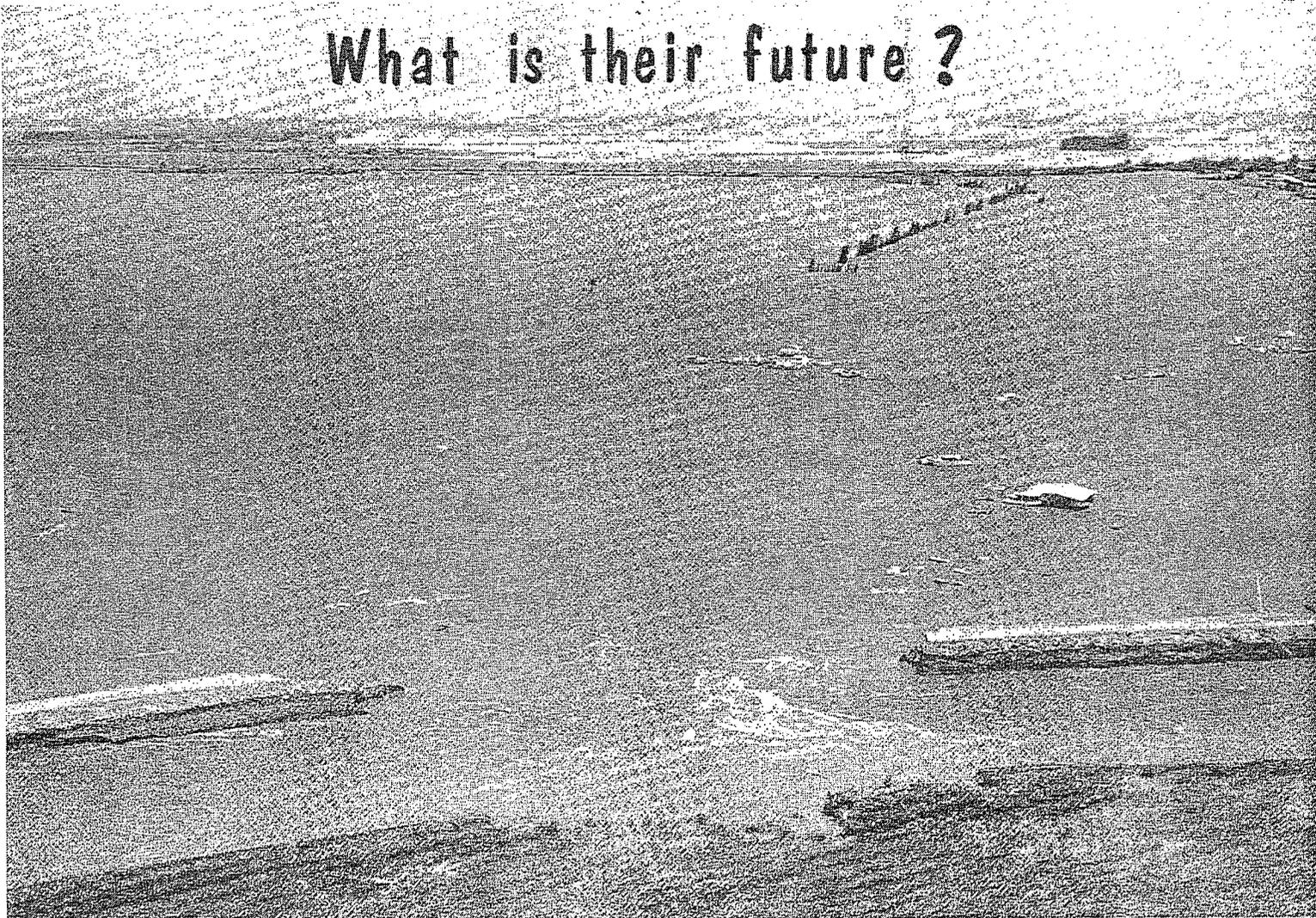


P. 9, 7, 12

STATE OF CALIFORNIA
The Resources Agency
Department of Water Resources

DELTA LEVEES

What is their future?



A Presentation of alternative courses of action for the
Sacramento-San Joaquin Delta levees.

September 1973

NORMAN B. LIVERMORE, JR.
Secretary for Resources
The Resources Agency

RONALD REAGAN
Governor
State of California

JOHN R. TEERINK
Director
Department of Water Resources



ABOVE: Floodfighting crew working on Turnbull Island levee during high

COVER PHOTO: Aerial view of the

STATE OF CALIFORNIA—RESOURCES AGENCY

RONALD REAGAN, Governor

DEPARTMENT OF WATER RESOURCES

P.O. BOX 388
SACRAMENTO
95802



FELLOW CALIFORNIAN'S:

The Sacramento-San Joaquin Delta is an irreplaceable and fragile resource of nature and man. Without adequate levees, the Delta as we know it today will be lost.

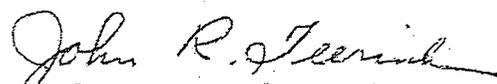
The levees originally were built only to reclaim the rich Delta soil and protect it from flooding. Today they serve many diverse needs. They protect valuable farms and farmland, cities and towns, industries, recreational developments, highways and railroads, natural gas fields, utilities, major aqueducts and many other works of man from the ravages of floods. The scenic waterways provide a habitat for many species of fish and wildlife and make the Delta one of California's major recreation areas.

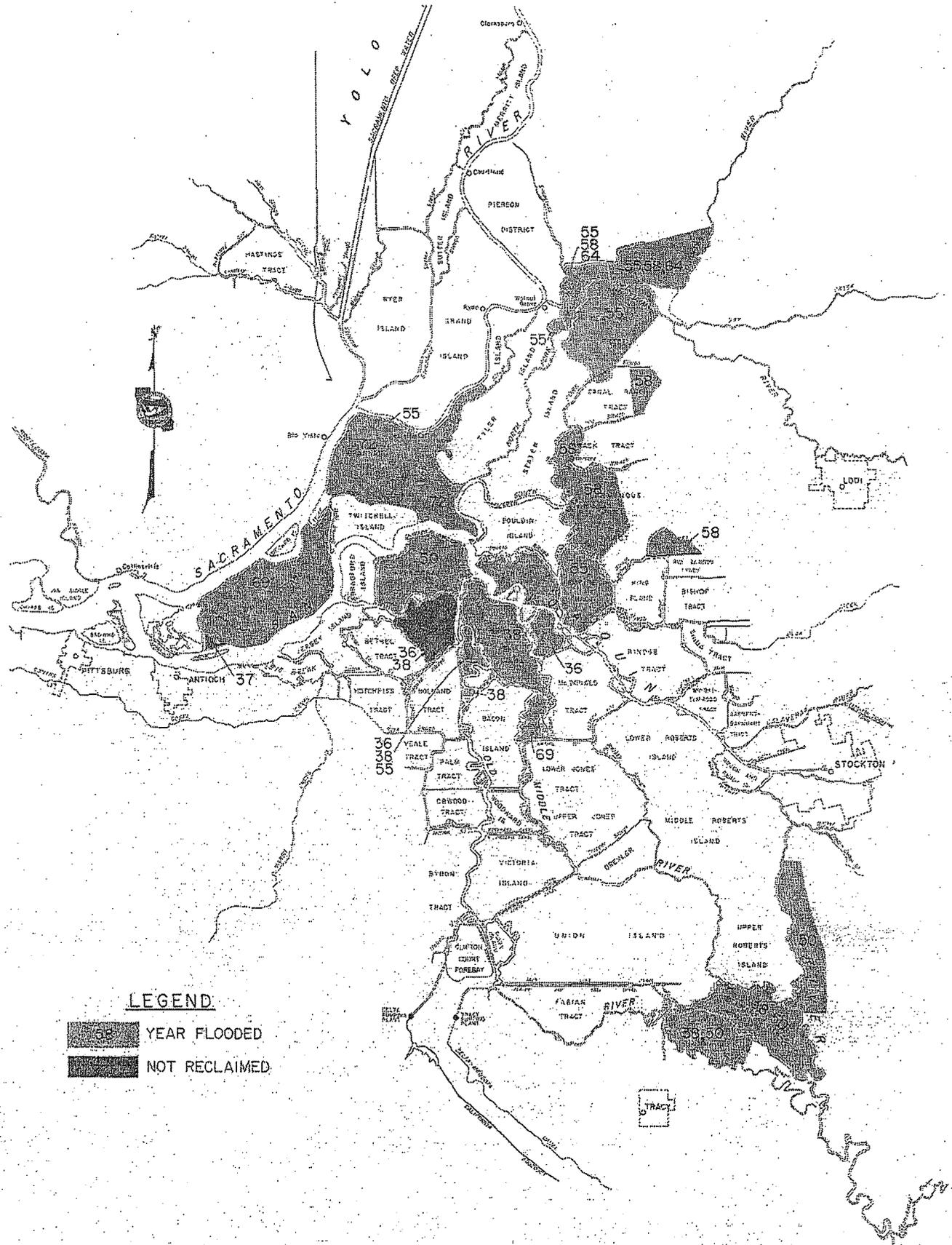
Yet today there are many levee problems. Many miles of levees are in critical need of repair or rehabilitation. Land subsidence is continuing to lower many Delta islands, making protection and continued reclamation increasingly difficult and costly. Trees, shrubs and grasses which provide much of the natural beauty of the Delta and valuable wildlife habitat are being destroyed. Public access and recreation facilities along the levees are very limited. These and other problems occur primarily because the funding for levee improvement and maintenance is inadequate.

This report presents four alternative courses of action which can be taken. One of these would essentially continue present practices which would result in ever increasing problems and possible loss of much of the Delta as we know it. The other three would result in improved levees with better flood protection and environmental enhancement. Improvement, however, will require additional financing. This financing should have a broad base of support and be equitably shared by those who will benefit.

We plan to conduct meetings to get public reaction on the concepts presented in this report. We are hopeful that as a result, a mutually acceptable plan can be implemented so that this important local, state, and national asset can be preserved and enhanced.

Sincerely yours,


John R. Teerink
Director



LEGEND

-  36 YEAR FLOODED
-  NOT RECLAIMED

DELTA ISLANDS FLOODED
SINCE 1930

The Delta today

The Delta, located at the confluence of the Sacramento and San Joaquin Rivers, encompasses an area of over 1,100 square miles. The Delta comprises some 60 reclaimed islands and tracts surrounded by over 700 miles of picturesque waterways. It is an area of great importance to the State and nation.

The Delta is one of the most fertile agricultural areas in the United States. Its rich soils support a wide variety of crops which significantly contribute to California's economy.

The area with its scenic waterways has become one of California's major recreation areas providing opportunities for fishing, boating, picnicking, camping, water sports, and sightseeing. The area supports over 100 species of waterfowl and wildlife including important game and endangered species. The Delta also supports one of the State's greatest fishery resources including both resident and anadromous varieties.

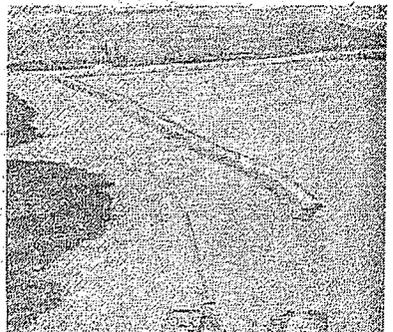
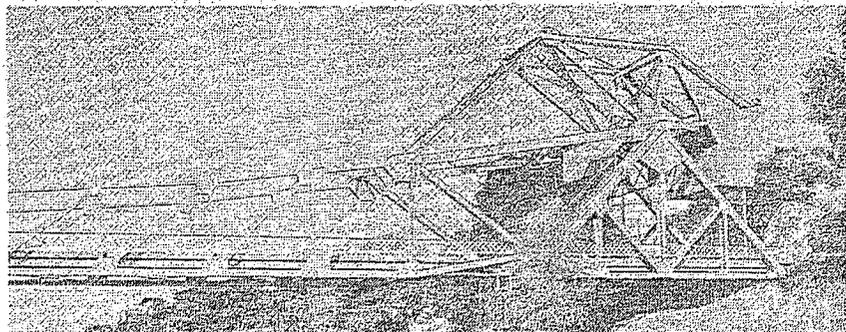
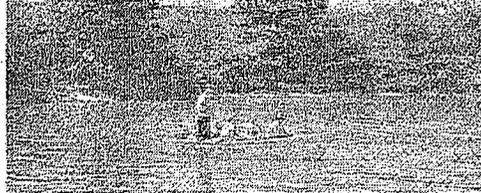
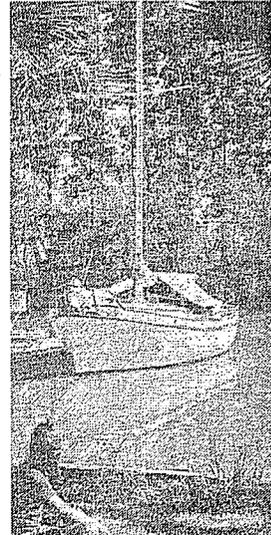
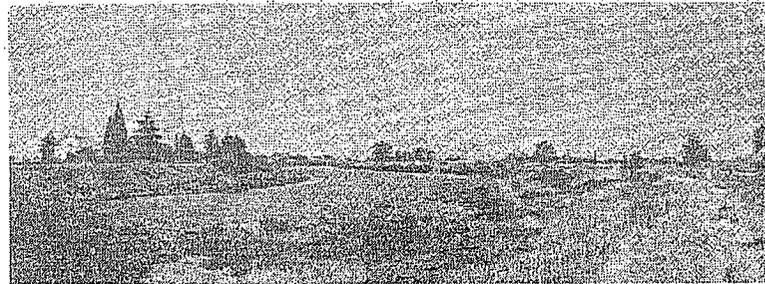
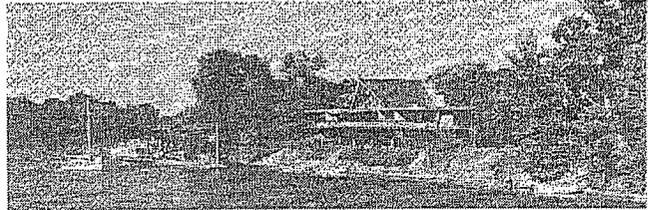
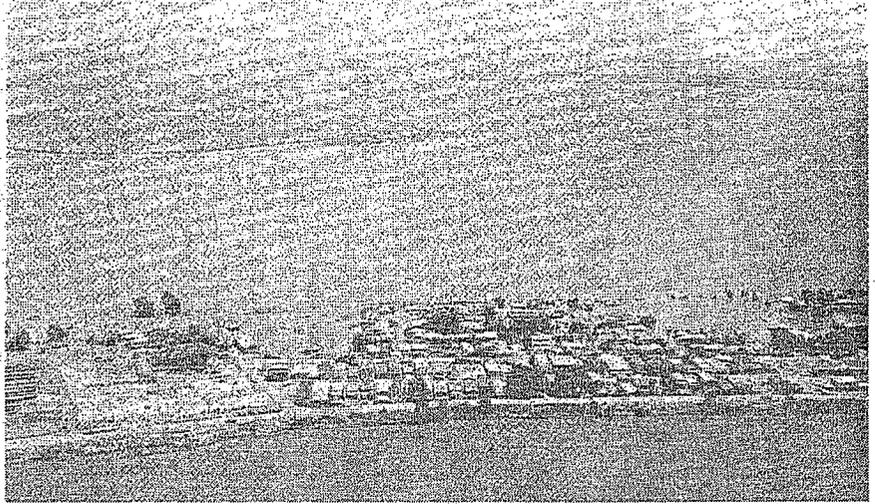
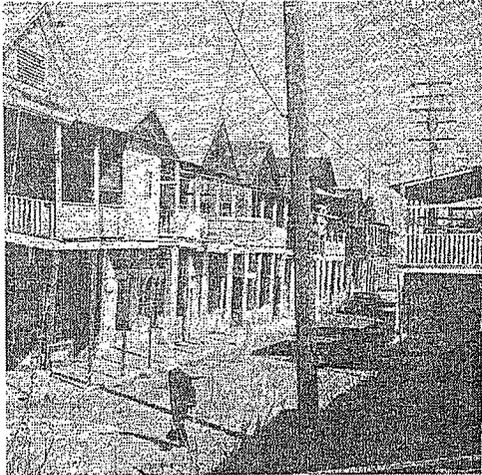
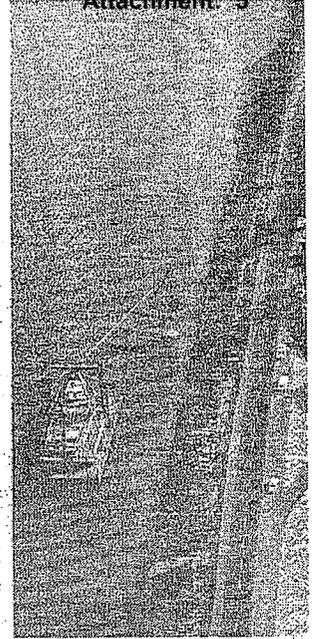
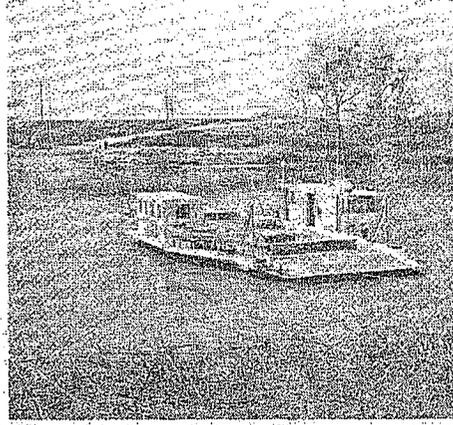
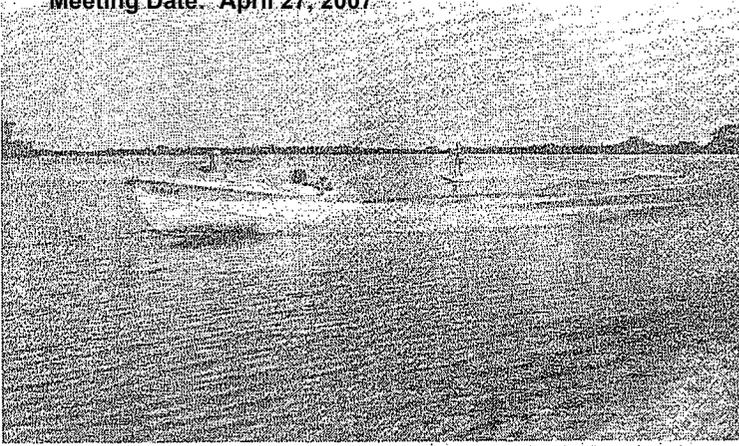
The Delta channels, particularly the Sacramento and San Joaquin Rivers and two deep-water channels and ports, support important commercial shipping. Surplus water from Northern California is transferred through the Delta for use in Central and Southern California. The Mokelumne Aqueduct which conveys water from the Sierras to the San Francisco Bay Area crosses the Delta. The area also encompasses one of California's most important high quality natural gas producing areas. In brief, the Delta provides us with many economic and environmental benefits.

Thousands of acres of the Delta lowlands are protected from floods and high tides by a vast network of man-made levees, some of which are over 100 years old. Many of the levees are in poor condition and need to be rehabilitated. Land subsidence, which results in ever-increasing pressures on the levees, further compounds the problem. Consequently, the Delta experiences many levee failures with resulting catastrophic consequences. The most recent levee failure resulted in the disastrous Brannan-Andrus Island flood of June, 1972. Total public and private losses from this flood have been substantial. Islands and tracts which have flooded since 1930, and the year of flooding are shown on the map on the opposite page.

The demand for recreation use of the Delta is steadily increasing. Additional public access and recreation facilities are needed to satisfy both present and future demands.

Vegetation, which helps make the Delta so attractive, and is needed as a wildlife habitat, is being stripped from the levees.

These problems result in losses to society not only of agricultural, industrial, and recreational assets, but also of many amenities essential to man. Consequently, the protection and enhancement of the valuable Sacramento-San Joaquin Delta is of prime importance not only to the Delta residents, but to Californians and others throughout the nation.



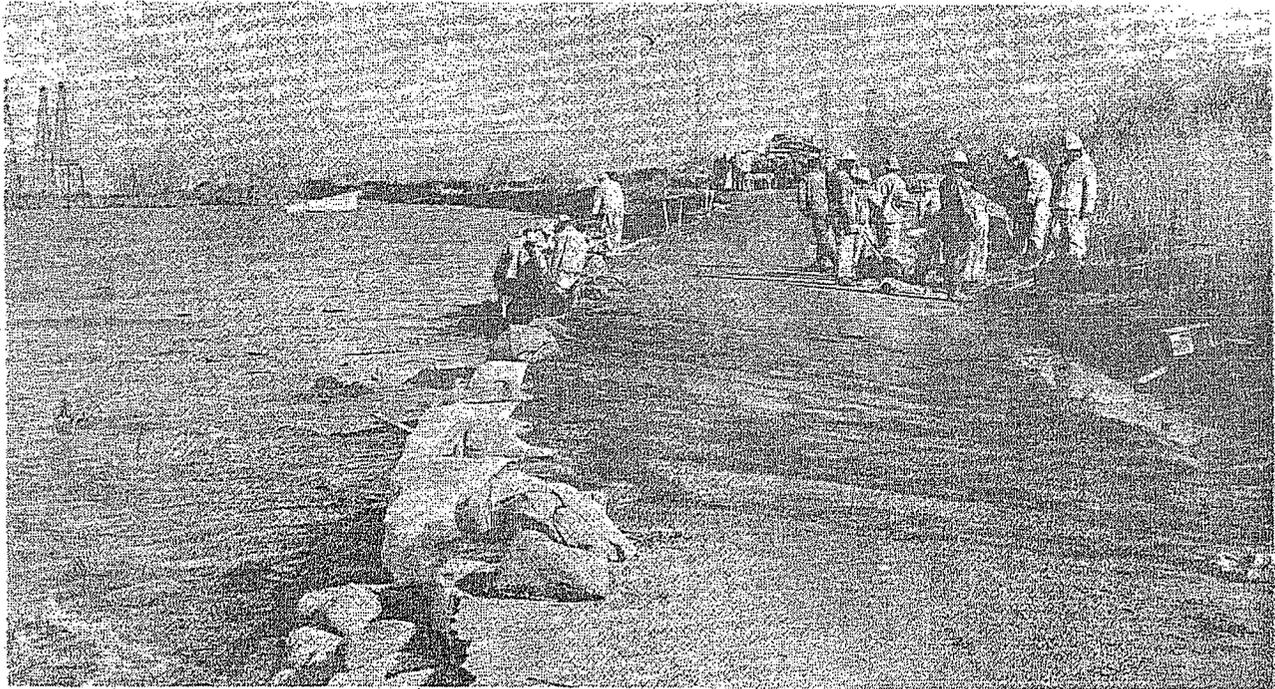
Who will benefit from improved Delta levees ?

- *THE DELTA FARMERS AND BUSINESSMEN.* They depend on the levees for flood protection. With improved levees, farming and business in the Delta will be protected and preserved.
- *THE DELTA RESORT OWNERS.* Improved levees will create additional recreational opportunities and prevent disruptions caused by levee breaks.
- *THE DELTA RESIDENTS AND VISITORS.* Improved levees will protect homes, possessions and lives.
- *THE CONSUMERS OF NATURAL GAS FROM THE DELTA; AND USERS OF WATER, MUNICIPAL UTILITIES, RAILROADS AND HIGHWAYS IN THE DELTA.* Improvement will better protect these works and reduce the possible need for abandonment or expensive relocations.
- *THE BOATERS, WATERSKIERS, SWIMMERS, PICNICKERS AND CAMPERS.* Improved multiple-purpose levees will provide increased public access and land recreational opportunities, and enhance the quality of water recreation.
- *THE FISHERMEN.* Improved multiple-purpose levees will provide increased bank fishing opportunities and will preserve the levees and channels which provide important fish habitat and spawning areas.
- *THE HUNTERS.* Improved levees will better protect important waterfowl and game species and their habitat, thereby providing better hunting opportunities.
- *THE WATER USERS IN THE BAY AREA, SAN JOAQUIN VALLEY AND SOUTHERN CALIFORNIA.* Improved levees will protect water supplies which presently pass through the Delta and which can be detrimentally affected by levee breaks.
- *THE NATURALISTS.* Improved flood protection will preserve many acres of unique and critically needed wildlife habitat including that for several rare and endangered species.
- *THE PEOPLE WHO BUY DELTA FARM PRODUCTS.* Consumers of Delta products will benefit from the assurance of continued farm production made possible by improved flood protection.
- *THE LOCAL, STATE AND FEDERAL TAXPAYERS.* When the levees fail, millions of tax dollars are spent to repair the levee breaks, reclaim the flooded islands, compensate for taxes not paid on flooded property and provide public assistance to those flooded.

Delta levee problems

There are many Delta levee problems -- structural, environmental and financial. The major problems are:

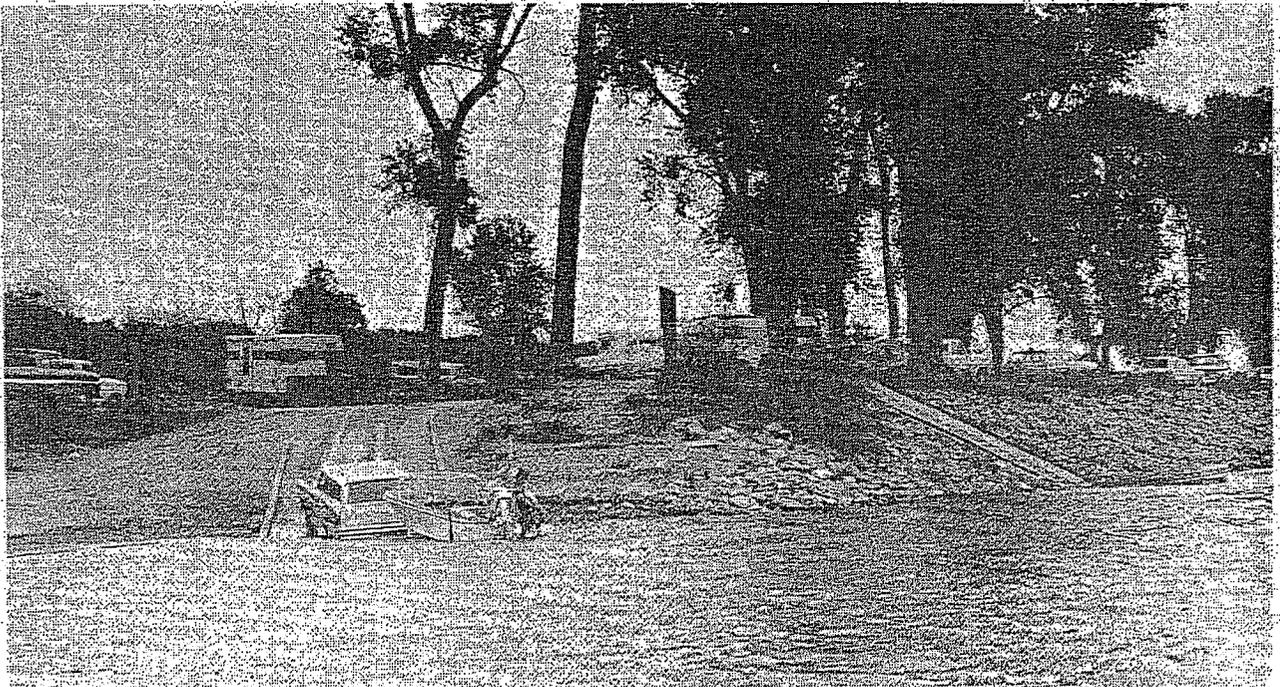
- **INADEQUATE FLOOD CONTROL.** Flood control provided by the Delta levee system is generally inadequate except for areas protected by federal project levees. Most of the private or nonproject levees suffer from stability problems caused by subsidence and are increasingly being eroded by flood-flows and wavewash from tides, winds and boat wakes. Most of the levees lack sufficient freeboard during high-water periods and many miles are deteriorated. If one island is flooded and its levees lost, the adjacent island levees are more vulnerable to windwave erosion. There is a potential domino effect.



Sandbagging operations along Sherman Island levee during '64 flood.

- **INADEQUATE LEVEE MAINTENANCE.** Levee maintenance today is performed by many agencies, districts and landowners. There are no specific maintenance standards or regulations for many of the nonproject levees. Since most maintenance organizations attempt to minimize costs, few of the levees are maintained to provide a high level of flood protection and vegetation since these both increase costs.

- **DESTRUCTION OF VEGETATION.** Heavily vegetated levees are difficult and costly to maintain to adequate flood control standards. Consequently, many miles of the levees are being stripped of trees, shrubs and grasses. Levee berms which have vegetation are eroding. Stripped levees reduce the fish and wildlife habitat and food supply and decrease the natural beauty and recreational enjoyment of the Delta.
- **SHORTAGE OF PUBLIC ACCESS AND RECREATION FACILITIES.** The demand for recreational use of the Delta levees and waterways is steadily increasing. Public access to the waterways is limited and a shortage of levee recreation facilities and parking sites exist. Without sufficient public access and attractive recreation facilities, people often trespass on private levees and cause annoyance and additional expense to the landowners by littering, carelessness and acts of vandalism.



Boat launching ramp in use at Merritt Island launch site.

- **INADEQUATE FINANCING.** One of the major problems facing the Delta today is the lack of funds to develop and maintain safe, multiple-purpose levees. At present, the landowners or local levee maintenance districts bear the full costs of improvement and maintenance of nonproject levees. If multiple-purpose levees are to be developed, an equitable means of obtaining additional funds from those who will benefit must be found.

What can be done to solve the levee problems ?

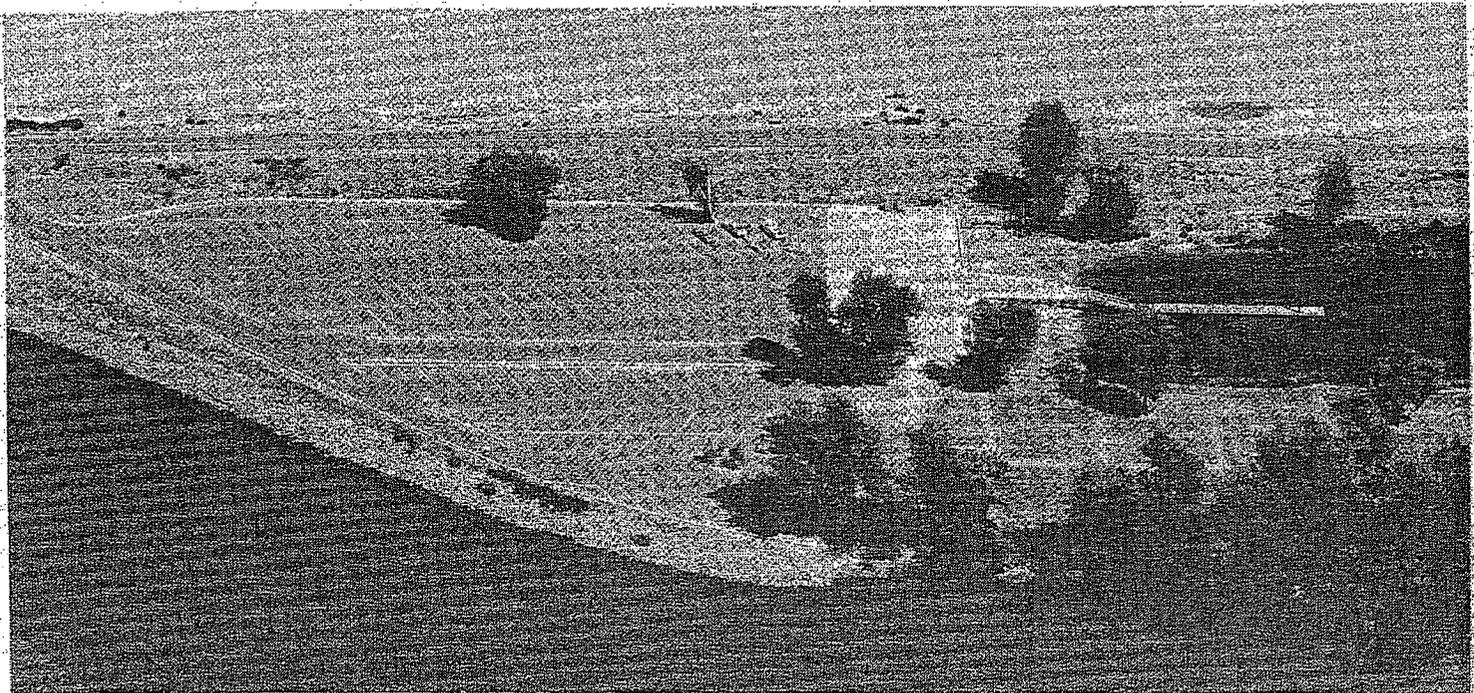
Four alternative courses of action were investigated in this study. The first would continue present practices with no improvements other than maintenance of the existing levees. Each of the three remaining alternatives would improve flood control, increase levee vegetation and provide public access and recreation facilities as described below. The improvements would be limited to nonproject levees, i.e. those that are not part of the Sacramento and San Joaquin River flood control projects.

- FLOOD CONTROL. The levees would be improved by raising, widening and strengthening the embankments as needed. Where necessary, a landside berm would be constructed to serve as a counterweight for the water pressure and to serve as a base for many of the multiple-purpose features of the improved levees including roadways, parking and recreation facilities. The berms would be constructed in lifts which would be allowed to settle for 6 months to 1 year. Material would then be added to the levee crowns. The photo below shows a Sacramento River levee which provides 100-year flood protection.



Sacramento River Flood Control Project levee

● VEGETATION. Where feasible, trees, shrubs and grasses would be planted on the waterside slope of the levees in the area between the top of the riprap and the crown of the levees. In addition, natural vegetation would establish itself except in the paved roadway areas. Native vegetation which would not interfere with the flood control capability of the levees would be retained. Vegetation on the waterside berms would be retained unless it would impair the flood carrying capacity of the adjacent waterway.



Aerial view of recreation site on Steamboat Slough.

● PUBLIC ACCESS AND RECREATION FACILITIES. In each plan of improvement, public access would be provided along the improved levees and day-use type recreation facilities would be constructed at 49 high-use locations defined in the February 1973 report entitled, "Delta Master Recreation Plan". The recreation sites would be small, from 1 to 3 acres with occasional 5 to 10 acre sites. The facilities would not only benefit the recreationists, but also the Delta landowners as they would attract the recreationists, thereby reducing trespass on private lands and attendant trash, litter, and vandalism problems. The facilities could be developed by private interests or by local or state agencies, possibly with federal assistance. Public access could be provided through easements as a condition of expending public funds on the levees or by purchase, if feasible.

Alternative A - NO IMPROVEMENT

- DESCRIPTION. Alternative A is a course of action which could be taken although it would not solve the problems discussed earlier. It would simply be a continuation of present practices with no improvements other than the normal levee maintenance which is being conducted today. Increasing sums of money would have to be expended for levee maintenance; emergency flood fighting and public assistance; and flood damages would escalate.

The present levee system provides varying degrees of protection. The estimated frequency of levee overtopping for those islands protected by nonproject levees under present conditions is shown on the opposite page. As subsidence and erosion increase, the frequency of levee overtopping is projected to increase from once in 37 years at present to once in 29 years by the year 2020. In addition, the frequency of levee failures is expected to increase. Because of the high cost and difficulty of repairing levee breaks, protecting the insides of the flooded islands from wavewash and pumping out the floodwaters, each flood which is not declared a disaster with associated federal and state financial assistance could result in permanent inundation. As reclamation costs increase the justification for reclamation of flooded islands becomes more questionable.

- ACCOMPLISHMENTS. Maintaining the present levee system would provide limited protection for 262,000 acres of land in the lower Delta. Although some vegetation would remain, many of the levees would be stripped of vegetation to minimize levee maintenance costs. Public access and recreation facilities would not be developed along the nonproject levees as part of this alternative.

- COSTS & DAMAGES. If present maintenance practices are continued, the costs of levee maintenance and the damages from flooding both are projected to increase. The estimated annual levee maintenance costs, the emergency repair costs and public damages reimbursed by the Federal and State Governments, and the nonreimbursed damages are shown below. The costs do not include public assistance to individual flood victims.

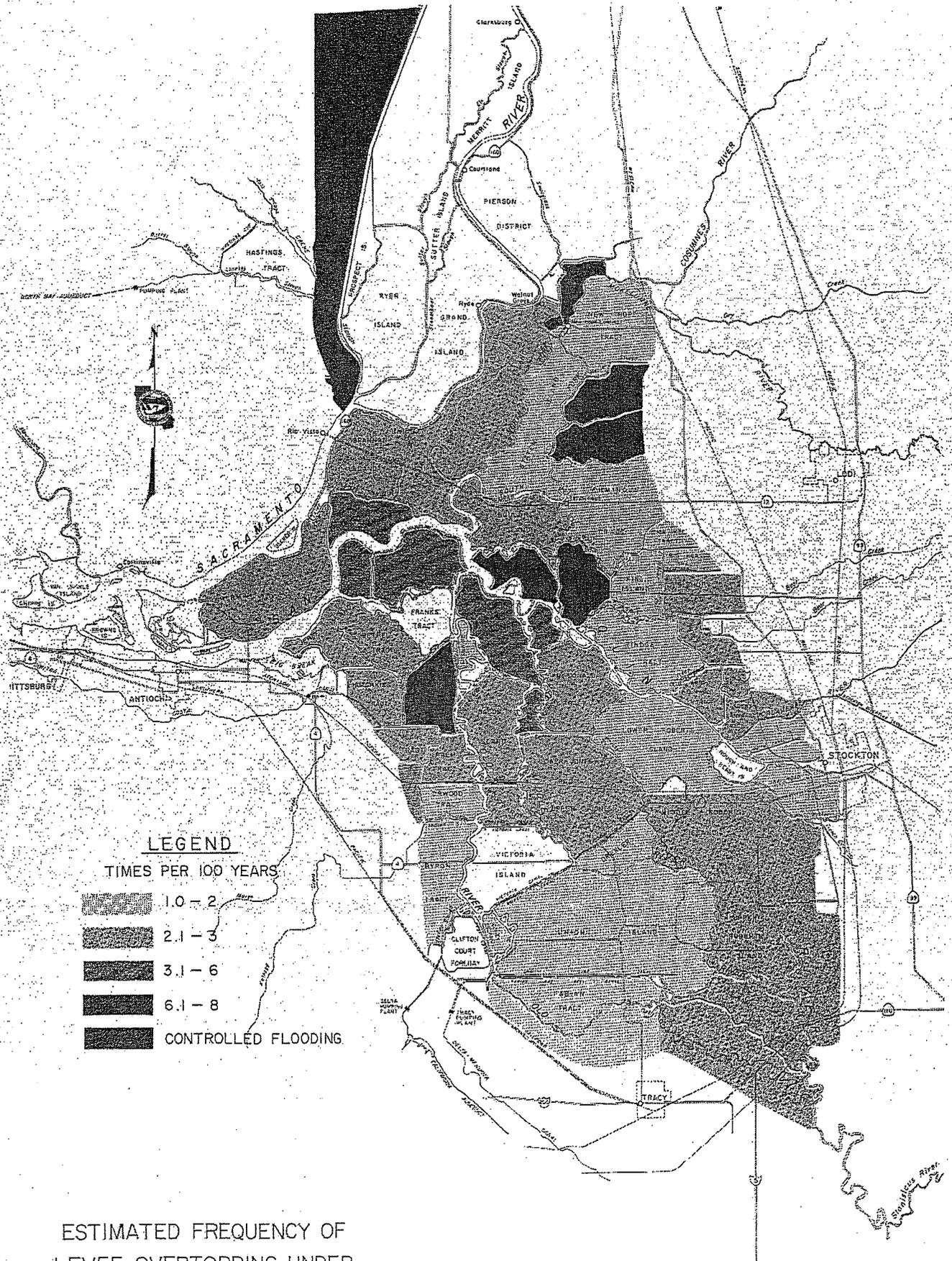
ANNUAL LEVEE MAINTENANCE COSTS

Local \$ 300,000

ANNUAL FLOOD DAMAGES & COSTS

Federal 1,700,000
State 100,000
County 100,000
Local 2,300,000

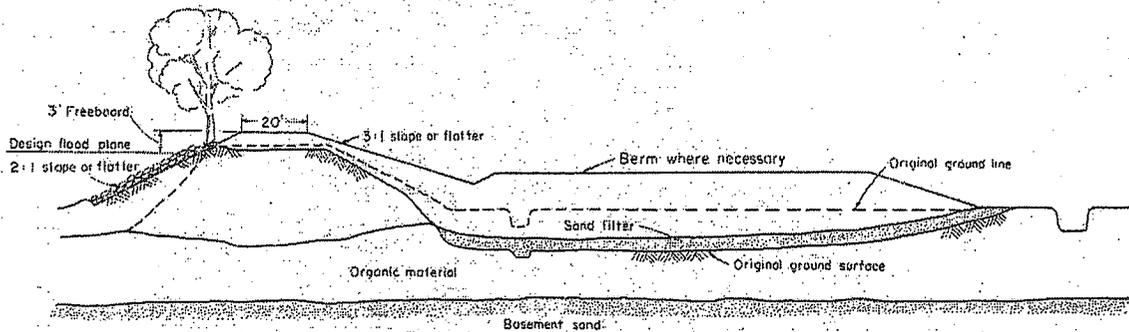
Total \$4,500,000



ESTIMATED FREQUENCY OF
LEVEE OVERTOPPING UNDER
PRESENT CONDITIONS

Alternative B - EXTENSIVE IMPROVEMENT

- **DESCRIPTION.** Under this alternative the nonproject Delta levees would be improved as shown below. The improved levees would protect against a 1 in a 100-year flood and would provide for multiple-purpose benefits including improved roads, protection against boat wakes, increased vegetation, parking, recreation facilities, and protection against continuing long-term land subsidence. Some 508 miles of the levees would be improved and planted with trees, grasses and shrubs. Public access would be provided, primarily by easement, along the 508 miles of rehabilitated levees. Recreation developments would be constructed at 49 sites and 300 miles of new or improved roads would be constructed on the crowns of the improved levees. The typical recreation developments would include picnic tables and facilities, boat launching ramps, and parking and sanitary facilities. The levees which would be improved and the recreation sites are shown on the opposite page.

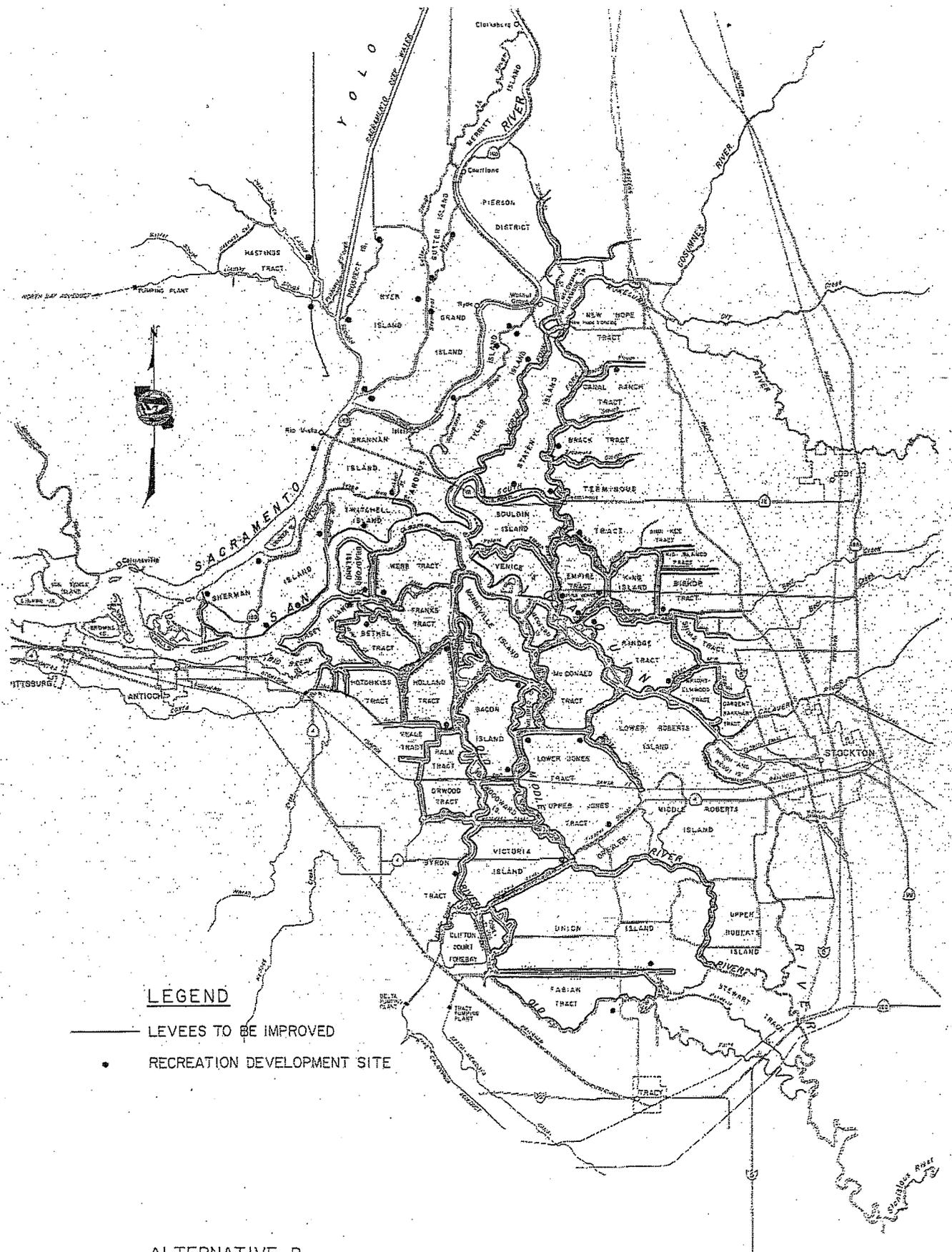


Improved levee section for multiple - purpose use.

- **ACCOMPLISHMENTS.** This plan would provide a high level of flood protection for all the leveed islands and tracts in the Delta. The levee improvements would reduce projected flood damages in the Delta over the next 50 years by approximately two-thirds, from \$4,200,000 annually to approximately \$1,400,000. The added protection is expected to result in land enhancement of about \$1,800,000 annually. A small reduction in seepage and seepage damage also should occur. Of the alternatives considered, this plan would provide the largest amount of public access and vegetation. This should appreciably reduce the present shortage of access and provide the greatest enhancement of any of the plans for fish and wildlife and scenic enjoyment. The recreation developments would provide sorely needed parking and day use type facilities.
- **COSTS.** The estimated costs, including lands, relocations, levee improvement, vegetative planting, roads and recreation facilities are:

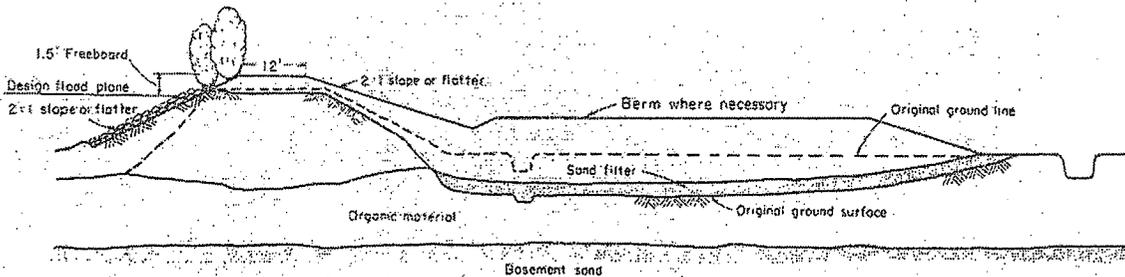
Capital Costs	\$192,000,000
Annual Costs including Operation and Maintenance	\$ 7,500,000

These costs are based on 1972 price levels, a 50-year project life with the project constructed during the first 20 years of that period and a 5 percent interest rate.



Alternative C - MODERATE IMPROVEMENT

- DESCRIPTION. In this alternative the nonproject Delta levees would be improved as depicted below. They would provide protection against a 1 in 50-year flood and provide multiple-purpose benefits including improved roads, bank protection, vegetation, recreation facilities, parking and protection against long-term land subsidence. To accomplish this level of improvement, the embankments of approximately 290 miles of levees would be raised, widened and strengthened. Vegetation would be planted and public access provided along the rehabilitated levees. As in Alternative B, 49 recreation developments would be constructed. Approximately 150 miles of new or improved roads would be built along the rehabilitated levees. The features of this plan are shown on the opposite page.



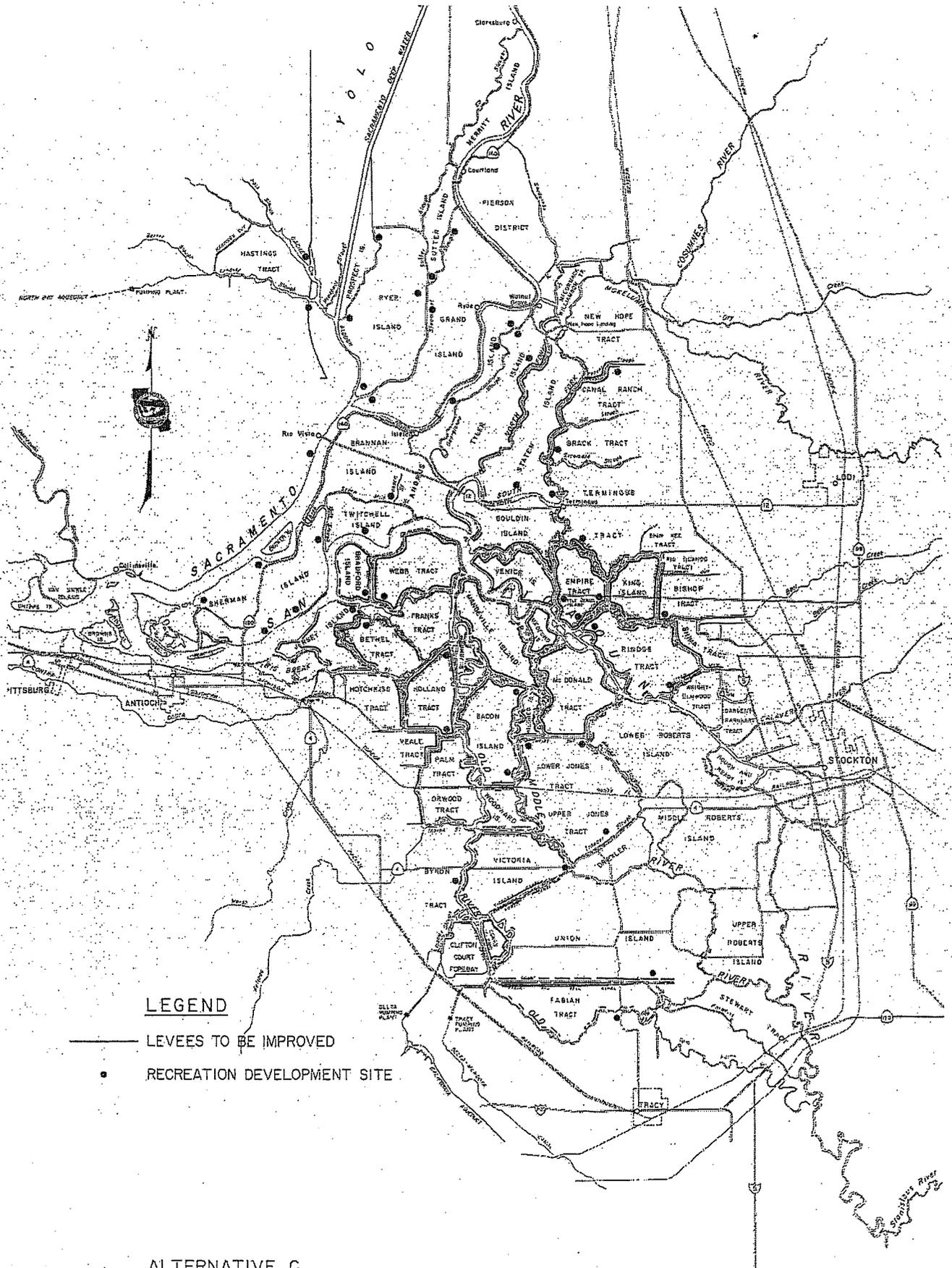
Improved levee section for multiple - purpose use.

- ACCOMPLISHMENTS. This alternative would provide a level of flood protection better than the present 37-year protection, but not as high as the 100-year protection provided by Alternative B. Projected flood damages in the Delta over the next 50 years would be reduced under this plan by about \$1,500,000 annually from the projected \$4,200,000 which would occur each year without a project. The value of land enhancement provided by the increased flood protection would approximate \$900,000 annually. Some seepage damage also would be prevented. In relation to the other alternatives, this plan would provide an intermediate level of public access and vegetation along the levees totalling about 60 percent of that of Alternative B. Because of the lesser number of miles of levees with public access and a lower level of flood protection, the recreation benefits of this plan would be somewhat less than those of Alternative B.

- COSTS. The estimated capital and annual costs based on the same assumptions as in Alternative B are:

Capital Costs	\$81,000,000
Annual Costs including Operation and Maintenance	\$ 3,600,000

The construction of this project would extend over a period of 20 years. The costs are based on 1972 price levels, a 50-year project period, and an interest rate of 5 percent.



ALTERNATIVE C
MODERATE IMPROVEMENT

Alternative D - POLDERS

- DESCRIPTION. Alternative D embodies a concept whereby a number of islands would be linked together to form polders through the construction of embankments which close off the channels between the islands. Although there are many variations in the possible grouping of islands which could be combined to form the polders, this plan would create five polders in addition to Sherman Island. The levees around the exterior of the polders would be strengthened and raised to provide 50-year flood protection. The interior levees within the polders would not have to be strengthened as they would not be exposed to floodwaters. Consequently, Alternative D would reduce the number of miles of levees which would have to be improved to provide increased flood protection. The cross section of the improved levees would be similar to that shown in Alternative C.

Approximately 213 miles of levees would be improved, and 35 channel closures and 49 recreation developments would be constructed. Vegetation and public easements would be provided along the 213 miles of improved levees and 180 miles of new or improved roads would be constructed along those levees. About 250 miles of channels now open to tidal action would become interior channels. Some 23 small craft locks constructed at selected closure sites would provide boating access between the exterior channels and the interior channels of the polders. The levees which would be improved and other features of this plan are shown on the opposite page.

- ACCOMPLISHMENTS. As with Alternative C, this plan would reduce the projected annual flood damages during the next 50 years by \$1,500,000 annually and provide land enhancement approximating \$900,000 annually. Seepage damage totalling \$200,000 annually would be prevented. Except for the plan of no improvement, this alternative would provide the least amount of public access, vegetation and recreation benefits. Although small craft locks would be constructed, there would be some inconvenience and delay in passing through the locks. There also would be a loss in habitat for the anadromous fishery resulting from the closing off of the interior channels. This would be partially compensated for by a resident fishery which would be established in the interior channels of the polders.

- COSTS. The estimated costs of this plan are:

Capital Costs	\$101,000,000
Annual Costs including Operation and Maintenance	\$ 3,900,000

SUMMARY OF PROJECT COSTS & ACCOMPLISHMENTS

	ALTERNATIVE A NO IMPROVEMENT	ALTERNATIVE B EXTENSIVE IMPROVEMENT	ALTERNATIVE C MODERATE IMPROVEMENT	ALTERNATIVE D POLDER
<u>PROJECT COSTS</u>				
Capital	0	\$192,000,000	\$81,000,000	\$101,000,000
Annual	\$300,000	\$7,500,000	\$3,600,000	\$3,900,000
<u>PROJECT ACCOMPLISHMENTS</u>				
Level of Flood Protection (Years)	29-37	100	50	50
Improved Levees (Miles)	0	508	290	213
Improved Flood Protection (Acres)	0	262,000	262,000	262,000
Annual Flood Damages Without Project	\$4,200,000	\$4,200,000	\$4,200,000	\$4,200,000
Annual Flood Damages Prevented	0	\$2,800,000	\$1,500,000	\$1,500,000
Annual Seepage Damages Prevented	0	Minimal	Minimal	\$200,000
Annual Land Enhancement	0	\$1,800,000	\$900,000	\$900,000
Recreation Sites	0	49	49	49
Levees With Public Access & Vegetation (Miles)	0	508	290	213
New or Improved Roads (Miles)	0	300	150	180
Waterways Around Islands (Miles)	700	700	700	450
Waterways Within Polders (Miles)	0	0	0	250
Small Craft Locks	0	0	0	23

What is needed to accomplish these Alternatives ?

Each of the alternative courses of action will require more funds than are now being expended on the levees. Additionally, the alternatives which provide trees, shrubs and grasses for multiple-purpose use will require maintenance for those purposes.

ADEQUATE AND EQUITABLE FINANCING. Additional funding for developing and maintaining multiple-purpose levees is required regardless of the alternative selected. These funds should come from a broader base than at present and should be shared by the many beneficiaries of the levees in relation to the benefits which they will receive. Possible sources of financing include:

- The landowners, businesses, industries, utilities, water users, highway users and railroads for the costs of maintaining and improving the flood control benefits they receive from the levees.
- Local, state and federal funds for the costs of protecting the environment, preserving natural beauty, and enhancing the fish and wildlife habitat.
- Federal, state and local funds and private recreation developers, as appropriate; and recreationists, for the costs of recreation access and of constructing and operating recreation facilities.
- Boaters and the Federal Government for the share of levee and bank maintenance costs resulting from boat wakes.
- State highway funds through the Department of Transportation and county road funds for the share of levee construction and maintenance costs arising from the use of levees as thoroughfares and as scenic highways.

IMPROVED FLOOD CONTROL AND MULTIPLE PURPOSE LEVEE MAINTENANCE. Under Alternatives B, C and D, the nonproject levees must be maintained to satisfactory flood control standards and to retain vegetation. To accomplish these objectives, standards for improved flood control and multiple-purpose levee maintenance must be established and followed. One agency should be empowered to establish and enforce these standards. This agency also should have the authority to construct, operate and maintain public recreation facilities. Special purpose waterborne levee maintenance equipment which could be purchased or leased by this agency may help to minimize the costs of vegetative maintenance. The actual levee maintenance work could be accomplished by local levee and reclamation districts as is now being done. Should any district fail to maintain its levee to the prescribed standards, the overall agency should be empowered to take over the maintenance and charge those benefited.

RESOURCES OF DELTA ISLANDS
(Islands protected by non-project levees)

Tract or Island	Acres	Miles of Project Levees	Miles of Non-project Levees	Acres Per Mile of Levee	Public Roads	Gas Wells	Pipe-Lines	Transmission Lines	Cities of Towns	Resorts	Rail-roads
Andrus	7,323	20.5	7.1	265	x	x			x	x	x
Atlas	339	0	3.1	109				x			
Bacon	5,546	0	14.0	396							
Bethel	3,520	0	11.4	309	x				x	x	
Bishop	2,169	0	5.8	374	x					x	
Bouldin	6,047	0	18.0	359	x					x	
Brack	4,873	0	10.8	451	x						
Bradford	2,143	0	7.4	290		x					
Brannan	7,680	10.2	0	753	x	x		x	x	x	
Byron	6,933	0	9.7	715	x			x	x	x	
Canal Ranch	2,996	0	7.4	405	x						
Coney	935	0	5.4	173							
Deadhorse	211	0	2.6	81							
Drexler	3,165	0	4.0	791	x		x	x		x	
Empire	3,725	0	10.3	362	x					x	
Fabian	6,530	0	18.7	349	x					x	
Holland	4,225	0	10.7	395	x						
Hotchkiss	3,358	0	8.4	400	x			x		x	
Jersey	3,471	0	15.6	223	x	x		x			
Jones, Upper	6,259	0	4.9	1,277	x		x			x	x
Jones, Lower	5,894	0	9.0	655	x					x	x
King	3,260	0	9.0	362	x	x				x	
Mandeville	5,238	0	17.1	306							
McCormack-Williamson	1,639	0	9.1	180		x					
McDonald	6,145	0	14.0	439		x					
Medford	1,219	0	5.9	207							
Mildred	998	0	7.3	137							
New Hope	9,754	0	16.4	595	x	x		x	x	x	
Orwood	2,440	0	6.4	381	x		x			x	x
Orwood, Upper	1,698	0	4.5	317	x		x	x		x	x
Palm	2,436	0	7.5	325							x
Quimby	769	0	7.1	108							
Rindge	6,844	0	15.7	436	x						
Rio Blanco	667	0	3.4	196							
Roberts, Lower	10,600	0	13.7	774	x	x	x	x	x	x	x
Roberts, Middle	13,687	6.1	5.4	1,190	x	x	x	x			x
Roberts, Upper	8,260	10.6	4.4	551	x			x			
Sargent-Barnhart	1,214	1.0	2.5	290	x		x			x	
Sherman	10,420	9.7	10.1	526	x	x	x	x	x		
Shima	2,394	0	6.6	363				x			
Shin Kee	1,074	0	1.9	565	x						
Stark	721	2.8	.7	206				x			
Staten	9,088	0	25.2	361	x	x					
Terminus	10,470	0	15.8	663	x	x			x	x	x
Twitchell	3,633	2.5	6.4	408	x	x					
Tyler	8,583	12.2	10.1	385	x	x				x	x
Union, West	15,329	0	16.5	929	x			x			
Union, East	9,622	1.0	11.8	752	x			x			
Veale	1,298	0	5.0	260	x			x			
Venice	3,220	0	12.3	262							
Victoria	7,250	0	15.1	480	x		x			x	
Walnut Grove	652	.9	2.0	225	x				x	x	x
Webb	5,490	0	13.0	422							
Woodward	1,822	0	8.9	205			x				

What can YOU do ?

We have presented in this report four alternative courses of action on which to base a definitive plan for the future of the Delta. Three of the four would result in varying degrees of improvement. However, if present maintenance practices are continued, as outlined in Alternative A, we could actually lose many of the Delta's valuable resources.

None of the four alternatives is fixed; rather, each is a concept on which to build the final plan. For example, different levels of improvement may be advisable for different islands. Perhaps 100-year flood protection may be advisable for an island with cities, towns, or extensive recreation developments; whereas, no additional protection may be warranted for an island devoted completely to farming.

We now need your views on these concepts. Your comments will enable us to make more detailed studies and to develop final recommendations for a more definitive plan. By July, 1974, we will issue a report presenting a specific plan which will address itself to the subjects of flood protection, levee associated recreation opportunities, wildlife protection, and environmental enhancement. We want to present a jointly developed, specific program of action needed to carry out the recommended plan.

The next step is up to you. We need your views on the extent of improvement to be taken to preserve and enhance this valuable resource -- our Delta.