] This concept has been further defined as "a title held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have the liberty of fishing therein free from the destruction or interference of private parties..."[9/]

5/ Martin v. Waddel, 16 Pet. (41 U.S.) 410, (10 L. Ed. 997).

6/ Pollard's Lessee v. Hagen, 3 How. 212, 230 (1845).

7/ There were no definitive guidelines at this time which could extend the sovereignty of either the State or the federal government into the navigable waters of the ocean (beyond the low water mark of the marginal sea). The major aspect of this question was clarified with the passage, by Congress, of the Submerged Lands Act (67 Stat. 29, "Public Law 31-83 Congress"). The effect of the Submerged Lands Act was a reaffirmation of the bases upon which the states had earlier based their jurisdiction over the submerged lands, i.e., (1) the validity of the states' historical action at the time of its entrance into the Union in extending its boundary beyond the low water mark out to the three-mile limit; and (2) the navigable waters criteria in distinquishing federal and state jurisdiction over submerged lands within a state's boundaries. Under the provisions of the Act, the United States conceded that California owns all lands beneath the ocean between the low water mark and three geographical miles seaward from this mark.

8/ Eldridge v. Cowell, 4 Cal. 80, 87 (1854).

9/ Illinois C. Ry. Co. v. Illinois, 146 U.S. 452.

In 1867, the Court established a precedent which pertains specifically to the State's administration of the tidelands within its jurisdiction and the responsibilities of those to whom the State grants such lands. Under this decision, "The right of the State is subservient to the public rights of navigation and fishery, and theoretically, at least, the State can make no disposition of them (the tidelands) prejudicial to the right of the public to use them for the purposes of navigation and fishery, and whatever disposition she makes of them her grantee takes them upon the same terms upon which she holds them, and, of course, subject to the public rights above mentioned."10/

The State's power of disposition over the sovereign tide and submerged lands was further defined in 1897 when it was determined that, "No grant of lands covered by navigable waters can be made which will impair the power of a subsequent legislature to regulate the enjoyment of the public rights. The trustee takes the mere proprietary interest in the soil, and holds it subject to the public easement."11/

A modern statement of the evolving nature of the public trust doctrine is found in the case of Marks v. Whitney (6C. 3d251).

The public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the State is not burdened with an outmoded classification favoring one mode of utilization over another.

There is a growing public recognition that one of the most important public uses of the tidelands -- a use encompassed within the tidelands trust -- is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area. It is not necessary to here define precisely all the public uses which encumber tidelands.

Although provisions of the State Constitution (Article I, Section 25; Article XV, Sections 2 and 3) operate as restraints upon grants to private parties rather than as a constraint upon legislative policy, the Court in People v. California Fish Co., 166 Ca., 576, P. 597 (1913) summarized in part that: "The administration and execution of this trust is committed by the constitution to the legislative department, subject to certain expressed reservation and restrictions." And, in the case of County of Orange v. Heim, 30 Cal.3d 694 (1973), the court observed that "...the determination of the State Lands Commission pertaining to administration of the trust pursuant

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10/ Ward v. Mulford, 32 Cal. 372 (1867).

11/ Oakland v. Oakland W. F. Co., 118 Cal. 183 (1897). A more recent case addressing the impairment doctrine is County of Orange v. Heim, 30 Ca. 3rd 694.

to an express delegation of authority from the Legislature must be classified as quasi-legislative in character."

II. DELTA WATERWAYS CLASSIFICATIONS

A. Introduction

1. All Delta area waterways are classified as one of the following: "NATURAL AREA", "SCENIC AREA", or "MULTIPLE USE AREA". The natural and scenic designations essentially represent the environmental and aesthetic values of the waterway and its abutting lands, while the multiple use designation reflects the waterway's capability to sustain a greater variety of activities.

2. In addition, three special use zones ("RESTRICTED WAKE", "LIMITED SPEED", and "RECREATIONAL USE") can be established by local governments as overlaid controls for specific situations in conformance with federal and State standards (see Section II. E.).

3. Specific standards for projects within each waterway classification are established in Section III.

B. Natural Area

1. Definition

Those waterways, or portions of waterways and abutting lands, including levees, exhibiting scenic, ecological, or natural values of statewide significance.[12/] These areas should be preserved to perpetuate the public trust; to protect wildlife habitat, existing vegetation, and remnants of the waterways history; to retain areas having solitude and wilderness-like features; and may be used for nonintensive recreation.

Included within this classification are all undeveloped[13/] nonleveed channel islands throughout the Delta. This does not necessarily imply public ownership but only serves to identify all nonleveed islands as areas of significant natural resources and/or historic value.

2. Recreational Activities

Examples of appropriate activities in these areas would be: nature study, hiking, swimming, fishing, canoeing and slow-boat cruising. Water skiing and high speed boating

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12/ Statewide significance means the area has such a high environmental value that it could be a candidate for acquisition as a state or federal park, preserve, reserve or wildlife management area.

13/ Undeveloped includes those nonleveed islands with unauthorized uses and excludes those portions with authorized uses.

in natural areas should be discouraged and shall be prohibited within certain Special Use Zones (see Section II.E.).

C. Scenic Area

1. Definition

Those waterways or portions of waterways and abutting lands including levees which are of a lesser ecological or natural value than "Natural Areas" or have the potential for enhancement and which can support a wider range of active recreational activities without adverse environmental impact. These areas shall be managed and used to protect and further the public trust, protect wildlife habitat and existing vegetation, permit compatible public recreation uses, retain remnants of the waterways history, restrict inappropriate development in the waterway, and maintain through-navigation.

2. Recreational Activities

Appropriate in these areas are more intensive activities such as water skiing and high-speed boating except within certain special use zones (see Section II.E.). Also appropriate are a larger variety of land-based recreational uses than acceptable in natural areas.

D. Multiple Use Area

1. Definition

Those waterways, or portions of waterways, which have little or no natural values and moderate to minor scenic values. They may have substantial waterside development and/or generally have sufficient water surface to accommodate a variety of intensive uses. These areas shall be managed and used to protect and further the public trust, restrict inappropriate development in the waterway, and maintain through-navigation.

2. Recreational Activities

Appropriate in these areas are all activities described for Natural and Scenic Areas except where special use zones (see Section II.E.) have been established.

E. Special Use Zones

1. Restricted Wake Zone[14/]

a. Tentative Definition

An area where a wake which strikes the shore, levee, or moored vessel shall not show a white water break.

14/ See Recommendation No.18, page xiii of the 1976 Delta Master Recreation Plan.

b. Purpose

To protect sensitive ecological resources, moored vessels or any area where boat wakes can create a hazard or safety problem.

c. Implementation

Shall be established by ordinance of the appropriate local governments(see Section I.B.5.).

d. Identification

Shall be shown on the Delta Waterways Use Map as a red encircled W and shall be posted on the waterway in accordance with the California Waterway Marker System.

2. Limited Speed Zone

a. Definition

Maximum five nautical miles per hour speed limit.

b. Purpose

To protect public safety in areas with navigation hazards or conflicting uses.

c. Implementation

Shall be established according to Section 267 of the Harbors and Navigation Code and where identified by local ordinance.

d. Identification

Shall be shown on the Delta Waterways Use Map as a red encircled speed limit and shall be posted on the waterway in accordance with the California Waterway Marker System.

3. Recreational Use Zone

a. Definition

Areas set aside for specific recreational uses, although more than one special use zone may be established in the same area. This includes but is not limited to the following:

(1) Nature Study Preserve - An area which has natural, wildlife, scientific or educational values, conveys a sense of solitude and merits public acquisition. Hunting and trapping should be prohibited.

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(2) Swimming Site - Public or private beaches open for public use only when supervising personnel are present.

(3) Boat Anchorage Site - Areas protected from prevailing winds and frequently used for temporary mooring by recreational boaters.

(4) Canoe Channel - Waterways, or portions thereof which are most appropriate for use by nonmotorized boats.

(5) No Ski Zone - Areas where waterskiing is dangerous or undesirable.

b. Purpose

To protect public safety and/or eliminate conflicting activities in areas that are clearly suited for a particular recreational use.

c. Implementation

Shall be established through enactment of appropriate local ordinances (see Section I.B.5.). The Resources Agency may recommend such areas to the appropriate local governing body.

d. Identification

Shall be shown on the Delta Waterways Use Map by an appropriate symbol and should be posted on site.

III. DELTA WATERWAYS PROJECT STANDARDS

A. Policy of "Water-Dependent" Projects

1. Policy

It is the basic policy of this program that only water dependent projects and essential transportation, water conveyance and utility projects (subject to the specific standards of Section III.D) shall be authorized in, or over the waterways of the Sacramento-San Joaquin Delta. Local governments should limit projects on abutting lands to those which are water dependent.

No new floating or fixed residential structures, recreation rooms or living quarters of any kind shall be permitted in, on or over any Delta waterway. All existing unauthorized floating or fixed residential structures, recreation rooms or living quarters of any kind placed in, on, or over any Delta waterway since February 1973[15/] shall not be permitted to remain and shall be removed from the waterways. The disposition of all existing unauthorized floating or fixed residential structures, recreation rooms or living quarters of any kind placed in, on or over any Delta waterway prior to February 1973[15/], shall be determined on an individual basis. The policy expressed in this paragraph does not include watercraft which have been designed and used primarily for transportation.

2. Definition

Water dependent means a project, or components of a project which requires immediate water frontage to accomplish its intended function.

3. Examples

Docks; piers; boatsheds; berthing, launching, fuel, and pumpout facilities; water recreation equipment rentals; fishing sites; waterside parks; boat anchorages; pump, drain and outlet structures; industrial facilities for the shipping or receiving of raw or processed materials by water. Waterview restaurants, having public access to and along the shoreline and with design features which complement the immediate environment, may also be considered as water dependent.

B. Exemptions

1. Exemption Process

Project proposals (public or private) may be exempted from one or more of these standards, upon a finding (by the

15/ Date of Delta Master Recreation Plan which prohibited placing these kinds of structures in or over Delta waterways.

Resources Agency when State permits are required) that a clear public need is demonstrated, the public trust will not be significantly adversely affected, no feasible alternative location exists and adequate mitigation of adverse impact is provided. However, an exemption for a proposed project within a "Natural Area" shall be preceded by a public review of an initial study or environmental impact report which has been circulated through the State and metropolitan clearinghouses.

2. Fully Exempted Projects

a. Repair or replacement, without expansion, of all existing and authorized water dependent facilities will be permitted. Expansion of existing facilities, however, will be subject to these standards.

b. Agricultural projects such as pumps, drains and other water dependent facilities are exempt from these standards. Agricultural projects shall not be interpreted to include any agricultural-related industry as an exempted use.

C. General Project Standards

1. Planning and Coordination

a. Projects shall:

(1) Have been granted all necessary federal, State and local permits prior to any work in, on, over or abutting waterways or shall be considered as unauthorized.[16] (See Chapter VII of the Delta Master Recreation Plan for description of permits.)

(2) Be consistent with the concept of the public trust.

(3) Be compatible with the classification of, and predominant uses and development on, the waterway.

b. Projects shall not:

(1) Limit the diversity of public uses appropriate in the waterways as determined by its classification.

(2) Reduce public use of, or access to, approved recreation areas or areas in the public trust.

c. Projects should be consistent with local ordinances and plans, adopted regional plans and the objectives and standards of this program. Local governments should ensure that their regulations, actions, policies and fiscal programs are consistent with the following standards.

[16] Unauthorized means a facility which has not received all required federal, State and local permits or clearances.

2. Siting and Construction

a. Projects shall be clustered in areas of similar uses, wherever feasible.

b. Private projects in, on, or over the waterways should be joint or community use, wherever feasible.

c. Only the water-dependent components of any project shall be located in, on or over the waterway. Local government should limit projects on abutting shorelines to those which are water dependent.

d. Maximum extensions perpendicular (into) and parallel (along) any waterway for all proposed private, commercial and public structures shall be subject to the most restrictive of the following if they are to be located in-channel:

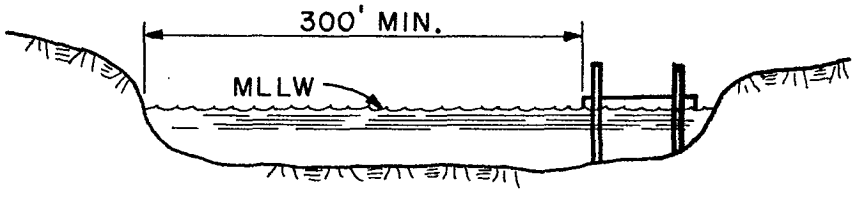
(1) Maximum extensions into the waterway:17/

(a) 200 ft. at mean lower low water (MLLW) for commercial and public facilities.

(b) 100 ft. at MLLW or to the line of existing adjacent structures in areas of intensive shoreline development, whichever is less, for private facilities.

(c) One-third of the horizontal distance across the waterway at MLLW.

(d) 300-foot clearance18/ between the intrusion's maximum extension and the undeveloped opposite bank at MLLW.19/

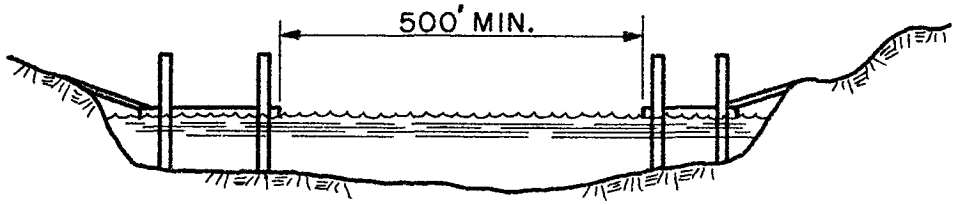


17/ These criteria may be waived if the proposed project is to be located at the navigable extreme of dead-end sloughs, within out-of-channel lagoons or behind protective berms or levees provided that water quality and navigation will not be adversely affected.

18/ The purpose of this criterion is to maintain a 100-foot unrestricted navigation channel (existing law requires a five nautical miles per hour speed limit within 200 feet of in-water construction occupied by people or boats).

19/ This restriction may be waived in areas of existing and authorized developments.

(e) 500-foot clearance[18] between the intrusion's maximum extension and the maximum extension of any intrusion from the opposite bank.[19]



(2) Maximum extensions along and within the waterway:

(a) Shall use the minimum necessary shoreline.

(b) Shall be no more than 100 ft. or one-half the shoreline length of the upland property, whichever is more restrictive, for private, non-commercial structures.

(c) Shall be a maximum of 350 ft. (either continuous or discontinuous) for commercial and public facilities unless it is determined, through the exemption process, that additional waterway frontage is necessary for a commercially feasible facility.

3. Public Health and Safety

a. Projects with structures for human habitation or visitation shall be prohibited in the high velocity flow floodway to meet the requirements of the Federal Flood Disaster Protection Act of 1973. In the adjacent flood-prone area, such structures should be protected from, or elevated above, the "100-year flood".

b. Projects in, on, or over the waterway shall:

(1) Not adversely affect the required flood carrying capacity of a channel or create a potential of dangerous flotsam.

(2) Not create a safety or navigation hazard.

(3) Not create adversely competing uses.

(4) Not adversely affect the stability of the levee of lands adjacent to the waterway or cause the formation of sandbars or shoals.

c. Project approvals may be conditioned upon removal of debris, abandoned structures or any other safety hazard.

d. New access corridors to the waterways should be adequately policed and maintained.

4. Environmental and Aesthetic

a. Projects in, on, or over the waterways shall:

(1) Cause minimum disturbance to the shoreline area.

(2) Cause minimum dredged, fill, or bulkheading.

(3) Utilize maximum compatibility of design, materials, texture, and color with existing natural features.

(4) Mitigate for lost vegetation.

b. Projects in, on, or over the waterways shall not:

(1) Detract from the general aesthetics of the area.

(2) Create a substantial adverse impact upon marshes and riparian wildlife habitat.

(3) Create a substantial adverse impact upon the aquatic environment and streambed. Project construction shall be timed to ensure there is no significant adverse impact upon anadromous fish runs according to procedures established in Sections 1500, 1601 and 1602 of the Fish and Game Code.

(4) Reduce the ecological or scenic values of an existing or approved State or local park, ecological preserve or wildlife management area. Projects shall also be evaluated for their impact upon such areas which have been formally recommended for acquisition by appropriate governmental agencies.

D. Specific Projects Standards

1. Flood Control Projects

Include both public and private physical construction works and maintenance efforts for the protection of land areas from Delta waters.

a. Public Programs

All State fiscal assistance programs for Delta levees shall ensure as a minimum that the following objectives and standards are met. The U. S. Army Corps of Engineers, special districts and local governments should ensure that their regulations, actions, policies and fiscal programs are consistent with the following.

b. "Natural Areas"

Vegetation in, on, or over Delta waterways shall be retained, and vegetation on the levees should be retained, except for that which adversely affects levee stability, navigation, or the required flood carrying capacity of the channel. State fiscal assistance programs shall give priority to retention of vegetation. Vegetation losses should be mitigated by replacement of identical or improved vegetation in areas where replacement would not adversely affect levee stability, navigation, or the required flood carrying capacity of the channel.

c. "Scenic Areas" and "Multiple Use Areas"

Vegetation in, on, or over Delta waterways and levees should be retained to the maximum extent possible except for that which adversely affects levee stability, navigation, or the required flood carrying capacity of the channel.

2. Parks and Recreation Projects

Include both public and private areas open to the public for recreation.

a. "Natural Areas"

Projects on State lands shall be limited to those for non-intensive activities relying primarily on water access; other public and private parks should be similarly limited. Facilities should be nonobtrusive and have a minimal impact on the area. No facilities which preclude use by the public should be permitted.

b. "Scenic Areas" and "Multiple Use Areas"

Appropriate in these areas are more intensive use water-dependent projects such as boat launching sites, developed boat destination anchorages, fishing access sites and parks supporting a wider range of activities. All such projects shall ensure that the scenic values of the area are retained with mitigation for vegetation loss. Land access to the sites is desirable if feasible.

All nonleveed channel islands throughout the Delta are classified as "Natural Areas". However, within Scenic and Multiple Use waterways, this classification does not preclude public projects on or within the islands for purposes of recreation, education and wildlife enhancement.

3. Transportation, Water Conveyance and Utility Projects

Include, but are necessarily limited to, public and private roads, bridges, pipelines, power lines, water and sewage treatment facilities and aqueducts.

a. "Natural Areas"

Projects shall not be located in, on, or over the waterways unless the exemption process (Section III.B.1.) clearly indicates a public need, lack of a feasible alternative location and establishes a requirement for the highest degree of mitigation. Projects on abutting lands should be permitted by local governments only under the same conditions.

b. "Scenic Areas" and "Multiple Use Areas"

Projects in, on, or over the waterways shall be limited to existing corridors and locations to minimize scenic intrusions. Other corridors or locations may be developed upon a finding in the exemption process (Section III.B.1.) that feasible alternate locations are not available. Projects on abutting lands should be permitted by local governments only under the same conditions.

4. Industrial Projects

Include, but are not necessarily limited to, production facilities, piers, wharves, and loading-unloading facilities.

a. "Natural Areas" and "Scenic Areas"

Projects shall be prohibited in, on, or over the waterways and should be prohibited within abutting lands by local governments.

b. "Multiple Use Areas"

Projects in, on, or over the waterways shall be limited to water-dependent facilities and on abutting lands should be similarly limited by local governments.

5. Commercial Projects

Include, but are not necessarily limited to, piers, docks wharves, marinas and attendant facilities, restaurants, bars, lodging, fishing and water-dependent recreational facilities.

a. "Natural Areas"

Projects shall be prohibited in, on, or over the waterways and should be prohibited within abutting lands by local governments.

b. "Scenic Areas"

Projects in, on, or over the waterways shall be limited to water-dependent facilities, subject to the following:

(1) Marinas and attendant facilities shall be located out of channel, i.e., behind berms, levees or in dead-end sloughs.

(2) Water-view restaurants may be allowed, providing the project has minimal adverse impact, is designed to be highly compatible with the natural environment and includes public access to and along the shoreline.

(3) Floating restaurants shall be limited to the interior of lagoons, basins or marinas unless located at sites in existing restricted speed zones or adjacent to existing construction and do not create conflicting uses or adverse environmental impact.

(4) Moored vessels having historic values, as determined by the Resources Agency, may be retained or placed at appropriate sites.

Projects on abutting lands should be similarly limited by local governments.

c. "Multiple Use Areas"

Projects in, on, or over the waterways shall be limited to water-dependent facilities. Marinas and attendant water-dependent facilities, floating restaurants and historic vessels may be located in-channel subject to through-navigation standards of Section III.C.2.d. Projects on abutting lands should be similarly limited by local governments.

6. Private Projects

Include, but are not necessarily limited to, piers, docks, boatsheds, residences and boat and hunting club facilities.

a. "Natural Areas"

Projects shall be prohibited in, on, or over the waterways and should be prohibited within abutting lands by local governments.

b. "Scenic Areas"

Projects in, on, or over the waterways shall be limited to group use or community use water-dependent facilities. Projects on abutting lands should be similarly limited by local governments.

c. "Multiple Use Areas"

Projects in, on, or over the waterways shall be limited to water-dependent facilities. Projects on abutting lands should be required, by local governments, to be clustered in areas of similar uses. Residential structures on abutting lands should be limited by local governments to Multiple Use Areas and to construction which is adequately protected from flooding and designed to compliment the environment.

APPENDIX B

METRIC CONVERSIONS

English to Metric System of Measurement

Quantity	English unit	Multiply by	To get metric equivalent
Length	inches	2.54	centimeters
	feet	30.48	centimeters
		0.3048	meters
		0.0003048	kilometers
	yards	0.9144	meters
	miles	1,609.3	meters
		1.6093	kilometers
Area	square inches	6.4516	square centimeters
	square feet	929.03	square centimeters
	square yards	0.83613	square meters
	acres	0.40469	hectares
		4,046.9	square meters
		0.0040469	square kilometers
	square miles	2.5898	square kilometers
Volume	gallons	3,785.4	cubic centimeters
		0.0037854	cubic meters
		3.7854	liters
	acre-feet	1,233.5	cubic meters
		1,233,500.0	liters
	cubic inches	16.387	cubic centimeters
	cubic feet	0.028317	cubic meters
	cubic yards	0.76455	cubic meters
		764.55	liters
Velocity	feet per second	0.3048	meters per second
	miles per hour	1.6093	kilometers per hour
Discharge	cubic feet per second or second-feet	0.028317	cubic meters per second
Weight	pounds	0.45359	kilograms
	tons (2,000 pounds)	0.90718	tons (metric)

APPENDIX C

A PARTIAL LIST OF RARE OR ENDANGERED PLANTS OF THE DELTA[1/]

County and USGS Quadrangle	Plant Name Common/Scientific Names	Status Code[2/] R E V D
Contra Costa County		
Antioch South	Contra Costa eriogonum *Eriogonum truncatum*	3-2-2-3
Antioch North	Contra Costa wallflower *Erysimum capitatum*	3-3-3-3
Antioch South	Diablo helianthella *Helianthella castanea*	2-2-1-3
Antioch South	Brewer dwarf flax *Hesperolinon breweri*	2-1-1-3
Woodward	California hibiscus *Hibiscus californicus*	2-2-2-3
Antioch South	Northern California black walnut *Juglans hindsii*	2-2-2-3
Not available	Delta tule pea *Lathyrus jepsonii*	2-2-1-3
Antioch North	Antioch dunes evening primrose *Oenothera deltoides*	3-3-3-3
Sacramento County		
Rio Vista	California hibiscus *Hibiscus californicus*	2-2-2-3
San Joaquin County		
Woodward	California hibiscus *Hibiscus californicus*	2-2-2-3
Solano County		
Antioch North	Suisun aster *Aster chilensis*	3-2-~~?~~[3/]-3
Antioch North	California hibiscus *Hibiscus californicus*	2-2-2-3
Antioch North	Delta tule pea *Lathyrus jepsonii*	2-2-1-3
Jersey Island	Common name not provided *Lilaeopsis masonii*	P.E.--3
Not available	Bearded allocarya *Plagiobothrys hystriculus*	2-1-1-3

A PARTIAL LIST OF RARE, ENDANGERED OR THREATENED BIRDS, MAMMALS AND REPTILES OF THE DELTA[4/]

Species	Classification	Occurrence
Aleutian Canada goose[5/] *Branta canadensis leucopareia*	endangered	A winter resident, migration routes and distribution now under study.
American peregrine falcon *Falco peregrinus anatum*	endangered	In the Delta, a winter visitor, appearances infrequent and unpredictable.
Southern bald eagle *Haliaeetus leucocephalus leucocephalus*	endangered	Like the peregrine falcon, a winter visitor, appearances unpredictable.
California black rail *Laterallus jamaicensis coturniculus*	rare	A secretive resident of marshlands, most likely to be seen in western part of Delta.
California yellow-billed cuckoo *Coccyzus americanus occidentalis*	rare	A summer resident, secretive, may occur in broadest bands of dense riparian woodlands of Delta.
San Joaquin kit fox *Vulpes macrotis mutica*	rare	A relatively small population exists in the southwestern part of the Delta (San Joaquin and Contra Costa counties).
Giant garter snake *Thamnophis couchi gigas*	rare	Could occur in many parts of the Delta, known to be present in Stone Lake/ Snodgrass Slough area and in vicinity of White Slough.
Alameda striped racer *Masticophis lateralis euryxanthus*	rare	Probably confined to westernmost part of Delta in Contra Costa County.

In addition, some naturalists are concerned about possible loss of a localized population of legless lizards (*Anniella pulchra*) in sandhills near Antioch. The species is, however, not rare or endangered throughout its range (western part of State from Antioch to Baja California).

FOOTNOTES

1/ Extracted from: Inventory of Rare and Endangered Vascular Plants of California, Special Publication No. 1, California Native Plant Society 1974, also Society's microfilmed maps showing reported locations. The study and publication is a result of cooperation of State Office of Planning and Research with partial funding by the Resources Agency (personalized license plate program) and a grant from the Department of Housing and Urban Development.

2/ Explanation of Status Code

R-Rarity

1. Rare, of limited distribution, but distributed widely enough that potential for extinction or extirpation is apparently low at present.

2. Occurrence confined to several populations or one extended population.

3. Occurs in such small numbers that it is seldom reported; or occurs in one or very few highly restricted populations.

P.E. Possibly extinct or extirpated

E-Endangerment

1. Not endangered

2. Endangered in part

3. Totally endangered

V-Vigor

1. Stable or increasing

2. Declining

3. Approaching extinction or extirpation

D-General Distribution

1. Not rare outside California

2. Rare outside California

3. Endemic to California

3/ ? indicates "unknown"

4/ Reference: At the Crossroads, January 1975, State of California Fish and Game Commission, 101 pages. Available at many public libraries. Does not include information on the Aleutian Canada goose.

5/ This species recently classified as "endangered" in the federal list established by the Secretary of the Interior. The classifications for the remaining species are those established by the California Fish and Game Commission (Footnote 1/).