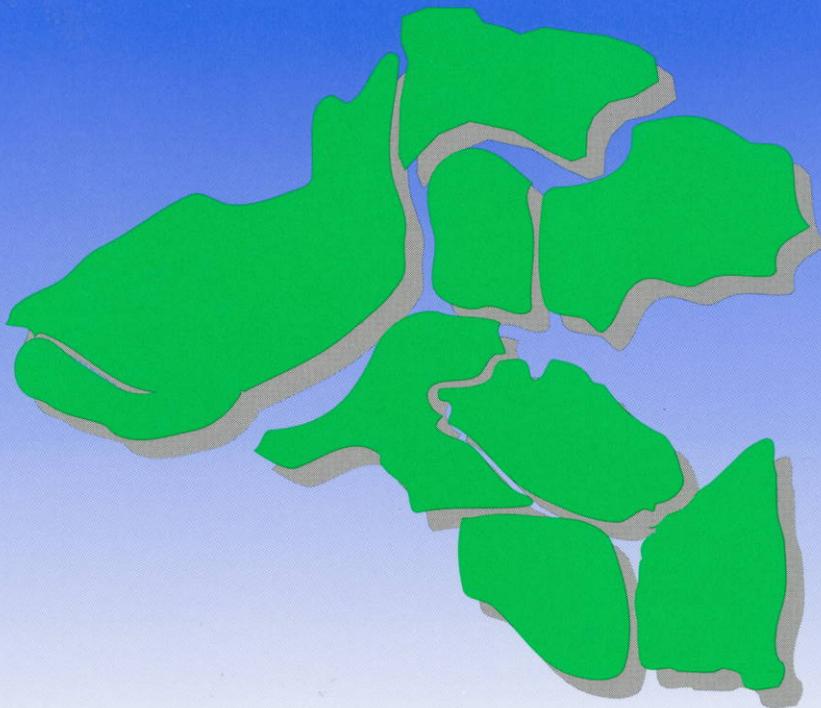


ACTIONS & PRIORITIES

DELTA FLOOD PROTECTION ACT

EIGHT WESTERN DELTA ISLANDS



**DIVISION OF PLANNING
CALIFORNIA DEPARTMENT OF WATER RESOURCES
MARCH 1990**

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Division of Planning

ACTIONS AND PRIORITIES

DELTA FLOOD PROTECTION ACT

*Bethel, Bradford, Holland, Hotchkiss, Jersey,
Sherman, Twitchell, and Webb*



March 1990

GORDON K. VAN VLECK
Secretary for Resources
The Resources Agency

GEORGE DEUKMEJIAN
Governor
State of California

DAVID N. KENNEDY
Director
Department of Water Resources

State of California
GEORGE DEUKMEJIAN, Governor
The Resources Agency
GORDON K. VAN VLECK, Secretary for Resources
Department of Water Resources
DAVID N. KENNEDY, Director

LAWRENCE A. MULLNIX ROBERT G. POTTER JAMES U. McDANIEL
Deputy Director Deputy Director Deputy Director

L. LUCINDA CHIPPONERI SUSAN N. WEBER
Assistant Director for Legislation Chief Counsel

DIVISION OF PLANNING

Edward Huntley, Chief

Delta Planning Branch

Karl Winkler, Chief

This report was prepared under the direction of

Curt Schmutte Senior Engineer, Water Resources

by

Linda Reinders Assistant Engineer, Water Resources

Miriam Root Junior Civil Engineer

Editing and report production was provided by

Travis Latham Research Writer

John Carter Graphic Designer

CALIFORNIA WATER COMMISSION

Stanley M. Barnes, Chairman, Visalia
Martin A. Matich, Vice Chairman, San Bernardino

Harold W. Ball La Mesa
Katherine B. Dunlap Los Angeles
Clair A. Hill Redding
James J. Lenihan Mountain View
James M. Stubchaer Santa Barbara
Audrey Z. Tennis Chico
Jack G. Thomson Bakersfield

Orville L. Abbott
Executive Officer and Chief Engineer

Tom Y. Fujimoto
Assistant Executive Officer

The California Water Commission serves as a policy advisory body to the Director of Water Resources on all California water resources matters. The nine-member citizen commission provides a water resources forum for the people of the State, acts as a liaison between the legislative and executive branches of State Government, and coordinates federal, state, and local water resources efforts.

CONTENTS

INTRODUCTION	1
BACKGROUND	2
PROVISIONS OF SENATE BILL 34	3
LONG-TERM PLANS	4
Priority Island Actions	6
All Island Actions	7
Threatening Levee Conditions	7
Subsidence Studies	8
Global Positioning System	9
Encroachment Program	9
Dredging	10
Levee Upgrade	11
ENVIRONMENTAL CONCERNS	12
RELATED DELTA WATER MANAGEMENT PROGRAMS	13
West Delta Update	13
Franks Tract, Jersey Island, and Twitchell Island Proposals	14

Illustrations

Special Projects Islands Named in Senate Bill 34	iv
Past and Present Delta Conditions	2
Salinity Gradient in Relation to Eight Western Delta Islands	3
Early Funding Components	4
Later Funding Components	5
Island Priorities	6
A Structure Existing in the Levee Cross-Section	9
Levee Standards	10

INTRODUCTION

In March 1988, the California Legislature, recognizing the importance of the Sacramento-San Joaquin Delta region, passed the Delta Flood Protection Act. The bill (SB 34) created the Delta Flood Protection Fund and declared legislative intent to appropriate \$12 million annually for Delta flood protection for 10 years starting July 1, 1988. Six million dollars is for local assistance under the Delta Levees Maintenance Subventions Program, and \$6 million is for Special Flood Control Projects for the eight western Delta islands and the towns of Thornton and Walnut Grove.

This report addresses the Special Flood Control Projects for the eight western Delta Islands. A separate report prepared for the California Legislature addressed flood control alternatives for Thornton and Walnut Grove. The Reclamation Board adopted the Preliminary Procedures and Criteria for the Delta Levee Maintenance Subventions Program.

To assure that flood protection is not delayed, the Department has pursued a two-step program of implementation for the eight western Delta islands. This method allowed prompt expenditure of available funds to protect against potential levee failures while Department staff conducted field surveys and other explorations to establish proper priorities. In addition, the Department has sought public input in the preparation of the long-term plan mandated by the bill.

The first step consisted of initial or "fast-track" actions that applied to all eight islands. The California Water Commission approved a report identifying the initial actions for the Special Flood Control Projects in September 1989. Rehabilitation of threatened levee sites was the major initial action. Another initial action addressed the levee encroachment problem on Bethel Island and Hotchkiss Tract. The *Phase I Encroachment Study* identifying existing encroachments was completed in March 1990. Other continuing initial actions include studying Delta subsidence, publishing Global Positioning System survey data, and coordinating the use of dredged material on Delta levees.

This report presents the Department of Water Resources' recommended plan for the second step of implementation. The second step represents a long-term plan to guide decisions on future expenditures and includes information on island priorities and all-island actions. The recommended flood control actions mentioned in this plan are designed to reduce the future probability of flooding for the eight western Delta islands. However, these actions will not guarantee flood protection against all future hydrologic and seismic events. In accordance with the Delta Flood Protection Act of 1988, this report is submitted to the California Water Commission for approval.

BACKGROUND

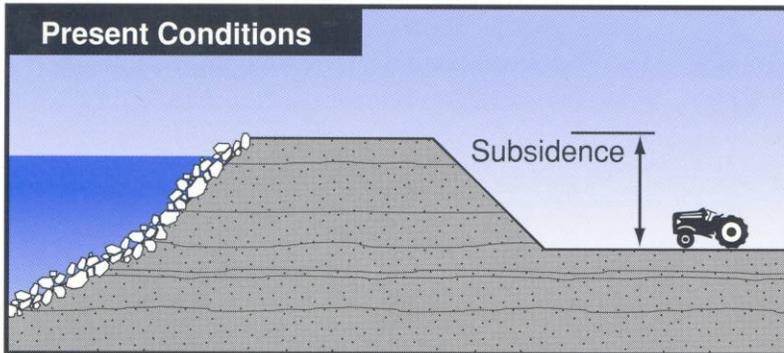
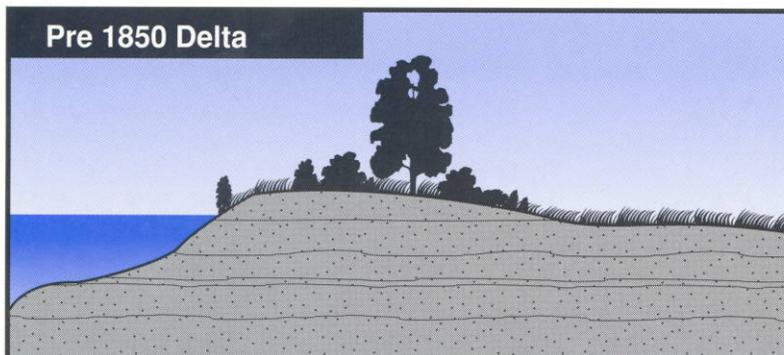
The eight islands in the western Delta region make up a rich agricultural area of about 35,000 acres. About 85 miles of levees, composed mainly of local dredged materials, protect the islands from flooding. Peat soils form most of the levee foundations. While peat is excellent for growing crops, as a foundation material it creates levee maintenance and stability problems. The levee instability problem persists throughout the entire Delta but is critical in the deep peat areas of the western Delta. The problem has existed since the construction of the original 5-foot-high tidal levees, but it has become more acute in recent years due to land subsidence. As cultivation continues and the land subsides, water pressure on the levees increases and more material must be added to create broader and higher levees. In response to subsidence some of today's levees now stand over 30 feet high. U.S. Geologic Survey subsidence investigations,

initiated in 1984, indicate that the primary cause of all Delta island subsidence is accelerated oxidation of peat soils from cultivation and dewatering. Since the islands are below sea level, seepage must be pumped off to lower the water table sufficiently for farming. This seepage picks up and carries off carbon from the aerated soil which contributes to land subsidence. The Department believes further subsidence can be reduced through modified land management practices.

The eight western Delta islands named in Senate Bill 34 are critical to protecting Delta water quality. These islands are adjacent to major Delta channels in the area where fresh and salt waters mix. If a levee fails and an island floods and is not reclaimed, the following long-term problems exist: (1) the area of the mixing zone grows; (2) the rate of fresh and salt water mixing increases; (3) the path for ocean salt water intrusion into the Delta

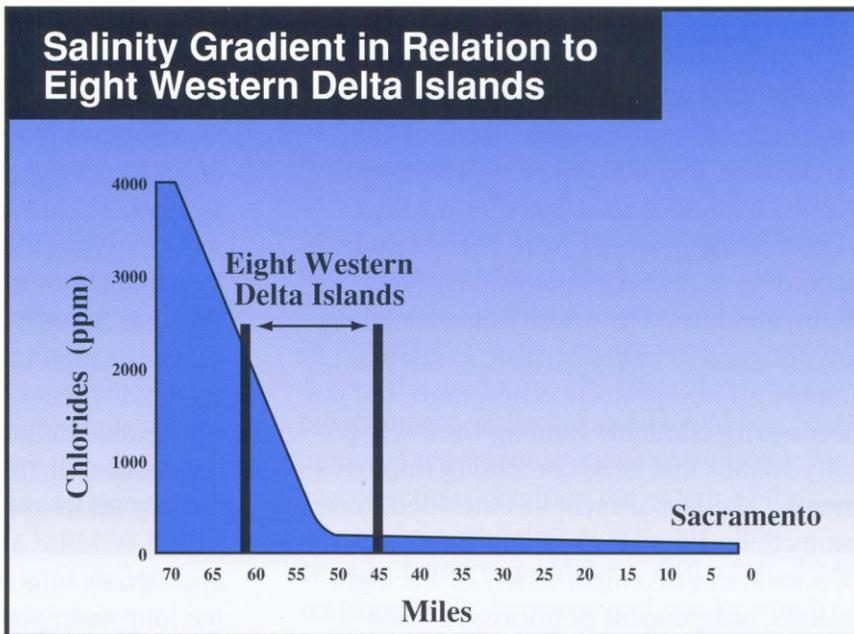
decreases; and (4) the amount of evaporation losses increase. All these factors contribute to increased salinity intrusion and subsequent degradation of the water quality for all beneficial uses in the Delta.

As demonstrated in past flood events, significant short-term water quality impacts can occur even if island reclamation occurs. California's recommended salt level for drinking water is 250 parts per million (ppm) chloride. However, during a previous island flooding under low-flow conditions, chloride levels reached 440 ppm at the Contra Costa Canal Intake. Exports by the State Water



To offset subsidence, today's levees stand over 30 feet high.

Project were interrupted, and several tons of additional salts were exported to Delta water users. Protecting the Delta's water quality is essential, not only because the Delta is the source of drinking water for more than 19 million people, but also because the estuary is a unique and valuable resource. Water exported from the Delta irrigates 4.5 million acres, and many species of fish and wildlife depend on the existing Delta configuration for habitat.



The eight western Delta islands are adjacent to major Delta channels in the area where fresh and salt waters mix.

PROVISIONS OF SENATE BILL 34

Senate Bill 34 directs the Department of Water Resources to develop and implement flood protection projects on the eight western Delta islands. Its primary purpose is the protection of public highways and roads, utility lines and conduits, public facilities, urban areas, water quality, recreation, and other public benefits. The bill lists several provisions to accomplish this goal. Project plans can be a combination of the improvement, rehabilitation, or modification of existing levees for increased flood protection. The Department will investigate options to limit or modify land management practices that have a negative impact on flood control. To complete the work, the Department may undertake the project itself or contract with a local agency. The Department is directed to seek cost-sharing with owners or operators of public facilities and

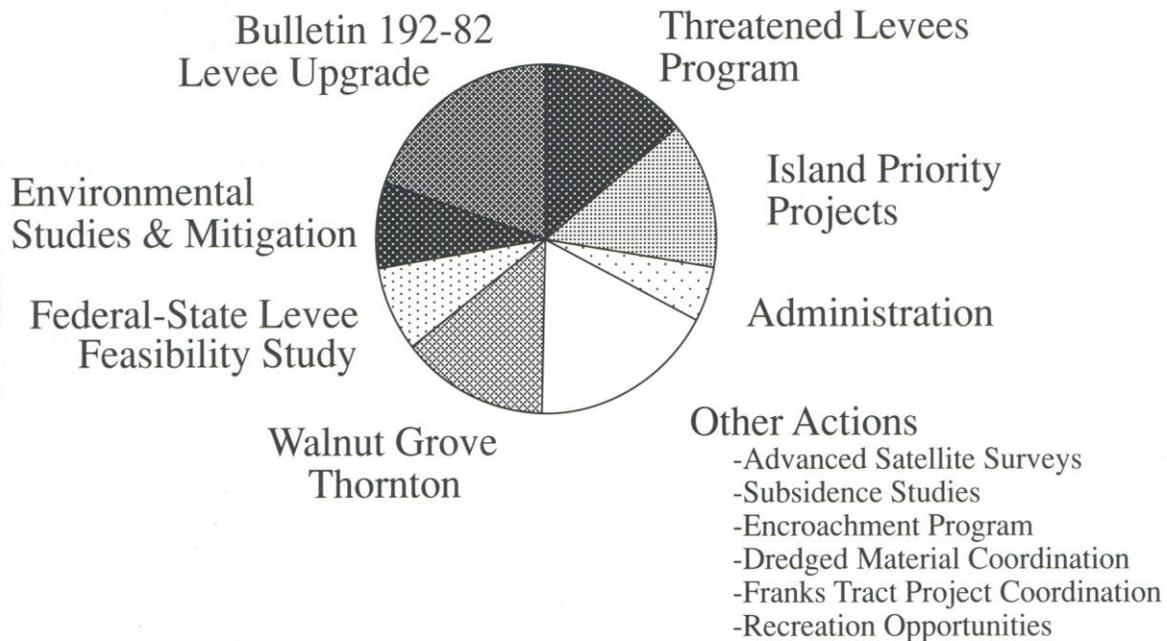
others benefited by the flood control projects and from federal agencies which have an interest in flood protection. Cost sharing has been included in the repair of threatened levee sites conducted in the initial actions and is also included in the flood control planning for the towns of Thornton and Walnut Grove. The Department of Fish and Game is responsible for reviewing levee rehabilitation to ensure no net long-term loss of habitat. DFG shall consider the need for greater flood protection and shall not approve habitat protection plans that are injurious to the integrity of the levee. Guided by these provisions, the Department has prepared a priority list, as mandated by the bill, based on the importance or degree of the public benefit needing protection and the need for flood protective work.

LONG-TERM PLANS

This long-term plan for the eight western Delta islands addresses both island priorities and ongoing island actions and can be used to guide future expenditures. As one method to help guide future decisions, island priorities have been classified according to three categories: high, medium, and low. The priority classifications are designed to help distribute available funds for flood protection programs, but not necessarily eliminate funding for lower priority islands that need continuing improvements. The Department has included flood protection actions that will allow some level of annual improvement to any of the eight islands, independent of priority. These actions include funding for repair of any

threatening conditions that may occur in the future and a staged program to gradually improve levee sections to higher levels of protection, such as the Department's Bulletin 192-82 standards. The Department of Water Resources, Department of Fish and Game and the U.S. Fish and Wildlife Service will review the potential environmental impacts of levee rehabilitation and will coordinate the necessary environmental studies and mitigation. Funding decisions will also utilize advance planning already under way such as the Sherman Island Wildlife Management Plan and other appropriate ongoing projects in preparing the long-term plans.

Early Funding Components

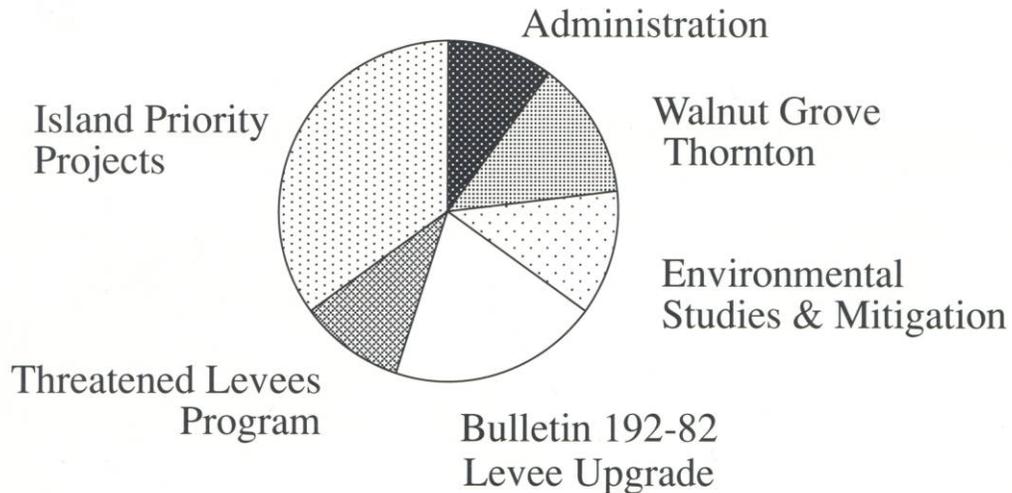


The size of the funding components is designed to show the possible distribution of available funds without specifying actual allotments .

Other actions that utilize funding during the beginning years of this program include land elevation surveys, levee encroachment studies and coordination activities. These programs are needed during the first years of the program to provide important information for the guidance and implementation of later flood control measures. One area of coordination includes a proposed Federal-State Levee Feasibility Study. This study could lead to a federally authorized flood control program in the Delta and allow use of SB 34 expenditures as the local cost sharing component. It is desirable to start this program early since cost-sharing begins concurrently with the feasibility study.

Fish, waterfowl, and other natural resources in the Delta attract a large number of people who enjoy Delta recreation. Senate Bill 34 states, in part, that "plans shall also take into account the most recently updated Delta Master Recreation Plan prepared by the Resources Agency". The Department's goals, therefore, are aimed not only at increasing flood protection for the islands but also providing additional recreational opportunities, and enhancing wildlife habitat. As the long-term island plans progress recreational opportunities and wildlife considerations will be explored with other state and local interests.

Later Funding Components



The "other actions" and the USCE Feasibility Study are not shown in the Later Funding Components since they are expected to be completed in the first 6 years of the program.

Priority Island Actions

Information on island priorities will help guide decisions on future expenditures. As stated in SB 34, the preliminary island priority list is to be based on the importance and degree of public benefits requiring protection and the need for protective work. Public benefits identified by Senate Bill 34 include urbanized areas, wildlife, public utilities, federal or State highways, county roads, and water quality. Island needs were assessed upon observed levee stability issues, compliance with current minimum levee standards, and levee encroachments. The Department staff established a weighted criteria for each identified public benefit and need in order to determine final island rankings.

Bethel Island and Hotchkiss Tract ranked high due to their large populations and the related public services. Sherman Island ranked high due to its importance in protecting the Delta from increased salinity intrusion, and because of the presence of Highway 160 and Western Area Power Administration utilities. In addition, Sherman Island ranked high due to its potential to

provide a large wildlife habitat area and its need for increased levee stability. Twitchell Island, Webb Tract, and Jersey Island were given a medium priority. Twitchell Island and Webb Tract, like Sherman, have the greatest need for increased levee stability. Jersey Island like Sherman is important to protecting Delta water quality. Bradford and Holland Tract were given low priority, based on their relative importance to protecting water quality, the lack of urbanization, and the smaller need for flood control work on these islands.

An important factor used to derive the priority list was the need for improved levee stability. Subsidence is a principal cause of levee instability, and each long-term island plan should consider a program to reduce subsidence. An example of such a plan is the West Delta Water Management Program. This program is based on the Sherman Island Wildlife Plan prepared by a consulting biologist for the Department of Water Resources and the Department of Fish and Game.



All Island Actions

In addition to island priorities, the Department has included flood protection actions that will allow some level of regular improvement to any of the eight islands, independent of priority.

THREATENING LEVEE CONDITIONS

Many of the recent Delta flooding events have been attributed to levee instability, insufficient levee sections, inadequate foundation strength, or high-water pressure are factors which increase the probability of island floodings. Other mechanisms that may cause flooding include levee overtopping and piping or excessive seepage. The effects of seismic events on Delta levees are unknown. An important program objective is to increase levee stability in areas of threatened conditions. Under the Special Flood Control Projects, the major initial action occurring in the 1989-90 fiscal year is the investigation of threatened levee sites

on the eight western Delta islands. To date, nine sites on six islands have been identified by local engineers. Drilling, logging, and testing for the sites have been completed. A report entitled "Delta Levee Special Projects Investigation Sacramento-San Joaquin Delta", prepared by the Department, summarizes the data for the sites and proposes possible remedial actions.

Local districts engineers will continue their analysis of levee conditions. In threatened areas, the Department will assist the local districts in performing geotechnical investigations. When requested, the Department will also aid with the design and construction of levee rehabilitation. Because of the weak peat foundations in the Delta, ongoing settlement, cracking, seepage, and instability are expected. Several hundred thousand dollars per year are expected to be contributed by the State to cost share future investigations and repair threatening conditions.

Because of the weak peat foundations in the Delta, on-going settlement, cracking, seepage, and instability are expected. Several hundred thousand dollars per year are expected to be contributed by the State to cost share future investigations and repair threatening conditions.

SUBSIDENCE STUDIES

Subsidence of peat soils is a major concern throughout the Delta. For every foot an island drops, there is an exponential increase in water pressure on the levee. Increased water pressure increases the probability of flooding if levees are not significantly widened. A 1978 report entitled "Probability of Failure of Levees in the Sacramento-San Joaquin Delta, California", submitted to the U.S. Army Corps of Engineers states that throughout the entire Delta, "Without further subsidence, the expected number of failures over the next 40 years would be about 12. With continuing subsidence at three inches per year, the expected number of failures is 29."

Senate Bill 34 recognizes the significant impacts caused by subsidence and directs the Department to study and monitor this problem. Senate Bill 34 gives the local agency the option to acquire easements up to 400 feet in width along the levee in areas where the Department determines an easement is necessary to control subsidence and maintain structural stability. The easement will restrict the use of land to the propagation of wildlife habitat. The cost of acquisition of easements shall be reimbursable by the Department. As part of the program to acquire easements, the Department will continue to investigate mitigation credit, cost-sharing, and funding priority.

"Without further subsidence, the expected number of failures over the next 40 years would be about 12. With continuing subsidence at three inches per year, the expected number of failures is 29."

In addition, the Department is contributing \$130,000 in 1990 to the U.S. Geologic Survey to implement a program studying the causes of Delta subsidence. Preliminary monitoring to track deep and shallow subsidence

concluded that most Delta island subsidence is due to surface causes. A USGS fact sheet summarizing these findings is being printed. Continuing studies are quantifying subsidence rates and focusing on the underlying physical and chemical processes that lead to surface subsidence.

Deep extensometers that record ground water and land elevation changes were placed on Bethel and Bacon Islands. Shallow extensometers were placed on Jersey and Sherman Islands and Orwood Tract. In addition to measuring subsidence at the shallow extensometers, the USGS is monitoring carbon loss.

From preliminary data, it appears that water management practices substantially influence subsidence rates. Cultivation practices and a lowered water table dramatically increase carbon losses from the peat soils. Dissolved carbon removal in the drain water and CO₂ gas discharge from the peat surface appear to be the primary causes for a 0.05mm per day subsidence rate on Sherman Island. The Department recommends spending an additional \$100,000 to better understand the mechanisms affecting shallow subsidence.

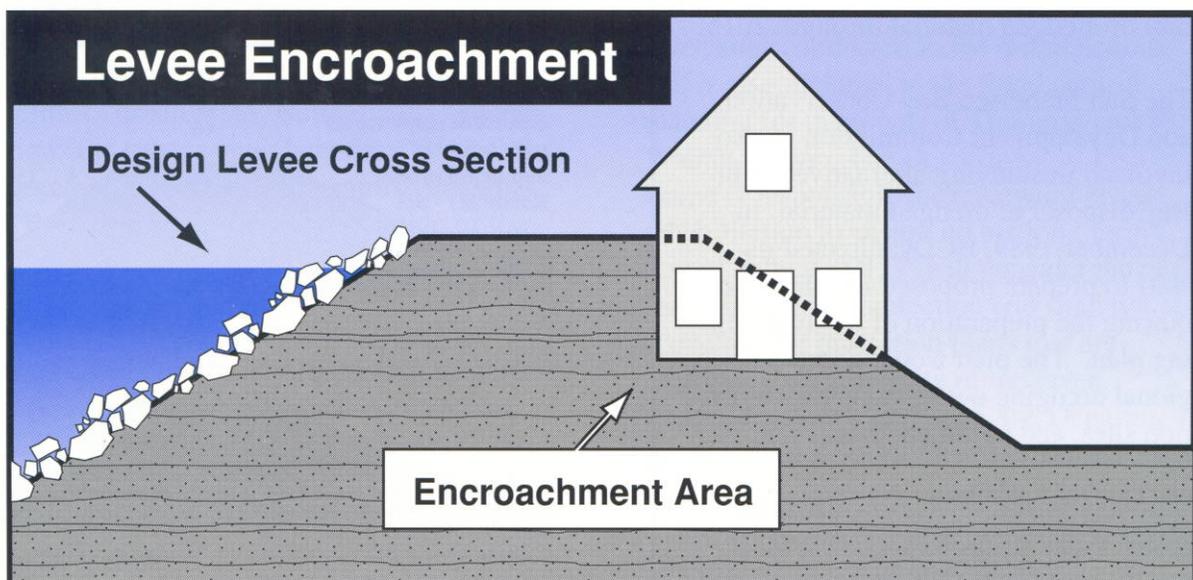
GLOBAL POSITIONING SYSTEM

The Department is also working closely with the USGS to establish verified elevations in the Delta. An advanced survey method uses satellites to ensure future levee improvements provide adequate freeboard for high water conditions. Field observations for the Global Positioning System survey performed by the Department were completed April 17, 1989 on the expanded Delta network. The survey encompasses a large area connecting 62 stations within an area roughly bounded by Sacramento, Winters, San Francisco, Tracy, Stockton, and Lodi. Data for the 17-station primary net was sent to the National Geodetic Survey on July 18, 1989 for verification. Observation data on the 45-supplemental stations is being formatted and will also be forwarded to the NGS. Approval and publication of the data by the NGS appears to be several years away. In the meantime, the USGS plans to produce an interim report on Delta elevations, with assistance from the Department. The Department recommends spending approximately \$10,000 a year for the next five years to complete GPS related work.

ENCROACHMENT PROGRAM

Encroachments reduce the level of protection provided by the levee system. Homes constructed on Bethel Island and Hotchkiss Tract before local and county zoning ordinances were enacted, were often built directly on the levee. As the island floor subsided and levees were raised, these structures became embedded in the levee.

In August 1989, the Department conducted a survey documenting 130 landside levee encroachments on Bethel and Hotchkiss. Staff prepared topographic data and plotted levee cross-sections detailing the extent of the encroachments for local officials. Encroached structures make it difficult to detect seepage, boils, burrows, and cracks which may cause levee instability. In addition, future improvements to the levee may be restricted by the inability to access certain sections of the levee. The Department recommends spending \$30,000 per year to assist local decision makers in determining solutions to the encroachment problem. Some of these funds will be spent to survey levee bulkheads and waterside encroachments on these two islands.



DREDGING

Another continuing project involves the use of imported dredged material for levee rehabilitation. The Corps of Engineers estimates that between 1990 and 1995 they will need to relocate 19 million cubic yards of dredged material from ship channels to handle the new larger container ships. This total is in addition to the approximately 40 million cubic yards of material produced by maintenance dredging projects over the next 5 years. Existing in-Bay relocation sites are near capacity, and the environmental problems associated with in-Bay and ocean disposal have necessitated studies identifying new relocation sites.

Several organizations list the Delta as a possible site for dredged material relocation. The Corps of Engineers' Long Term Management Strategy for dredged material has produced a scoping report citing the Delta as a potential relocation site. A reconnaissance study is under way by the Corps and their consultants to identify relocation options within the Delta. The objective of their studies is to develop a long-term management plan for the relocation of dredged material through 2015.

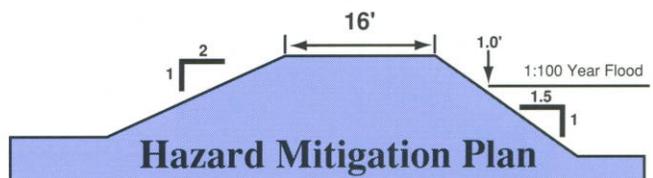
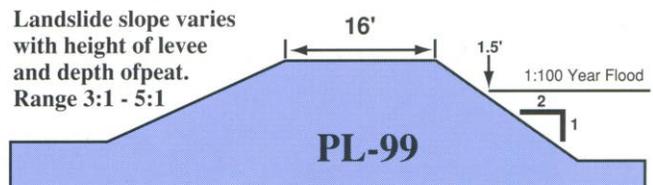
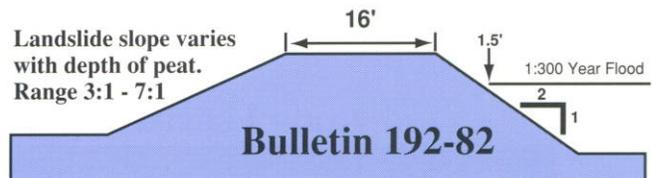
The San Francisco Bay Conservation and Development Commission is also involved in studying alternatives to in-Bay disposal of dredged material. In December 1989, BCDC directed its staff to prepare proposed legislation requiring the preparation of a Bay dredging plan. The plan would address regional dredging needs, potential relocation sites, and pollutant testing criteria.

Through upland relocation, dredged material can be used as a resource. It can be used to create new wetlands and

strengthen levees protecting existing habitat. As local sources of fill material are depleted, new economical sources must be located. The Department, in coordination with the Corps, the Port of Oakland and the Regional Water Quality Control Board, is investigating a possible pilot project to determine the viability of relocating Bay material in the Delta. A program such as this could greatly reduce costs to local reclamation districts. The Department recognizes, however, that imported fill material must be carefully analyzed to prevent degradation of Delta water quality. The Department recommends expending \$30,000 a year to help coordinate these actions.

LEVEE STANDARDS

Agricultural



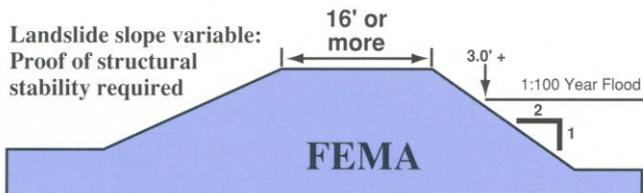
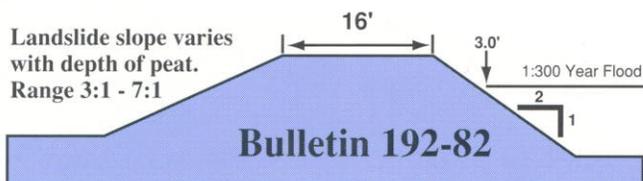
LEVEE UPGRADE

Recently, the Delta Levees Subventions program has been oversubscribed. Claims by the islands and tracts participating in the program are projected to exceed the annual \$6 million allocation for some time. To ensure flood protection is not delayed by competition for Subventions funding, eligible levee rehabilitation and maintenance for the eight western Delta islands not reimbursed under the Subventions program will be funded through the Special Flood Control Projects. Expenditures for fiscal year 1989-90 are expected to be approximately two million dollars. About one million dollars per year will be allocated for this program thereafter.

Senate Bill 34 states that plans for maintenance and improvement of non-project

levees be "compatible with the plan for improvement of the Delta levees as set forth in Bulletin 192-82 of the Department." As shown in the figure below, the Department's standards are more restrictive than the Corps' PL-99 standards. In addition, Bulletin 192-82 distinguishes between urban and agricultural areas, requiring greater protection for the populated areas. Achieving Bulletin 192-82 standards will allow local reclamation districts to seek Corps certification for PL-99 funds. In 1980, the Corps stopped all post-disaster rehabilitation assistance in the Delta until levees could provide dependable and adequate protection from flooding. From 1980-86, the Corps had no levee standard for the Delta. In 1987, they developed a special PL-99 standard for the Delta.

Urban



Since 1980, levee failures have occurred on 17 islands and tracts. As a result, the Federal Emergency Management Agency established flood hazard mitigation plan levee standards. Reclamation Districts must show progress in improving their levee system and ultimately meet HMP standards by 1991 to be eligible for future federal disaster assistance in the Delta.

The State has been active in the Delta since 1973 when it began its Delta Levees Subventions Program. The Department established both urban and agricultural standards in Bulletin 192-82 as a goal.

In 1980, the Corps of Engineers stopped all post-disaster rehabilitation assistance in the Delta until levees could provide dependable and adequate protection from flooding. In 1987, they developed a special PL-99 standard for the Delta.

ENVIRONMENTAL CONCERNS

Senate Bill 34 requires the Department to coordinate with the Department of Fish and Game to prevent or minimize impacts to fish and wildlife habitat in the Delta.

Considerable planning has occurred under the fast-track program of the Special Flood Control Projects. Fish and Game staff has promptly inspected proposed work sites to assure no net long-term loss of habitat. The two agencies are currently establishing detailed procedures to mitigate the loss of habitat resulting from future levee rehabilitation. Department of Fish and Game staff

will help evaluate the potential environmental effects of levee rehabilitation. To protect fish and wildlife habitat, project plans are to include provisions that are determined to be necessary and not injurious to the integrity of flood control works. Much of the levee rehabilitation will cause minor short-term loss of habitat; however, it will increase the long-term protection for thousands of acres of important habitat on the islands. Coordination with the Department of Fish and Game, the Department of Parks and Recreation, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency will help prevent or mitigate detrimental effects.



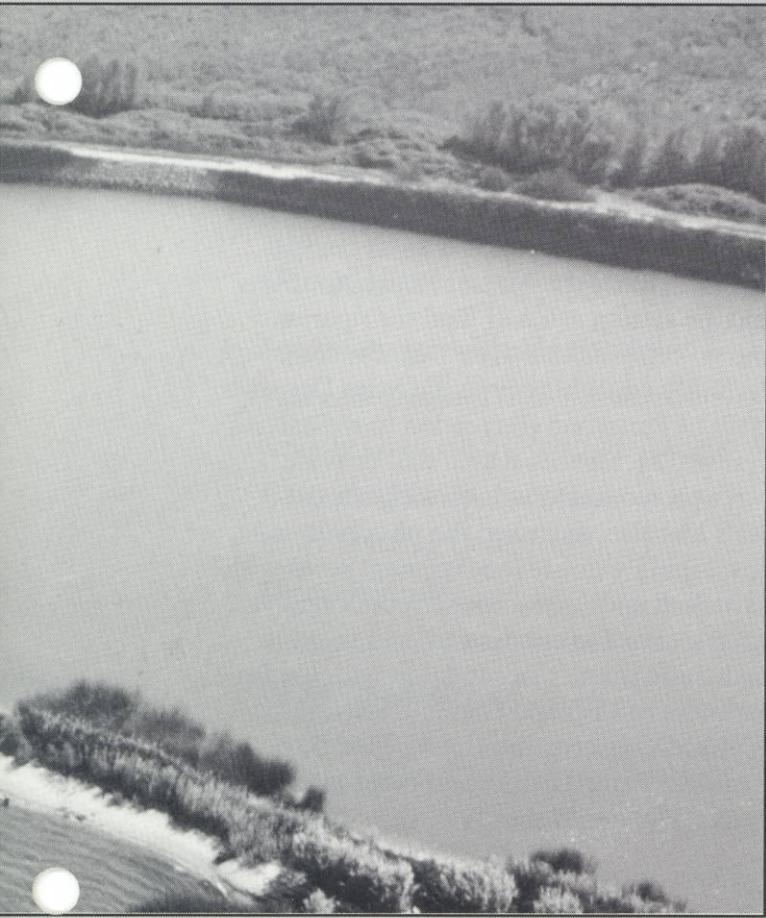
RELATED DELTA WATER MANAGEMENT PROGRAMS

According to the Department of Fish and Game, during the past 100 years, California has lost over 90 percent of its once-flourishing wetlands--from five million acres in the 1800s to under 425,000 acres today. In 1979, the California Legislature unanimously approved Senate Concurrent Resolution 28 calling for a 50 percent increase in existing wetlands by the year 2000.

WEST DELTA UPDATE

The West Delta Water Management Program includes objectives to improve flood protection, enhance wildlife and wetland habitat, and protect Delta water quality in the western

part of the Sacramento-San Joaquin Delta. The focus of the program is the purchase of land on Sherman Island to create and implement a wildlife management plan. Altering land use practices on Sherman Island could provide up to 10,000 acres of managed wildlife, waterfowl, and wetland habitat and also reduce ongoing subsidence by halting cultivation. Continued subsidence of Delta lands increases the probability of flooding. If Sherman Island flooded, it would inundate Highway 160 and utilities, and degrade Delta water quality and the water supply reliability of the State Water Project, Contra Costa Canal, and Central Valley Project.



Franks Tract levee remnants provide wave protection to the neighboring islands. This remnant not only provides protection to Holland Tract but its beach levees also create recreational opportunities.

The Department of Parks and Recreation is currently studying the feasibility of constructing additional islands to provide recreational opportunities around Franks Tract State Recreation Area. To the extent that these islands increase wave protection for Bethel Island, Holland and Webb Tracts, the Department of Water Resources is proposing to participate in the program.

(Photo courtesy of State Department of Parks and Recreation)



*Special Flood Control Projects can contribute to the important creation of wetlands in the Pacific Flyway while arresting the unfavorable subsidence conditions which increase the probability of island floodings.
(Photo courtesy of the State Department of Fish and Game)*

An Initial Study/Negative Declaration, which covers the implementation of the Wildlife Management Plan, has been completed and submitted to the State Clearinghouse for circulation. The land appraisals have been completed. The State will negotiate with island landowners to determine their interest in voluntarily selling their property for the wildlife management area.

FRANKS TRACT, JERSEY ISLAND, AND TWITCHELL ISLAND PROPOSALS

Senate Bill 34 states that projects may include the conveyance of interests in land to limit or modify land management practices which have a negative impact on flood

control facilities. The bill encourages establishment of recreational areas compatible with the Delta Master Recreation Plan and the setting aside of land for riparian and wildlife habitat. The Department is currently consulting with the State Department of Parks and Recreation to reestablish Franks Tract levees which will provide wave protection to neighboring islands. Staff has also discussed the possibility of developing wildlife management areas with Twitchell and Jersey Island representatives. Landowners have indicated an interest in such a program. Coordination with the Department of Fish and Game, USBR, the Wildlife Conservation Board, East Bay Regional Parks District and other interested parties will begin shortly.

CHAPTER 28

An act to amend Section 12987 of, to amend, repeal, and add Section 12986 of, to add Sections 12912.5, 12992, and 12993 to, to add Part 4.8 (commencing with Section 12300) to Division 6 of, and to add and repeal Section 12987.5 of, the Water Code, relating to flood control, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor March 11, 1988. Filed with Secretary of State March 14, 1988.]

LEGISLATIVE COUNSEL'S DIGEST

SB 34, Boatwright. Flood control: delta levees.

Existing law authorizes financial assistance to local agencies for maintenance and improvement of levees in the Sacramento-San Joaquin Delta which are not project facilities under the State Water Resources Law of 1945, subject to approval by the Reclamation Board of plans for the maintenance and improvement of the levees. No costs may be reimbursed if the entire cost incurred per mile of levee is \$1,000 or less, 50% of any costs incurred in excess of \$1,000 per mile may be reimbursed, and the maximum total reimbursement is limited to \$2,000,000 annually.

This bill would, until January 1, 1999, authorize reimbursement for 75% of any costs incurred in excess of \$1,000 per mile of levee and delete the \$2,000,000 per year limitation. The bill would, until January 1, 1999, authorize the board to provide for an advance to an applicant not to exceed 75% of the estimated state share. The bill would also require a local agency to first enter into an agreement to indemnify and hold the state harmless from any liability for damages, except that caused by gross negligence, that may arise out of the approvals, agreements, inspections, or work performed and would also make nonsubstantive changes and would require applicants to apply for federal disaster assistance, as specified. The bill would also require the plans approved by the board to include provision for the protection of fish and wildlife habitat determined to be necessary by the Department of Fish and Game, would specify criteria for determining those requirements, and would require the plans to include provisions to acquire easements, as prescribed, along levees, where desirable to maintain structural stability of the levee.

The bill would, until January 1, 1999, create the Delta Flood Protection Fund, would declare legislative intent to appropriate \$12,000,000 each year to the fund through fiscal year 1998-99 from specified tidelands oil and gas revenues, and would declare legislative intent to annually appropriate from the fund \$6,000,000 for local assistance for the maintenance and improvement of delta

92 50

levees pursuant to the above provisions and \$6,000,000 for special delta flood protection projects and for subsidence studies and monitoring. The bill would require the Department of Water Resources to develop and implement, as prescribed, a program of flood control projects on specified islands in the delta and for the Towns of Thornton and Walnut Grove, which has as its primary purpose the protection of discrete and identifiable public benefits, as described. The bill would prescribe related requirements for the funding of projects.

The bill would require \$5,000,000 of the tidelands oil and gas revenues deposited in the California Water Fund to be deposited annually in a special account for appropriation and expenditure by the Department of Water Resources for mitigation of specified adverse effects in (1) the delta, Suisun Marsh, and San Francisco Bay caused by historic upstream depletions and diversions and for other nonreimbursable costs and (2) the Salton Sea and its tributaries.

The bill would make legislative findings and declarations.

The bill would declare that it is to take effect immediately as an urgency statute.

The people of the State of California do enact as follows:

SECTION 1. This act shall be known and may be cited as the Delta Flood Protection Act of 1988.

SEC. 2. The Legislature hereby finds and declares as follows:

(a) The value and public benefit of preserving the Sacramento-San Joaquin Delta, as declared in Section 12981 of the Water Code, is reaffirmed, as is the recognition that not all islands, because of the physical condition of their soils and foundations, can economically justify protection or increased development.

(b) In recent years, federal, state, and local expenditures for disaster assistance have been very high, and hazard mitigation efforts to avoid disasters are needed.

(c) Other lands have been benefited by flood control levees at the expense of the delta through loss of overbank storage which causes more flood water to reach the delta.

(d) Long-term solutions for the delta will be facilitated by short-term efforts to stabilize the existing situation.

SEC. 3. Part 4.8 (commencing with Section 12300) is added to Division 6 of the Water Code, to read:

PART 4.8. DELTA FLOOD PROTECTION

CHAPTER 1. DELTA FLOOD PROTECTION FUND

12300. (a) The Delta Flood Protection Fund is hereby created in the State Treasury. There shall be deposited in the fund all moneys appropriated to the fund and all income derived from the

92 80

investment of moneys that are in the fund.

(b) It is the intent of the Legislature to appropriate, in accordance with Section 12938, twelve million dollars (\$12,000,000) each year through fiscal year 1998-99 to the Delta Flood Protection Fund from moneys deposited in the California Water Fund pursuant to subdivision (b) of Section 6217 of the Public Resources Code. It is further the intent of the Legislature to appropriate annually moneys in the Delta Flood Protection Fund to the department for expenditure and allocation, without regard to fiscal years, in the following amounts and for the following purposes:

(1) Six million dollars (\$6,000,000) annually for local assistance under the delta levee maintenance subventions program pursuant to Part 9 (commencing with Section 12980), and for the administration thereof.

(2) Six million dollars (\$6,000,000) annually for special delta flood protection projects under Chapter 2 (commencing with Section 12310) and for subsidence studies and monitoring. These funds shall only be allocated for projects on Bethel, Bradford, Holland, Hotchkiss, Jersey, Sherman, Twitchell, and Webb Islands in the delta and for the Towns of Thornton and Walnut Grove.

(c) Any moneys unexpended at the end of a fiscal year shall revert to the Delta Flood Protection Fund and shall be available for appropriation by the Legislature for the purposes specified in subdivision (b).

12301. The Delta Flood Protection Fund is hereby abolished on January 1, 1999, and all unencumbered moneys in the fund are transferred to the General Fund.

CHAPTER 2. SPECIAL FLOOD CONTROL PROJECTS

12310. As used in this chapter, the following terms have the following meanings:

(a) "Local public agency" means a reclamation district or levee district or other public agency responsible for the maintenance of a nonproject levee as defined in subdivision (d) of Section 12980.

(b) "Project" means the flood control improvement constructed or interests in land acquired pursuant to this chapter.

(c) "Department" means the Department of Water Resources.

(d) "Delta" means the Sacramento-San Joaquin Delta as described in Section 12220.

12311. (a) The department shall develop and implement a program of flood control projects on Bethel, Bradford, Holland, Hotchkiss, Jersey, Sherman, Twitchell, and Webb Islands in the delta and for the Towns of Thornton and Walnut Grove. This program shall have, as its primary purpose, the protection of discrete and identifiable public benefits, including the protection of public highways and roads, utility lines and conduits, and other public facilities, and the protection of urbanized areas, water quality,

92 100

recreation, and other public benefits.

(b) Notwithstanding subdivision (a), the department shall develop and recommend a plan of action, including alternatives, for flood control for the Towns of Thornton and Walnut Grove and shall submit the plan to the Legislature by January 1, 1989. The department shall not allocate any funds for implementation of the plan of action for flood control for the Towns of Thornton and Walnut Grove until a plan is approved by the Legislature.

12312. The department may expend any moneys available to it pursuant to paragraph (2) of subdivision (b) of Section 12300 for the purposes of this chapter. In addition, the department shall seek a sharing of costs with the beneficiaries or owners or operators of the public facilities benefited by the flood protection projects. The department shall also seek cost sharing with, or financial assistance from, federal agencies which have programs applicable to, or which have an interest in, the flood protection projects.

12313. (a) The department shall develop a list of areas where flood control work is needed to protect public facilities or provide public benefits. In developing the list, the department shall consult with all appropriate federal, state, and local agencies. The list shall establish a priority for the areas based upon both of the following:

(1) The importance or degree of public benefit needing protection.

(2) The need for flood protective work.

(b) The list shall be submitted to the California Water Commission for approval, and shall be updated by the department, with the approval of the California Water Commission, as the department may deem appropriate.

12314. Guided by the approved priority list developed pursuant to Section 12313, the department shall develop project plans to accomplish the needed flood protection work, in cooperation with the local public agency, the public beneficiary, and the Department of Fish and Game.

The plans shall be subject to the approval of the appropriate local public agency or agencies and subject to any cost-sharing agreement the department may have entered into under Section 12312. Project plans may include, or be a combination of, the improvement, rehabilitation, or modification of existing levees and the conveyance of interests in land to limit or to modify land management practices which have a negative impact on flood control facilities. Project plans shall include provision for the protection of fish and wildlife habitat determined to be necessary by the Department of Fish and Game and not injurious to the integrity of flood control works. The Department of Fish and Game shall consider the value of the riparian and fisheries habitat and the need to provide greater flood protection in preparing its requirements, and shall not approve any plan which calls for the use of channel islands or berms with significant riparian communities as borrow sites for levee repair

92 130

materials, unless fully mitigated, or any plans which will result in a net long-term loss of riparian, fisheries, or wildlife habitat.

12315. Projects shall be undertaken and completed in accordance with the approved project plans. Project works may be undertaken by the department or, at the department's option, by the local public agency pursuant to an agreement with the department.

12316. In addition to any obligations assumed under an agreement with the department and to the extent consistent with that agreement, the local public agency shall do all of the following:

(a) Provide construction access to lands or rights-of-way which it owns or maintains for flood control purposes or for purposes with which the project's required uses are compatible and necessary to complete the project.

(b) Maintain the completed project.

(c) Apply for federal disaster assistance, whenever eligible, under Public Law 93-288.

(d) Hold and save the department, any other agency or department of the state, and their employees free from any and all liability for damages, except that caused by gross negligence, that may arise out of the construction, operation, or maintenance of the project.

(e) Acquire easements up to 400 feet in width from the crown along levees in areas where the department determines that such an easement is desirable to maintain structural stability of the levee. The easement shall (1) restrict the use of the land to open-space uses with minimum tillage of the soil, including, without limitation, nontillable crops such as pasture, the propagation of wildlife habitat, and other compatible uses, (2) provide full access to the local agency for levee maintenance and improvement purposes, and (3) allow the owner to retain reasonable rights of ingress and egress as well as reasonable rights of access to the waterways for water supply and drainage. The local public agency costs of acquisition of the easements shall be reimbursable by the department from moneys appropriated pursuant to paragraph (2) of subdivision (b) of Section 12300.

(f) Comply with all mitigation requirements required pursuant to this chapter.

SEC. 4. Section 12912.5 is added to the Water Code, to read:

12912.5. Of the amounts deposited in the California Water Fund pursuant to subdivision (b) of Section 6217 of the Public Resources Code, five million dollars (\$5,000,000) shall be deposited annually in a special account in the California Water Fund for appropriation by the Legislature to the Department of Water Resources for purposes of mitigation of adverse effects to water quality, fisheries, or wildlife in (1) the Sacramento-San Joaquin Delta, Suisun Marsh, and San Francisco Bay caused by historic upstream depletions and diversions, as nonreimbursable costs under Section 11912 and for other nonreimbursable costs, and (2) the Salton Sea and its tributaries.

SEC. 5. Section 12986 of the Water Code is amended to read: 12986. (a) It is the intention of the Legislature to reimburse an eligible local agency pursuant to this part for costs incurred in any year for the maintenance or improvement of nonproject levees as follows:

(1) No costs incurred shall be reimbursed if the entire cost incurred per mile of nonproject levee is one thousand dollars (\$1,000) or less.

(2) Seventy-five percent of any costs incurred in excess of one thousand dollars (\$1,000) per mile of nonproject levee shall be reimbursed.

(b) This section shall remain in effect only until January 1, 1999, and as of that date is repealed, unless a later enacted statute, which is enacted before January 1, 1999, deletes or extends that date.

SEC. 6. Section 12986 is added to the Water Code, to read:

12986. (a) It is the intention of the Legislature to reimburse from the General Fund an eligible local agency pursuant to this part for costs incurred in any year for the maintenance or improvement of nonproject levees as follows:

(1) No costs incurred shall be reimbursed if the entire cost incurred per mile of levee is one thousand dollars (\$1,000) or less.

(2) Fifty percent of any costs incurred in excess of one thousand dollars (\$1,000) per mile of levee shall be reimbursed.

(3) The maximum total reimbursement from the General Fund shall not exceed two million dollars (\$2,000,000) annually.

(b) This section shall become operative on January 1, 1999.

SEC. 7. Section 12987 of the Water Code is amended to read: 12987. Local agencies maintaining nonproject levees shall be eligible for reimbursement pursuant to this part upon submission to and approval by the board of plans for the maintenance and improvement of the nonproject levees, including plans for the annual routine maintenance of the levees, in accordance with the criteria adopted by the board.

The plans shall also be compatible with the plan for improvement of the delta levees as set forth in Bulletin No. 192-82 of the department, dated December 1982, and as approved in Section 12225, and shall include provisions to acquire easements up to 400 feet in width from the crown along levees in areas where the department determines that such an easement is desirable to maintain structural stability of the levee. The easement shall

(1) restrict the use of the land to open-space uses with minimum tillage of the soil, including, without limitation, nontillable crops such as pasture, the propagation of wildlife habitat, and other compatible uses, (2) provide full access to the local agency for levee maintenance and improvement purposes, and (3) allow the owner to retain reasonable rights of ingress and egress as well as reasonable rights of access to the waterways for water supply and drainage. The local agency cost of acquisition of the easements shall be

reimbursable by the department from moneys appropriated pursuant to paragraph (1) of subdivision (b) of Section 12300. The plans shall also include provision for protection of the fish and wildlife habitat determined to be necessary by the Department of Fish and Game and not injurious to the integrity of the levee. The Department of Fish and Game shall consider the value of the riparian and fisheries habitat and the need to provide safe levees in preparing its requirements. The Department of Fish and Game shall not approve any plan which calls for the use of channel islands or berms with significant riparian communities as borrow sites for levee repair material, unless fully mitigated, or any plans which will result in a net long-term loss of riparian, fisheries, or wildlife habitat.

The plans shall also take into account the most recently updated Delta Master Recreation Plan prepared by the Resources Agency.

Upon approval of the plans by the board, the local agencies shall enter into an agreement with the board to perform the maintenance and improvement work, including the annual routine maintenance work, specified in the plans. If applications for state funding in any year exceed the state funds available, the board shall apportion the funds among those levees or levee segments that are identified by the department as most critical and beneficial, considering the needs of flood control, water quality, recreation, and wildlife.

SEC. 8. Section 12987.5 is added to the Water Code, to read:

12987.5. (a) In an agreement entered into under Section 12987, the board may provide for an advance to the applicant in an amount not to exceed 75 percent of the estimated state share. The agreement shall provide that no advance shall be made until the applicant has incurred costs averaging one thousand dollars (\$1,000) per mile of levee.

(b) Advances made under subdivision (a) shall be subtracted from amounts to be reimbursed after the work has been performed. If the department finds that work has not been satisfactorily performed or where advances made actually exceed reimbursable costs, the local agency shall promptly remit to the state all amounts advanced in excess of reimbursable costs. If advances are sought, the board may require a bond to be posted to ensure the faithful performance of the work set forth in the agreement.

(c) This section shall remain in effect only until January 1, 1999, and as of that date is repealed, unless a later enacted statute, which is enacted before January 1, 1999, deletes or extends that date.

SEC. 9. Section 12992 is added to the Water Code, to read:

12992. Before any plan is approved, agreement entered into, or moneys advanced or reimbursed under this part, the local agency shall first enter into an agreement with the board indemnifying and holding and saving the State of California, the board, the department, any other agency or department of the state, and their employees free from any and all liability for damages, except that caused by gross negligence, that may arise out of the approvals,

agreements, inspections, or work performed under this part.

Any funds appropriated for any of the purposes of this part may be used to satisfy any judgment against the state covered by this section, pending indemnification by the local agency.

SEC. 10. Section 12993 is added to the Water Code, to read:

12993. Applicants shall apply for federal disaster assistance, whenever eligible, under Public Law 93-288. If, and to the extent that, it is determined that the work performed does not qualify for federal disaster assistance, the applicant may apply for reimbursement under Section 12986, and the costs shall be deemed incurred by the applicant in the year in which the latter application is filed.

SEC. 11. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to provide urgently needed flood protection at the earliest possible time, it is necessary that this act take effect immediately.

Single copies of this report may be obtained Free
from:

Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001