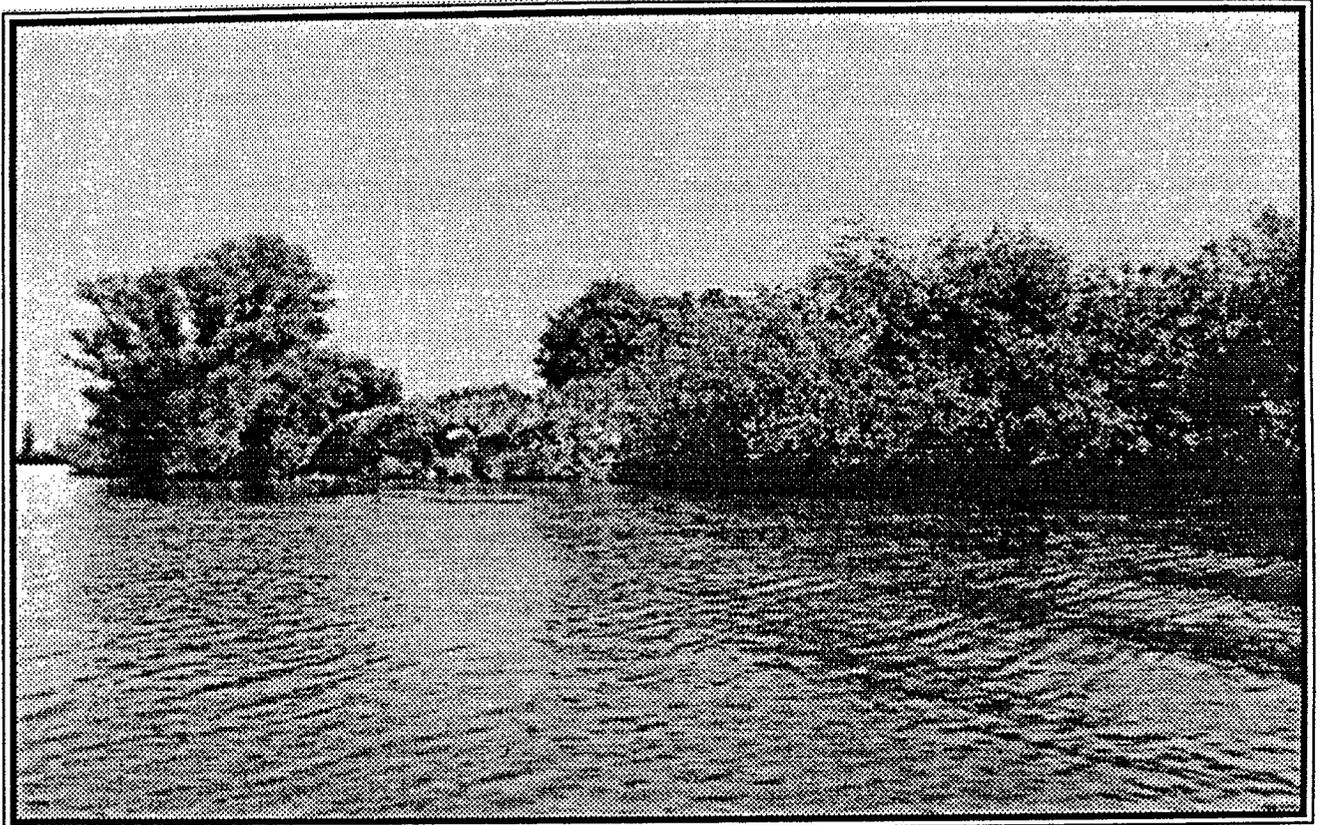


# SOUTH DELTA RECREATION CONCEPTS

for the  
SOUTH DELTA WATER MANAGEMENT PROJECT  
SEPTEMBER 1992



Prepared for:  
CALIFORNIA DEPARTMENT OF WATER RESOURCES

Prepared by:  
CALIFORNIA DEPARTMENT OF PARKS AND RECREATION  
ENVIRONMENTAL DESIGN DIVISION

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**Pete Wilson  
Governor of California**

**Douglas Wheeler  
Secretary for Resources**

# SOUTH DELTA RECREATION CONCEPTS

## TABLE of CONTENTS

	Page
I. SUMMARY.....	1
II. INTRODUCTION.....	5
Purpose of Plan.....	7
Previous Recreation Studies.....	11
III. EXISTING RECREATION USE.....	13
The Sacramento/San Joaquin Delta.....	15
South Delta Study Area.....	16
Regional Recreation Profile.....	17
IV. PROPOSED RECREATION USE.....	35
Spirit of Place.....	37
Planning Issues.....	40
Goals and Objectives.....	42
Site Design Criteria.....	46
Alternative Recreation Concepts.....	51
Clifton Court Forebay North Campground.....	53
Clifton Court Forebay East Campground.....	61
Widdows Island.....	69
Grant Line Canal Barrier Site.....	77
Old River at Kelso Road Barrier Site.....	85
Old River Campground.....	93
Old River Boat Camp.....	101
Old River at Head Barrier Site.....	109
Middle River Fishing Access.....	117
Typical Fishing Access.....	125
Typical Ski Beach.....	133
Regional Trail System Concept.....	141
V. APPENDIX.....	147
Potential Permits for Recreation Development.....	149
Cost Estimates for Alternative Plans.....	150
Park Restroom Standards.....	174
Park Restroom Costs.....	175
Selected References.....	177

## FIGURES and TABLES

<u>Figure /Table</u>		<u>Page</u>
Table	1	Comparison of Existing and Proposed facilities..... 4
Figure	1	Sacramento-San Joaquin Delta Area..... 8
Figure	2	South Delta Study Area..... 9
Table	2	County Population Estimates..... 17
Table	3	Projected Annual Recreation Demand..... 18
Table	4	Summary of Existing Recreation Facilities..... 32
Table	5	Summary of Proposed Recreation Facilities..... 48
Table	6	Cost Estimate Summary for Low Impact Plans..... 150
Table	7	Cost Estimate Summary for Moderate Impact Plans..... 151

## MAPS

### Map

	Page
1 Existing Boat Ramps.....	21
2 Existing Fishing Piers.....	23
3 Existing Courtesy Boat Docks.....	25
4 Existing Picnic Areas.....	27
5 Existing Campgrounds.....	29
6 Existing Recreation Facilities.....	33
7 Proposed Recreation Facilities.....	49
8 Clifton Court Forebay -North Campground Low Impact Plan..	57
9 Clifton Court Forebay-N .Campground-Moderate Impact Plan.	59
10 Clifton Court Forebay -East Campground Low Impact Plan.....	65
11 Clifton Court Forebay-Moderate Impact Plan.....	67
12 Widdow's Island-Low Impact Plan.....	73
13 Widdow's Island-Moderate Impact Plan.....	75
14 Grant Line Canal Barrier Site-Low Impact Plan.....	81
15 Grant Line Canal Barrier Site-Moderate Impact Plan.....	83
16 Old River at Kelso Road Barrier Site -Low Impact Plan.....	89
17 Old River at Kelso Road Barrier Site -Moderate Impact Plan.....	91
18 Old River Campground-Low Impact Plan.....	97
19 Old River Campground-Moderate Impact Plan.....	99
20 Old River Boat Camp-Low Impact Plan.....	105
21 Old River Boat Camp-Moderate Impact Plan.....	107
22 Old River at Head Barrier Site-Low Impact Plan.....	113
23 Old River at Head Barrier Site-Moderate Impact Plan.....	115
24 Middle River Fishing Access-Low Impact Plan.....	121
25 Middle River Fishing Access-Moderate Impact Plan.....	123
26 Typical Fishing Access-Low Impact Plan.....	129
27 Typical Fishing Access-Moderate Impact Plan.....	131
28 Typical Ski Beach-Low Impact Plan.....	137
29 Typical Ski Beach-Moderate Impact Plan.....	139
30 Regional Trail Concept Plan.....	145

## SUMMARY

This document proposes alternative recreation concepts which could be implemented in conjunction with the South Delta Water Management Program.

The primary goals of this South Delta Recreation Concept document are to:

1. To improve the quality and quantity of the recreation experience in the South Delta Region.
2. To provide greater public recreation opportunities in the South Delta Region.
3. To provide improved visitor and boat access to recreation facilities in the South Delta Region.
4. To promote cooperation between the various recreation providers in meeting the recreation needs of the South Delta Region.

The proposed recreation facilities fall into five major categories: 1) picnic areas, 2) campgrounds, 3) boat ramps, 4) fishing piers and 5) courtesy docks.

Studies of the demand for recreation facilities in the South Delta performed by the U.S. Corps of Engineers and private concerns indicate that the demand for recreation the South Delta is far greater than the capacity of existing facilities.

If fully implemented, this South Delta Recreation Concept report will result in the following increases in recreation facilities:

	<u>Existing</u>	<u>Low Impact</u>	<u>Moderate Impact</u>
Picnic Sites	278	44	53
Campsites	444	90	149
Boat Ramps	11	3	5
Fishing Piers	4	10	15
Courtesy Docks	14	5	12

**South Delta Recreation Concepts**

**COMPARISON OF EXISTING AND PROPOSED FACILITIES  
IN THE SOUTH DELTA STUDY AREA**

<b>EXISTING RECREATION FACILITIES</b>		<b>PROPOSED RECREATION FACILITIES</b>	
<b>FACILITY</b>	<b>TOTAL NO.</b>	<b>LOW IMPACT PLANS</b>	<b>MODERATE IMPACT PLANS</b>
<b>DAY USE</b>			
PARKING SPACES	942	71	89
PICNIC SITES	278	44	53
RESTROOM BLDGS.	14	9	9
BOAT RAMPS	11	3	5
FISHING PIERS	4	10	15
COURTESY DOCKS	14	5	12
<b>OVERNIGHT USE</b>			
CAMPGROUNDS	7	4	5
CAMPSITES	444	90	149
SHOWER/RESTROOM BUILDINGS	7	4	9
TRAILER SANITATION STATIONS	2	2	4

## **PURPOSE OF PLAN**

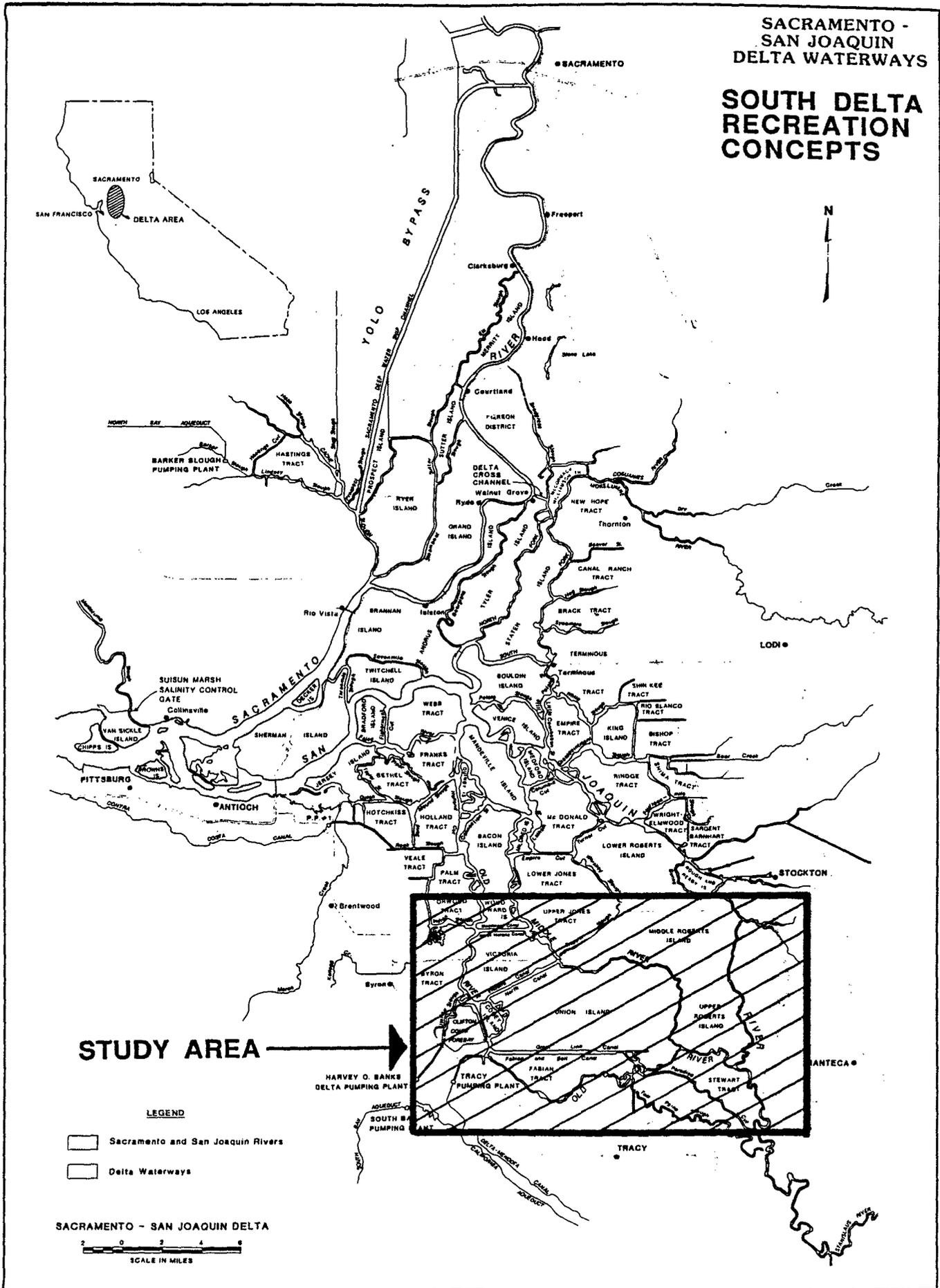
This document provides guidelines for the development of recreation facilities in conjunction with the South Delta Water Management Program (SDWMP). Unlike other previous recreation studies, this report does not recommend a single recreation plan for the South Delta but offers a series of alternative recreation concept proposals.

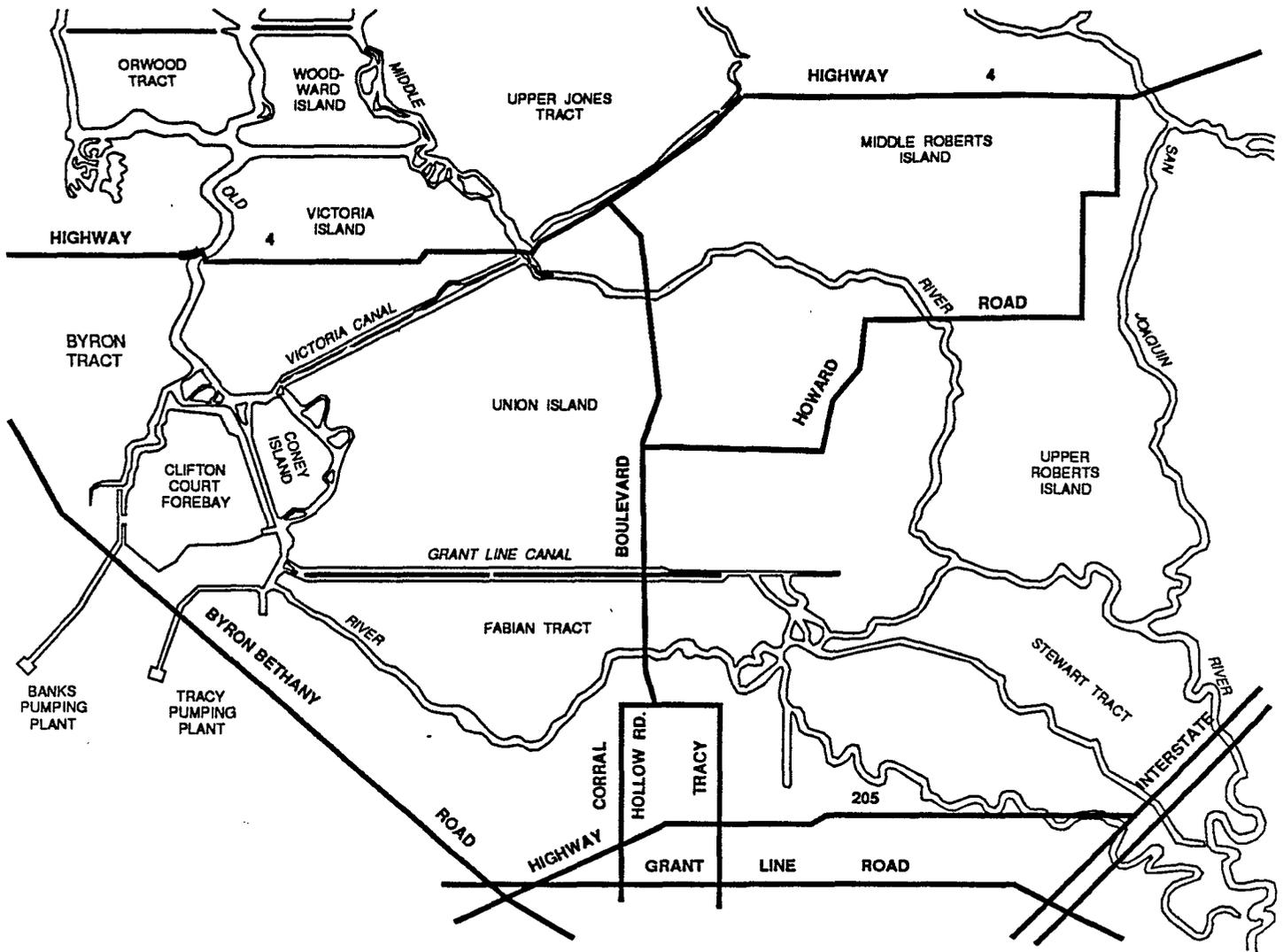
These recreation concepts have been divided into two categories: (a) proposals which result in low environmental impacts and (b) those resulting in moderate impacts. This document will guide recreational land use, interpretation and possible future acquisition of selected areas within the SDWMP.

Planning proposals regarding land not currently owned by the State of California are intended for long-range planning purposes only and do not represent an intention or commitment for acquisition.

SACRAMENTO -  
SAN JOAQUIN  
DELTA WATERWAYS

**SOUTH DELTA  
RECREATION  
CONCEPTS**





# SOUTH DELTA RECREATION CONCEPTS STUDY AREA

## **ENHANCED RECREATIONAL OPPORTUNITIES CREATED BY THE S.D.W.M.P.**

The following are outcomes of the South Delta Water Management Program which would enhance recreation opportunities in the South Delta:

1. Proposed channel improvements could lead to additional recreational development, such as fishing piers, boat ramps and courtesy docks.
2. Dredging would make accessible to boaters some scenic stretches of channels, such as Old River in the vicinity of Salmon Slough.
3. Levee setbacks would create berm islands and additional shoreline for riparian habitat and recreation.
4. Barrier-type facilities could improve water levels for recreation in some shallow or stagnant channels.
5. Increased channel access through higher water levels and increased channel surface area through channel improvements will add to the areas available for boating and fishing.
6. Construction of barrier-type facilities and an improved Forebay may enable greater public access, by providing opportunities for the construction of boat ramps, fishing piers, picnic areas and campgrounds.

Source: S.D.W.M.P., E.I.R. June 1990, Pg. xxi.

## **PREVIOUS RECREATION STUDIES**

The following recreation studies have been previously prepared for the Sacramento-San Joaquin Delta and South Delta areas:

A. SOUTH DELTA RECREATION STUDY (1988)

This study, prepared by the U.S. Bureau of Reclamation, is based on the 1988 report by Ebasco Services Incorporated and evaluates the recreation demand analysis prepared by the Corp. of Engineers in 1981.

B. SACRAMENTO-SAN JOAQUIN DELTA RECREATION CONCEPT PLAN (1981)

This document was prepared by a consultant to the Department of Water Resources. It includes a resource inventory, recreation demand analysis and potential recreation development.

C. SACRAMENTO-SAN JOAQUIN DELTA OUTDOOR RECREATION IMPLEMENTATION PLAN (1981).

This study, prepared by a consultant to the Department of Water Resources, provides a benefit-cost analysis for potential recreation sites in the entire Sacramento-San Joaquin Delta.

D. DELTA MASTER RECREATION PLAN (1976)

This plan was prepared for the Resources Agency by a wide variety of consultants and identifies potential recreation development, including a potential State Park in the vicinity of Old River.



Shady grass play areas are in high demand and short supply in the Delta Area.

## **EXISTING RECREATION USE**

### **Sacramento/San Joaquin River Delta Description**

As mentioned in the introductory chapter of DWR's EIR/EIS document describing the South Delta Water Management Program's Phase I of the Water Banking Program, the south Delta project area is generally that area of lands and channels of the Sacramento-San Joaquin Delta southwest of Stockton. This area is part of the larger Sacramento/San Joaquin River Delta that extends to Sacramento on the north and to the San Francisco Bay on the west, draining the Sacramento and San Joaquin River watersheds to the Pacific Ocean.

The Delta is rich in both human history and natural resources, providing a multi-faceted palette from which to create recreational opportunities and facilities.

The Delta itself was originally a large tidal marsh formed at the confluence of the Sacramento and San Joaquin Rivers and Suisun Bay. Native Americans lived many centuries here, enjoying the area's bountiful natural resources upon which they depended for existence. With the arrival of the Euro-Americans and the displacement of the Native Americans, the Delta was regarded as a swamp to be drained and "reclaimed" for the intensive agricultural practices of the easterners. In the late 1800's more than 80 percent of the natural Delta marsh was leveed and developed for agriculture.

The Delta today remains an area extensively altered from its natural state. There are original river channels as well as dredged waterways created for agricultural water management. Wildlife has had to adapt to these extensive changes in the quantity and quality of their habitat, leaving many species on State or Federal lists for endangered, threatened or candidate animals. Vegetation has also been affected, with at least six species listed. Many wildlife species that depend on wetland habitat reside in the Delta, in both disturbed and undisturbed areas. The landscape is flat and open, with rows of planted trees suggesting a farmstead or roadway, and transmission lines crisscrossing agricultural areas. The Delta generally looks "unnatural," although isolated pockets of native vegetation remain on instream islands, and large areas in and around the Suisun Bay area have been preserved for wildlife habitat.

Weather patterns in the Delta include prevailing winds from the southwest during much of the year, with hot summers and cold win-

ters, although pleasant days can occur during the winter months. In winter, heavy fog can persist for weeks at a time, reducing visibility for outdoor activities.

Nevertheless, all year round, especially in the spring, summer and fall months, the Delta remains heavily used by recreationists for boating, fishing, hunting, sightseeing, camping, picnicking, and relaxing.

### **South Delta Study Area**

The SDWMP project area is predominantly within the South Delta Water Agency boundaries, which includes approximately 150,000 acres, of which 30,000 acres are waterways, berms, channel islands, levees and lands devoted to homes and industries (120,000 acres are under agricultural production). The 150,000 total acreage of the south Delta comprises 20% of the total Delta area of 738,000 acres. The 75 miles of waterways in the South Delta are used to provide water for irrigated farmland, provide habitat and migratory routes for fish, serve as drainage and floodwater canals, and are used by recreation enthusiasts. The original river channels were leveed to create farmland, and major cross channels were dredged and flooded to provide increased opportunity for agricultural water diversions and transportation routes. Approximately 450,000 acre-feet of water is diverted from South Delta channels each year to irrigate the highly productive agricultural fields of the area.

The aesthetic character of the South Delta project area is similar to that of the Delta as a whole; large flat sunken agricultural islands are bisected by meandering waterways with naturally vegetated instream islands. By boat the South Delta can look either man-made, with evenly sloped and exotically-vegetated levees, or lush and green as one passes an instream island with small sandy beaches ringed with tules. By vehicle the project area looks vast and open, as most roadways are on the levees built to protect the sunken agricultural islands. Power transmission lines pass over the agricultural land in some areas.

Middle River east of Tracy Blvd. has areas resembling the bayous of Mississippi, with instream islands and heavily vegetated levees next to small farmsteads. Old River and Italian Slough meet at Widdows and Eucalyptus Islands, both flooded but with mature stands of eucalyptus trees on the original levees supporting a blue heron rookery. Grant Line and Fabian and Bell Canals and the Victoria Canals are cross channels offering straight-line travel and support enthusiastic waterskiers.

The California Water Project facilities on the west side of the project area are extensive in size. Their cumulative impact on the natural landscape of the area has been great. Little remains of a "natural" character surrounding these concrete canals and the Clifton Court Forebay, although between levees surrounding the Forebay are small wetlands created by trapped drainage, and dry upland areas suitable for recreation development.

The weather in the project area is also similar to that of the Delta as a whole. A boater in the warmer months will be more comfortable than a farmer on a tractor in the agricultural fields due to the cooling influence of the waterways; temperature inversions in the summer months result in brisk westerly surface winds that are commonly up to 25 miles per hour. Winter brings the "tule fog" with bone-chilling temperatures, although on occasion the weather can be sunny and relatively warm in protected spots.

### Regional Recreation Profile

The Delta is a unique natural and recreational resource serving a large regional area with large and growing populations. The Sacramento metropolitan area to the north, the San Francisco Bay Area to the west, and Stockton/Modesto/Tracy to the east and south, are all growing areas with large populations of potential and actual recreationists.

**Table 2**  
**County Population Estimates**

<u>County</u>	<u>1990</u>	<u>2020</u>
Contra Costa	810,300	970,826
Sacramento	1,051,400	1,508,498
San Joaquin	723,900	667,275
Solano	345,700	520,637

Source: State of California, Department of Finance, 1992

Recreational activities are diverse, from the predominant water-related uses such as waterskiing, fishing, and boating to land-based uses such as camping and picnicking. The northern part of the Delta offers the most concentrated area of existing recreation facilities, with many

marinas for boaters to choose from as well as camping facilities and picnic areas. With few exceptions, however, most of these are privately owned and are not available for use by the non-paying public. These marinas also offer year-round activities such as boat races and shows, fireworks displays, water festivals, fishing contests, etc. for public enjoyment. There are party yachts, houseboats, cruisers and fishing boats for rent. Private ferries cross channels where bridges don't exist to reach otherwise inaccessible islands.

Most of the public agency recreation facilities of the Delta are located on the northern and eastern sides. In general, recreation demand in the Delta has far surpassed the supply of available opportunities. Large numbers of campers, boaters, and other recreationists are regularly turned away from Brannan Island SRA during the peak use season, May through October. According to DPR's PARIS III documentation, most recreation activities in the Delta will increase in incidence in the 1990's:

**Table 3**  
**Projected Annual Recreation Demand on the Counties\***  
**(In Participation Days)\*\***

	1990	1995	2000
Waterskiing	2,446,507	2,592,080	2,719,105
Power Boating	1,413,631	1,229,801	1,306,584
Sailing	690,042	762,867	832,371
Stream Fishing	4,892,046	5,227,621	5,579,488
Hunting	1,311,778	1,377,490	1,436,268
Picnicking	6,598,639	7,001,990	7,388,427
Nature Appreciation	8,131,936	8,785,304	9,412,144
Freshwater Swimming	2,942,443	3,119,402	3,296,786
Board surfing/Sailing***	547,231	583,542	612,280
Camping	4,416,637	4,718,002	4,995,291

\* Contra Costa, Sacramento, San Joaquin and Solano

\*\* A participation day is one person engaging in a recreation activity for any amount of time in one day

\*\*\* Contra Costa and Solano Counties only; data were unavailable for the other two counties.

Source: California Department of Parks and Recreation, PARIS III.

Of the 56 potential recreation sites identified in the Delta Outdoor Recreation Implementation Plan, prepared in June 1981 for the California Department of Water Resources, very few have been or are programmed to be developed in the near future. The California Department of Parks and Recreation has recently replaced two worn-out restroom buildings with combination restroom/shower buildings in the campground at Brannan Island State Recreation Area and plans to replace two more in the next phase of work. Day-use access will increase at Brannan Island's Windy Cove when a picnic/staging area for windsurfers is constructed, but this project has been postponed for lack of staff funding. The Department is actively negotiating for the acquisition of approximately 500 acres at Delta Meadows, 15 miles north of Brannan Island, which is a natural wetland area used by boaters as a destination day use area. The Department, if successful in its negotiations, would be required to produce a General (master) Plan for the acquisition prior to any permanent development there, but it is likely it would remain primarily a protected natural area with little formal facility development.

Solano County is not planning any development of Delta recreation facilities in the near future due to lack of funds. Solano County's only facility in the Delta is Sandy Beach Park on the Sacramento River near Rio Vista.

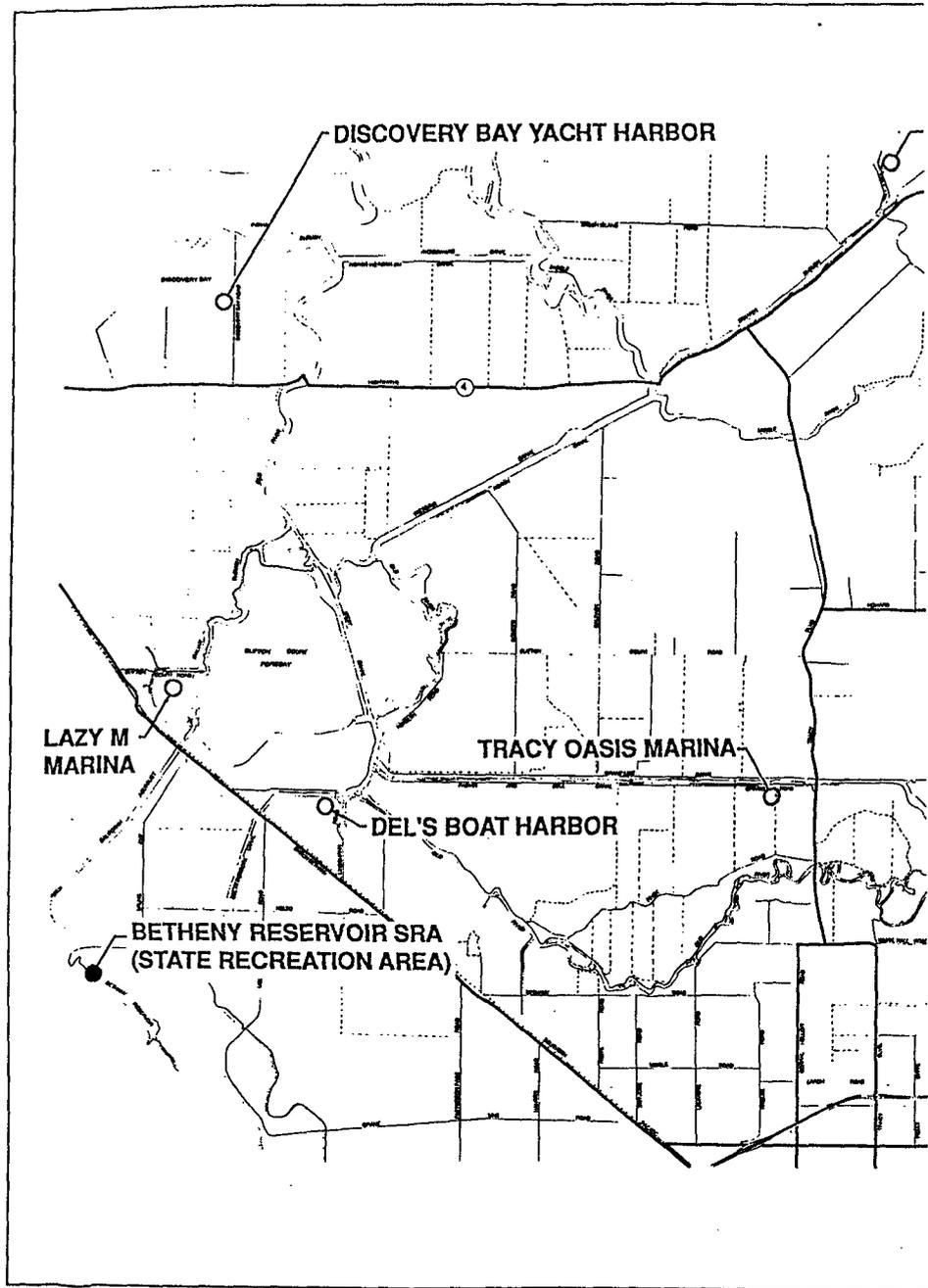
San Joaquin County operates Westgate Landing off Highway 12 near Terminous in the northeast area of the Delta. They have recently installed 7 campsites for a total of 14, with 7 more to be constructed this year. The county hopes to install up to 20 more campsites and additional boat berths to the 18 existing at Westgate Landing in the future, but lack of funding for development projects leaves the scheduling for these projects uncertain. There is currently no public boat launch at Westgate Landing, but visitors spend the night there and use private boat launching facilities in the area. There is also an eighty-foot fishing pier at Westgate Landing. The county is pursuing funding through other agencies for a boat launch facility at Tower Park Marina (north of Westgate Landing); however, construction of this facility would not occur for at least 5 years.

San Joaquin County operates Mossdale Crossing, with a public boat ramp and courtesy dock, and the Dos Reis launching ramp and campground with 26 full hookup campsites in the south Delta off I-5 near Lathrop. Durham Ferry, 9 miles south of Manteca, is a state-owned property operated by the county. It has 75 campsites on 176 acres of open space with 1.5 miles of river frontage. It features a natural area with hiking and equestrian trails, an archery range, and relatively quiet

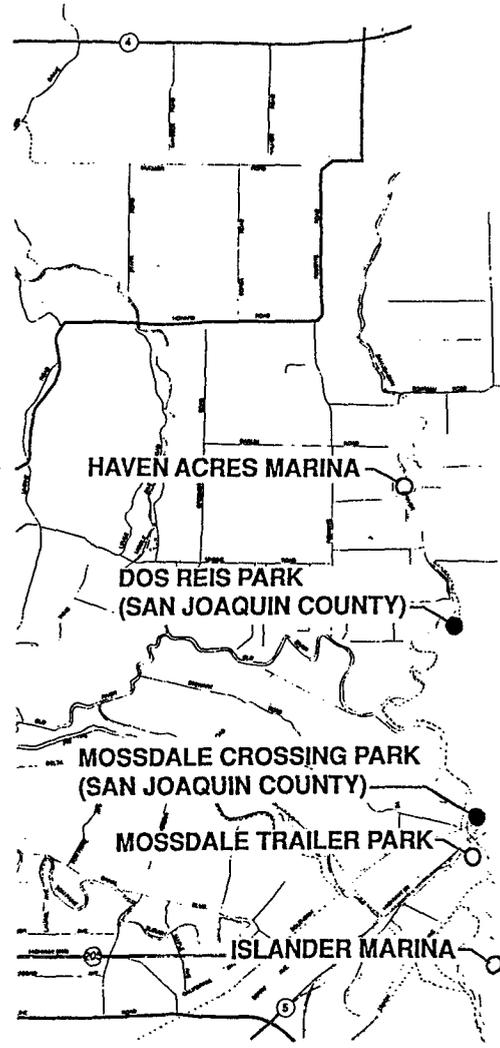
river frontage for bank fishing. There is a historical area next to the park, where Jedediah Smith established a camp from which to explore the vicinity. Dos Reis and Mossdale Crossing represent the only public marina/launch ramps in the south Delta with the exception of Bethany Reservoir State Recreation Area south of Clifton Court Forebay, operated by DPR. The Bethany Reservoir facility does not connect boaters to Delta waterways.

Contra Costa County on the southwest side of the Delta has no facilities in the Delta area and is not planning to add any in the future.

Sacramento County is not currently planning any new recreation facilities in the Delta. The county is in the process of updating its General Plan and has identified areas for preservation; the plan recognizes the State properties of Sherman and Twitchell Islands as public open space. The county leases Sherman Island for a boat ramp it operates, and the shoreline has a day-use area used primarily by windsurfers. Hogback Island has a county boat ramp available for public use, as well as a picnic area. Georgiana Slough has a car-top boat launch and fishing area. All of these facilities are in the northern part of the Delta.



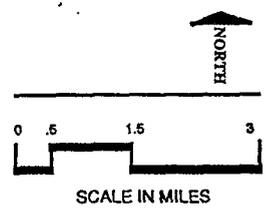
**KEY SLOUGH HARBOR**



**LEGEND**

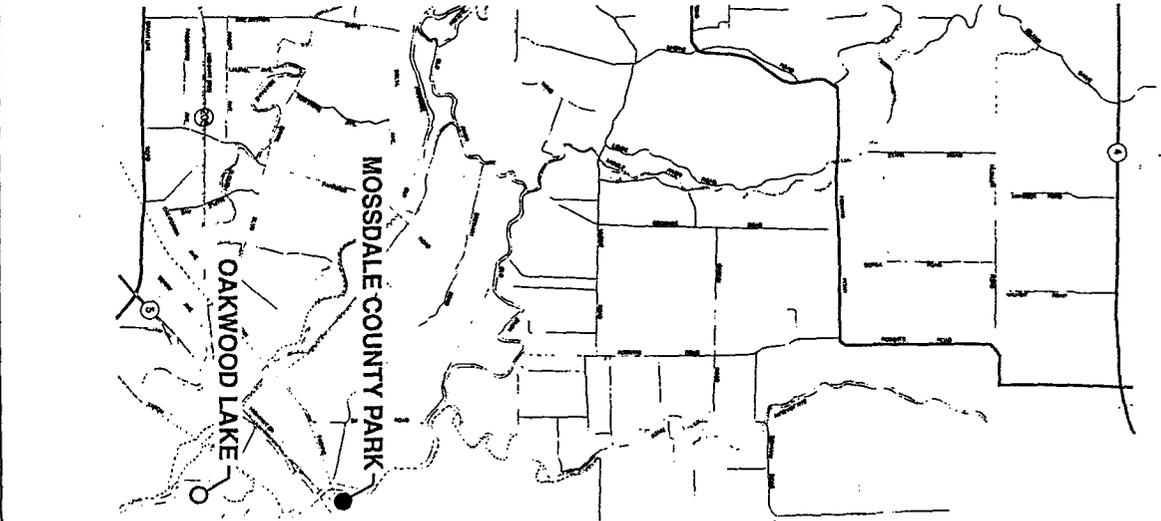
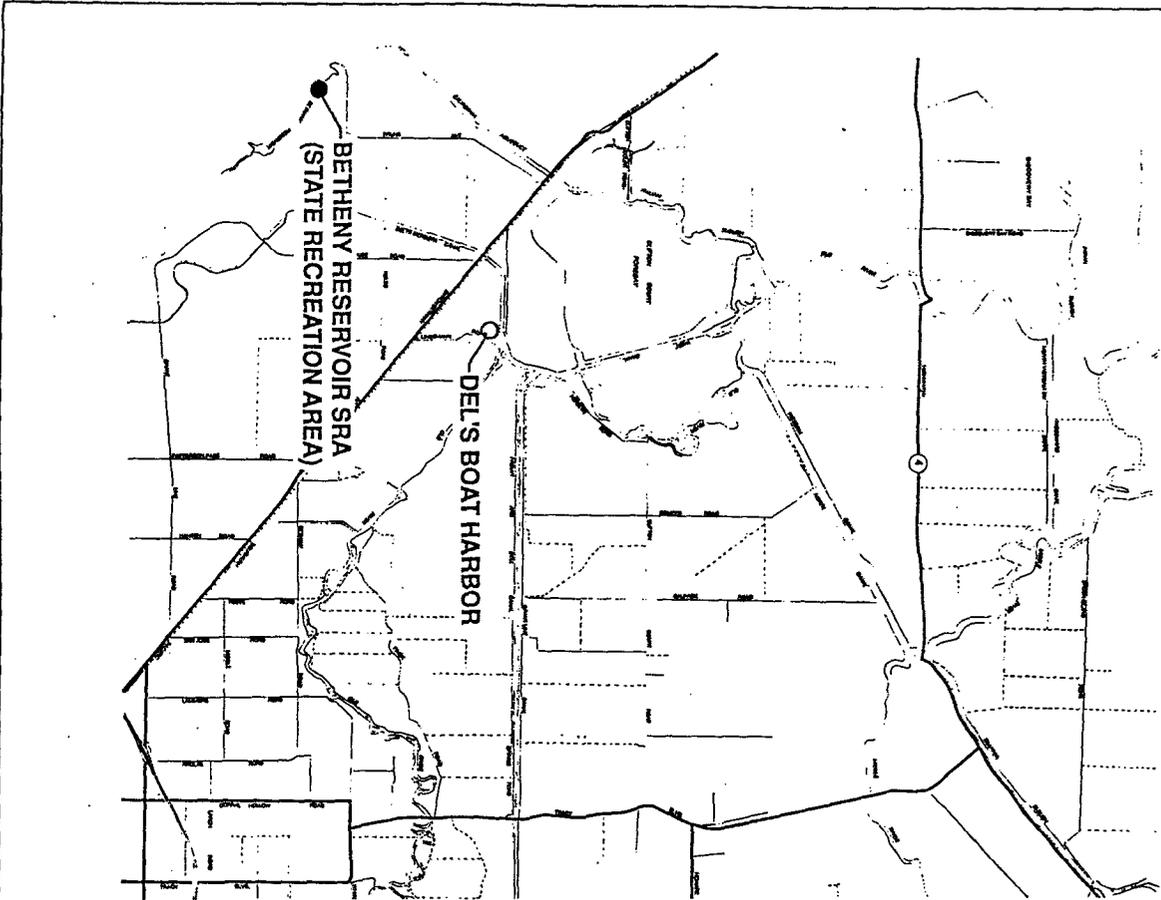
- EXISTING PUBLICLY OWNED BOAT RAMPS
- EXISTING PRIVATELY OWNED BOAT RAMPS

**EXISTING BOAT RAMPS**



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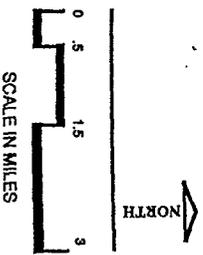
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- EXISTING PUBLICLY OWNED FISHING PIERS
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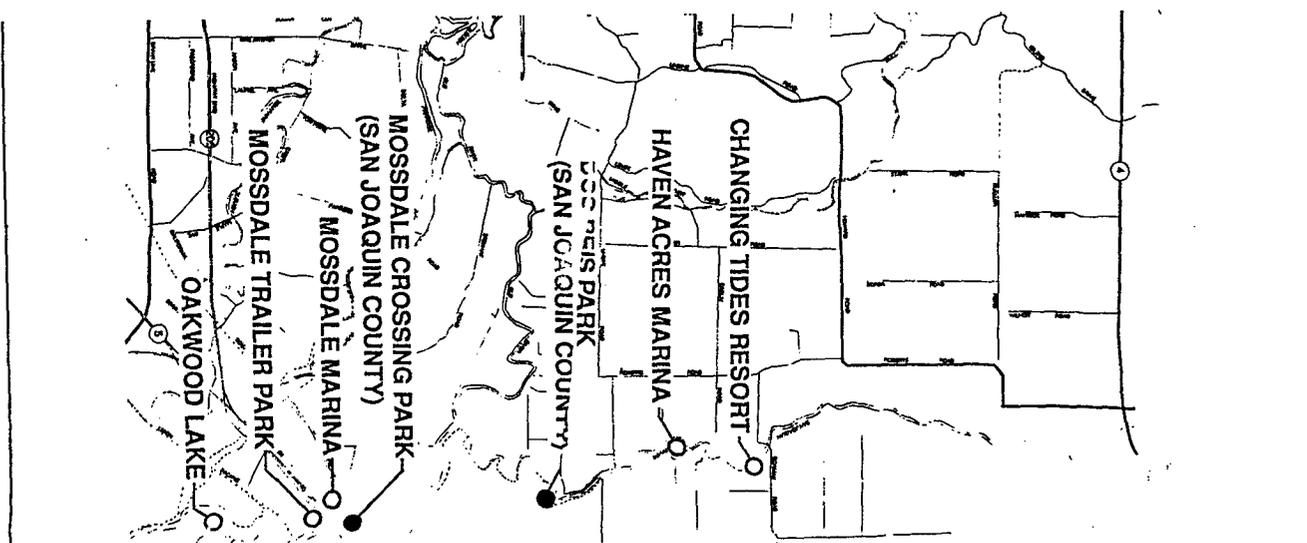
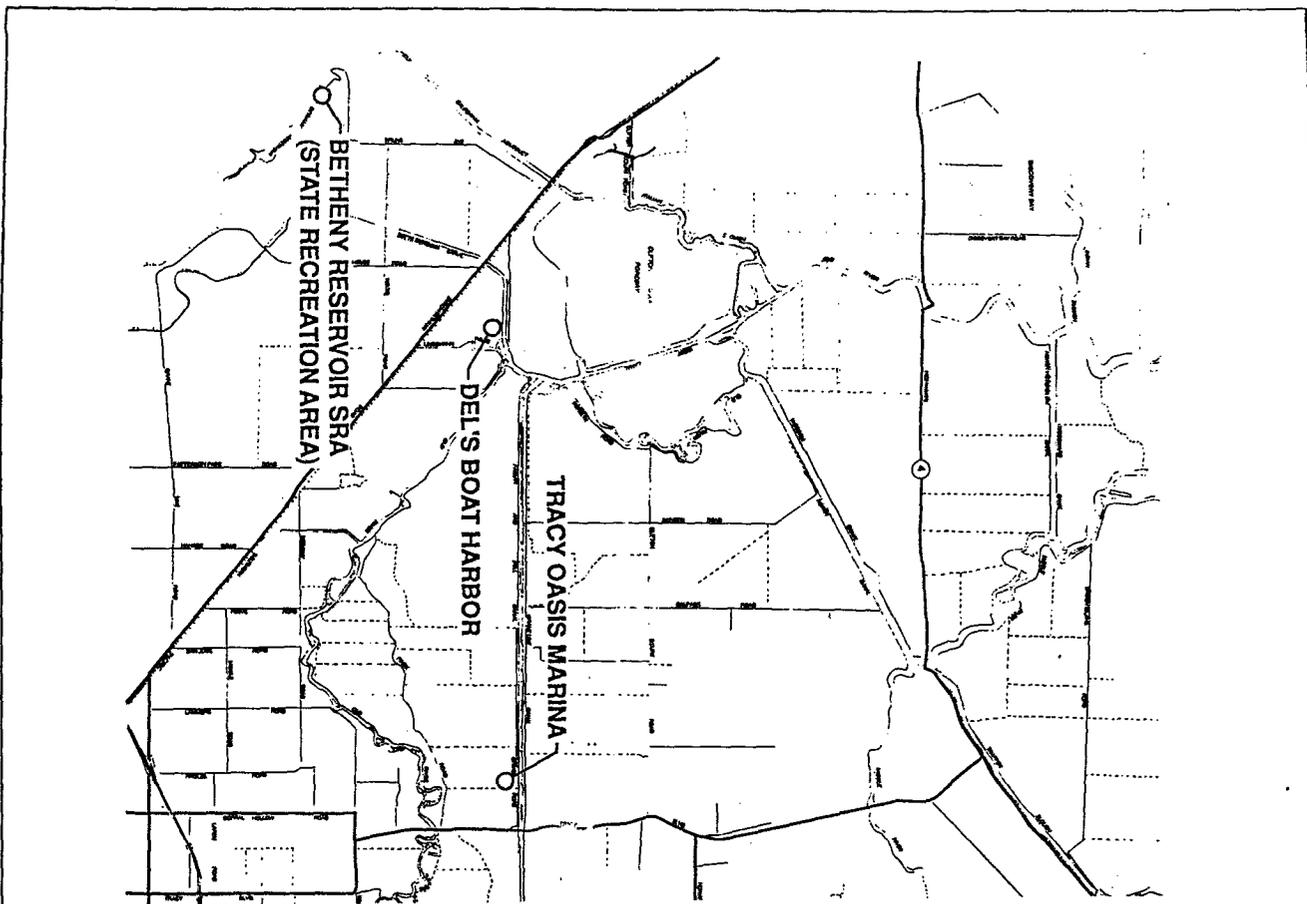
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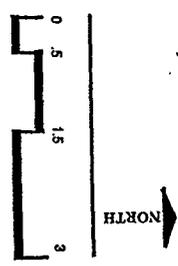




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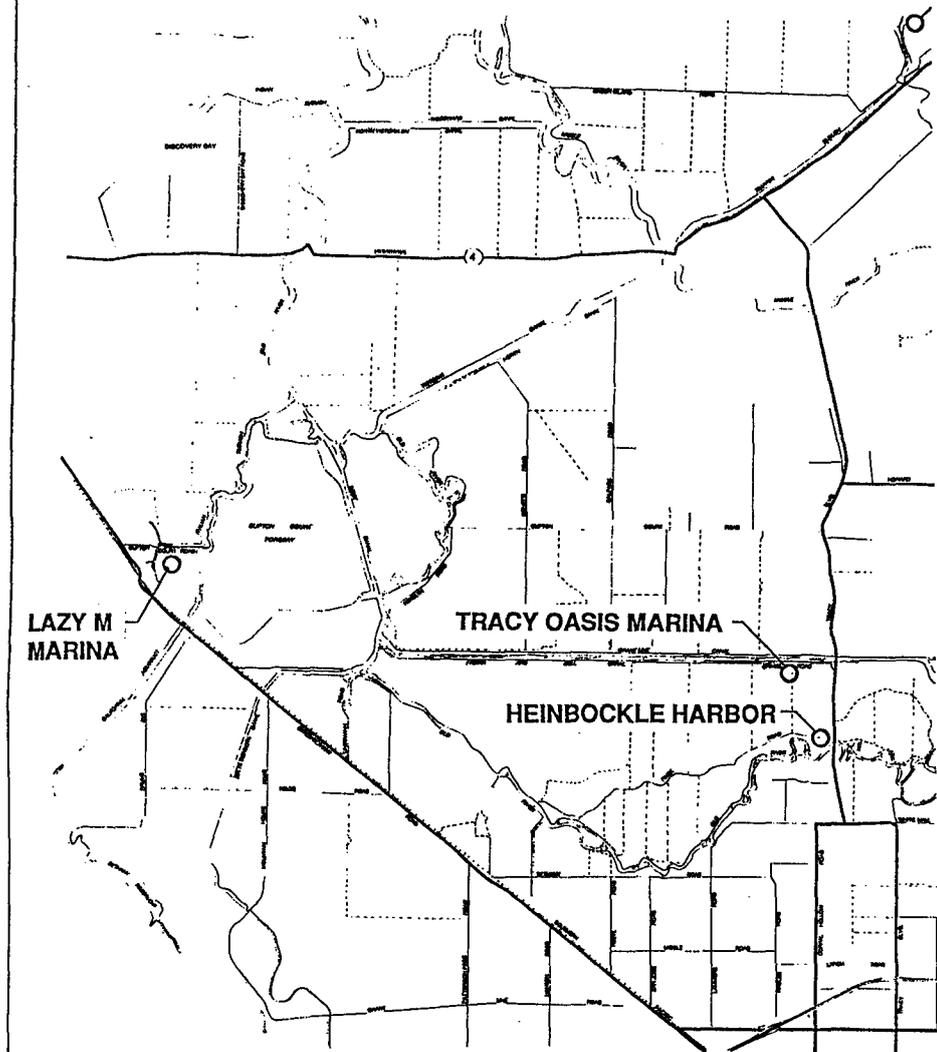
- EXISTING PUBLICLY OWNED PICNIC AREAS
- EXISTING PRIVATELY OWNED PICNIC AREAS

EXISTING  
PICNIC AREAS

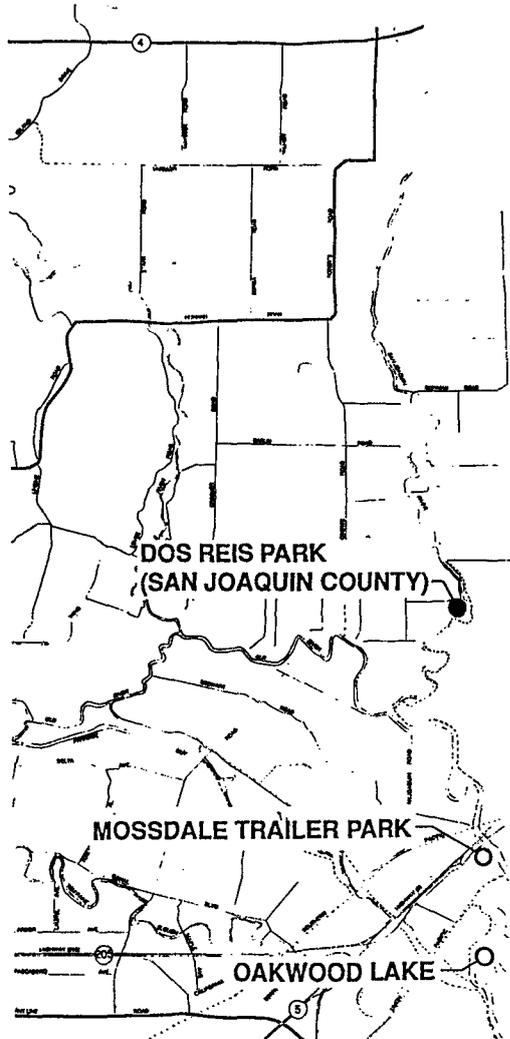


SOUTH DELTA RECREATION CONCEPT EXISTING PICNIC AREAS	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF WATER RESOURCES		REVISIONS	DATE	DESIGNED
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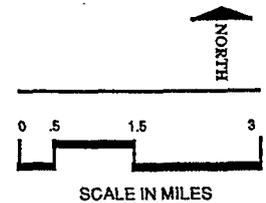
**ISKEY SLOUGH HARBOR**



**LEGEND**

- EXISTING PUBLICLY OWNED CAMPGROUNDS
- EXISTING PRIVATELY OWNED CAMPGROUNDS

**EXISTING CAMPGROUNDS**



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<b>MAP</b>			
<b>5</b>			

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Dos Reis County Park offers unique picnic areas on the waters edge.

## SUMMARY OF EXISTING RECREATION FACILITIES

EXISTING RECREATION SITES	EXISTING RECREATION FACILITIES								
	DAY USE						OVERNIGHT USE		
	PARKING SPACES	PICNIC SITES	RESTROOM BUILDINGS	BOAT RAMPS	FISHING PIERS	COURTESY DOCKS	CAMPSITES	SHOWER/ RESTROOM BUILDING	TRAILER SANITATION STATION
<b>PUBLICLY OWNED SITES</b>									
BETHENY RESERVOIR SRA	120	35	1	1	1	1	0	0	0
DOS REIS PARK	43	13	0	1	0	1	26	1	1
MOSSDALE CROSSING PARK	55	5	1	1	1	0	0	0	0
<b>PRIVATELY OWNED SITES</b>									
CHANGING TIDES RESORT	5	1	1	0	0	1	0	0	0
DEL'S BOAT HARBOR	110	10	1	1	1	0	0	0	0
DISCOVERY BAY YACHT HARBOR	250	0	1	1	0	1	0	0	0
HAVEN ACRES MARINA	5	2	1	1	0	1	0	0	0
HEINBOCKLE HARBOR	20	0	1	0	0	1	5	0	0
ISLANDER MARINA	10	0	0	1	0	1	0	0	0
LAZY M MARINA	50	0	1	1	0	1	10	0	0
MOSSDALE MARINA	4	2	1	0	0	1	0	0	0
MOSSDALE TRAILER PARK	5	5	0	1	0	1	11	1	0
OAKWOOD LAKE	200	200	3	0	1	1	357	4	1
TRACY OASIS MARINA	25	5	1	1	0	1	20	1	0
UNION POINT RESORT	15	0	0	0	0	1	0	0	0
WHISKEY SLOUGH HARBOR	25	0	1	1	0	1	15	0	0
<b>TOTALS</b>	<b>942</b>	<b>278</b>	<b>14</b>	<b>11</b>	<b>4</b>	<b>14</b>	<b>444</b>	<b>7</b>	<b>2</b>



## **SPIRIT OF PLACE**

The South Delta has its own unique set of environmental, cultural, social and historical qualities which distinguishes it from other places in the state. These qualities, or "spirit of place," identify the intrinsic values that pertain to the essential and inherent nature of the place. They create the feelings and physical and intellectual stimulation that a person experiences when there, and what the person later remembers about that place.

In order to determine what the "spirit of place" for the South Delta has been and to help shape its elements for the future, three essential questions should be addressed: a) what kind of place was the Delta before Euroamerican culture arrived? b) what kind of place is it today? and c) what kind of place should it be in the future?

### What it was:

Before Euroamericans brought their cultural and land-altering changes to the Delta, the entire area was a natural marsh ecosystem with Native Americans living off riches of wildlife and vegetation. The Delta was a lowland, with water an essential element in great supply. Tule fogs in winter and humid heat in summer were part of the natural scene. Vegetation communities varied from marsh to oak woodland with associated animals in vast numbers.

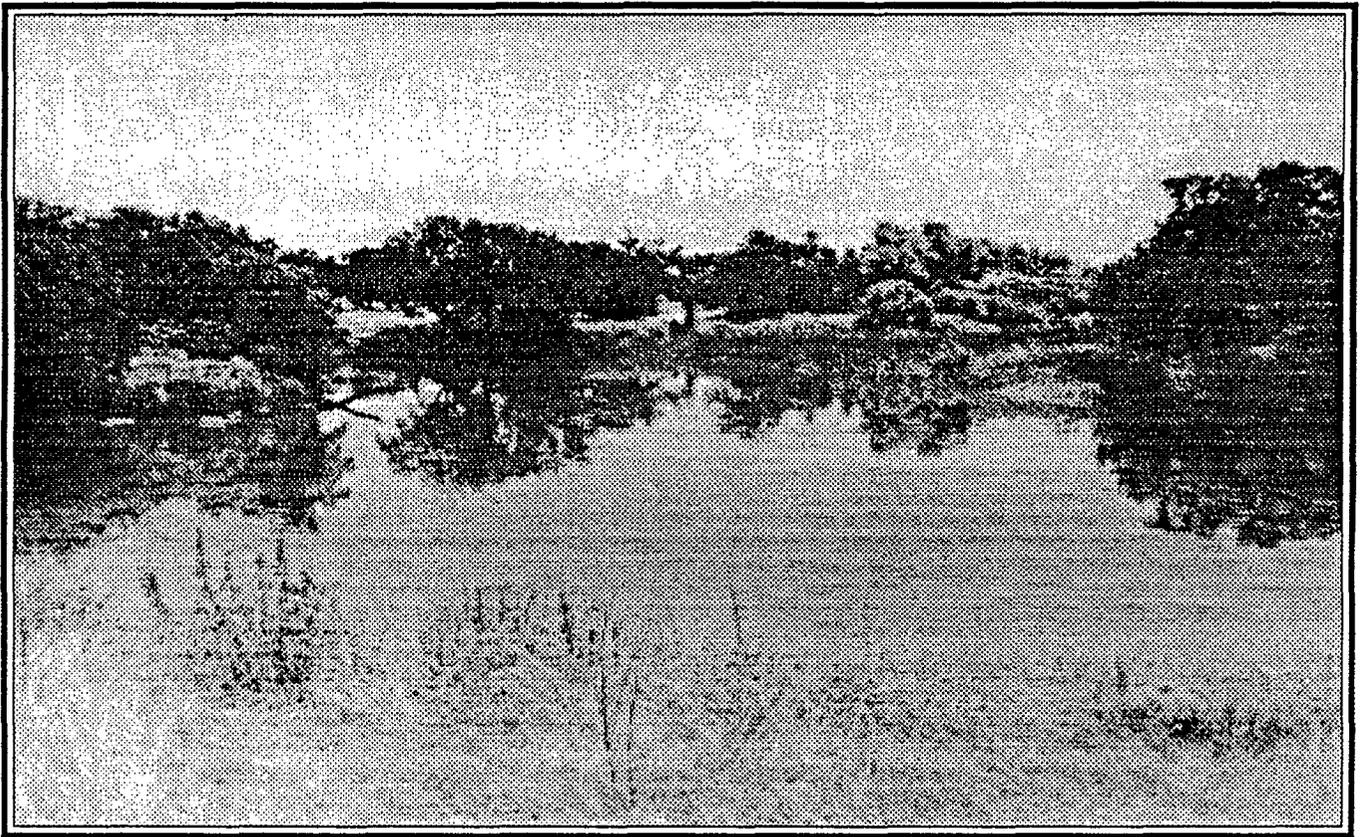
In the mid- to late 1800's, after gold fever had died, farmers diked the swamps by shovel and wheelbarrow and planted wheat. They reaped a phenomenal 50 bushels to the acre (today Kansas averages about 35) and the great California land rush was on. Later, steam-powered clamshell dredges were used to construct the levees and, by 1930, more than 700,000 acres had been "reclaimed." Pumps were brought in to maintain delta farms that lay below sea level. In the process of reclaiming the land for agricultural use, most of the original wild marshland ecosystem was extensively altered and lost.

What it is today:

Today, areas of the South Delta are isolated remnants of other times with patches of the marshlands and riparian vegetation communities which occurred before the nineteenth century. No major towns exist in the South Delta area, although Stockton and Tracy are just outside its boundaries. Most of the area is occupied by farmlands bordered by a complex maze of levees.

What it should be:

The South Delta Water Management Program will provide a wealth of opportunity for land and water recreation. Previous recreation studies have shown that there is a great need to improve the quantity and quality of recreation facilities in the area. The main thrust of this document is to recommend recreation development which provides a harmony between the protection of natural resources- remnants of original ecosystems, existing and proposed natural resource areas, and restored landscapes- and the human enjoyment of these resources. If all of the "low impact" recreation alternatives are implemented, there will be a net increase of about 69 acres in recreational development. If all of the "moderate impact" alternatives are implemented, there will be a net increase of about 90 acres in recreational development. The South Delta will never again be as it was prior to the nineteenth century. However, the South Delta Water Management Program creates opportunities to offer to the public areas for active recreation on existing waterways and levees, as well as quieter recreation in remnant pockets of wildland and potentially restored areas.



Vegetation in portions of the South Delta Area varies from marsh to oak woodland.

## PLANNING ISSUES

### I. RECREATION USE

- A. Conflicting water use, particularly between boaters and fishermen, can create unpleasant and dangerous recreation experiences.
- B. The quality of the recreation experience in the South Delta Region limited by the lack of: (1) adequate public access, (2) publicly owned land, and (3) recreation facilities.
- C. Opportunities for experiencing undisturbed natural ecological areas are extremely limited.
- D. Due partially to a lack of signage, visitors often trespass on private property causing vandalism, littering, damage to levees, and pollution to waterways.
- E. The ownership of public and private land is not clearly defined.
- F. Recreation in the South Delta Region is constantly changing with the increasing use of new types of recreation such as personal watercrafts and mountain bikes.

### II. RECREATION FACILITIES

- A. Public recreation opportunities are limited because of insufficient facilities.
- B. There is an extreme shortage of recreation facilities in the South Delta Region, particularly campgrounds, picnic areas, mooring/berthing facilities, boat launch ramps, fishing areas, trails, and interpretive facilities.
- C. Existing recreation areas are often filled to capacity, particularly on summer weekends.
- D. Existing recreation facilities are not very well dispersed throughout the South Delta Region.
- E. There is a lack of interpretive facilities in the South Delta Region which would inform visitors of recreation opportunities and access.

### **III. RECREATION ACCESS**

- A. Public access to land and water is limited since most land is privately owned.
- B. Access to recreation facilities is often difficult due to the large geographical area, limited road system, and numerous levees.
- C. Parking along public roads is extremely limited.
- D. The South Delta Region lacks a comprehensive hiking and biking trail system.
- E. The proposed water barriers will restrict boat circulation unless boat locks or launch ramps are installed.

### **IV. RECREATION MANAGEMENT**

- A. Urban encroachment continually threatens open space and agricultural use in the South Delta Region.
- B. The goals and policies of various user groups in the South Delta Region are sometimes in conflict with one another.

## **GOALS AND OBJECTIVES**

### **I. RECREATION USE**

**GOAL:** To improve the quality of the recreation experience in the South Delta Region.

**OBJECTIVES:**

- A. Minimize user conflicts on land and in the water.
- B. Separate high and low intensity recreation uses.
- C. Preserve the wild and scenic character of the South Delta Region.
- D. Identify potential natural ecological areas and possible recreation opportunities in those areas.
- E. Preserve natural and scenic values within ecological areas.
- F. Identify new recreation activities and their suitability to the South Delta Region.
- G. Provide low intensity uses such as picnic areas and primitive campsites, in appropriate natural ecological areas.

### **II. RECREATION FACILITIES**

**GOAL:** To provide greater public recreation opportunities in the South Delta Region.

**OBJECTIVES:**

- A. Identify recreational facility shortages in the Region.
- B. Provide more public recreation facilities in the Region.
- C. Provide diverse recreation opportunities of low to moderate intensity.
- D. Disperse recreation facilities throughout the South Delta Region.
- E. Provide regional interpretive signs to: (a) inform visitors of recreation opportunities and access and (b) to clearly identify public property and minimize trespassing.

### **III. RECREATION ACCESS**

**GOAL:** To provide improved visitor and boat access to recreation facilities in the South Delta Region.

**OBJECTIVES:**

- A. Provide parking areas near recreation facilities and existing public roads, where feasible.
- B. Provide boat-in recreation facilities, where appropriate, in areas inaccessible by vehicle.
- C. Provide improved handicap access to existing and proposed recreational facilities.
- D. Develop a multi-use trail system linking existing and proposed recreation facilities.
- E. Provide bicycle-in recreation facilities along a trail system.
- F. Establish easements across private property and along existing levees to improve access.
- G. Provide improved boat circulation by deepening and widening existing channels.
- H. Minimize obstructions to existing boat circulation patterns by boat locks or launch ramps at proposed water barrier sites.
- I. Improve boat access to waterways.

### **IV. RECREATION MANAGEMENT**

**GOAL:** To promote cooperation between the various recreation providers in meeting the recreation needs the South Delta Region.

**OBJECTIVES:**

- A. Establish common goals and objectives for the various public and private recreation providers.
- B. Encourage the improvement of interagency agreements to promote regional recreation.
- C. Preserve open space near urban encroachment areas.

## POTENTIAL RECREATION ACTIVITIES

### I. BOATING

- A. Motorboating
- B. Water-skiing
- C. Personal Watercraft (Jet Skis, etc.)
- D. Sailing
- E. Sailboarding
- F. Canoeing/Kayaking

### II. FISHING

- A. Shore/Dock Fishing
- B. Boat Fishing

### III. CAMPING

- A. Recreational Vehicles
- B. Tent/Car
- C. Tent/Boat
- D. Tent/Bike

### IV. PASSIVE RECREATION

- A. Picnicking
- B. Hiking
- C. Bicycling
- D. Dirt Biking
- E. Horseback Riding
- F. Sightseeing and Relaxing

### V. SWIMMING

- A. Snorkeling
- B. Scuba Diving

### VI. HUNTING

### VII. ENVIRONMENTAL EDUCATION

## **POTENTIAL RECREATION FACILITIES**

- I. BOATING FACILITIES**
  - A. Boat Launch Ramp
  - B. Boat Dock
  - C. Mooring Facility
  - D. Boat Rental Facility
  - E. Marina
  
- II. FISHING FACILITIES**
  - A. Fishing Dock
  - B. Fish Cleaning Facility
  
- III. CAMPING FACILITIES**
  - A. Tent Campsite
  - B. Recreational Vehicle Campsite
  - C. Group Campsite
  - D. Primitive Campsite
  - E. Boat-in Campsite
  
- IV. PASSIVE RECREATION FACILITIES**
  - A. Picnic Area
  - B. Group Picnic Area
  - C. Hiking/Biking/Horse Trail
  - D. Scenic Overlook
  
- V. SWIMMING FACILITIES**
  - A. Sandy Beach Area
  
- VI. DESIGNATED HUNTING AREAS**
  
- VII. ENVIRONMENTAL EDUCATION FACILITIES**
  - A. Interpretive Trail and Boardwalk
  - B. Interpretive Displays and Signs
  - C. Visitor Center
  
- VIII. PARKING AREAS**

## **DESIGN CRITERIA**

In the event the recreation concepts in this document become actual facilities, the following is a listing of criteria to help guide appropriate construction and maintenance of those facilities. These development criteria would impart a high level of quality to recreation experiences anywhere within the Delta region by helping preserve existing landscapes with recreation value as well as by creating new recreation facilities that would enhance public use and enjoyment of the area.

### **SITE DESIGN**

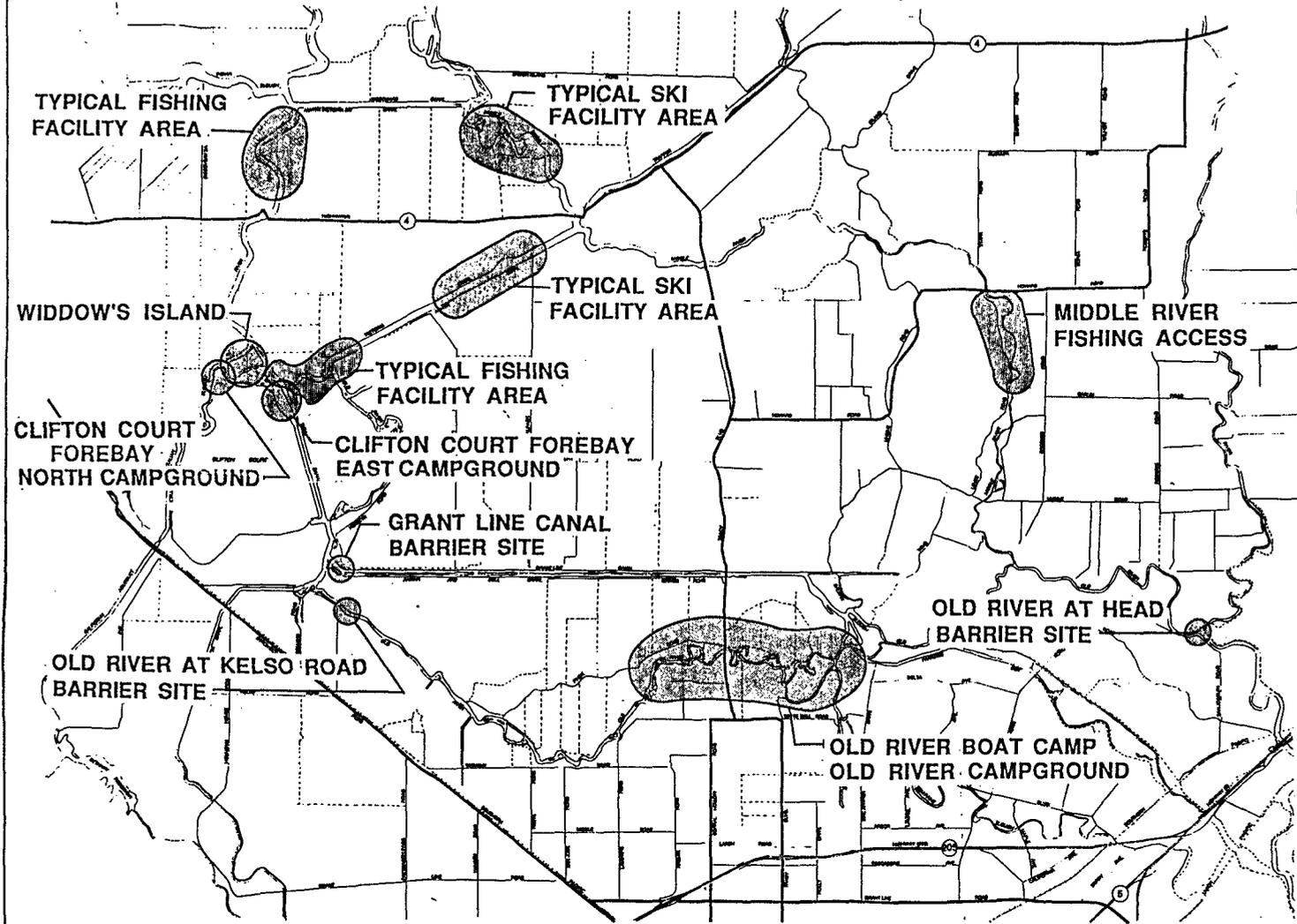
- Create native habitat wherever possible. Plant native trees and shrubs and water them with temporary drip irrigation systems.
- Protect all native plant and animal species from further decrease in numbers.
- Mitigate any destruction of native habitat by facility development with at least the equivalent amount of restoration of habitat.
- Minimize grading to minimize erosion of peat soils.
- Preserve open views of water bodies and natural landscapes where possible.
- Site structures for minimal visual impact on the site or from surrounding areas. Screen structures from natural areas.
- Screen outdoor use areas and structures from wind and sun.
- Link circulation corridors throughout site development areas, and with area-wide traffic corridors. Separate circulation uses where possible. Screen traffic areas from structures and recreation use areas.
- Site all structures away from archeologically-significant areas.
- Site all permanent structures away from high-tide and high-flow zones. Any structures in these zones are to be removable.

## ARCHITECTURAL DESIGN

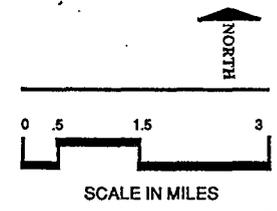
- Buildings and structures are to be completely disabled-accessible.
- Design structures to be in harmony with the site. Low-profile structures are preferred to blend with the level landscape. Colors and materials are to blend with the natural environment.
- Wherever possible, design for views of the water and natural landscapes.
- Structures are to be designed to withstand seismic action.
- Structures are to use fire-retardant wood and roofs.
- Structures are to incorporate energy-efficient heating and cooling systems.
- Develop interpretive signage/graphics consistent with architectural design and to blend with the natural environment.

## SUMMARY OF PROPOSED RECREATION FACILITIES

PROPOSED RECREATION SITES	TOTAL ACREAGE	PROPOSED RECREATION FACILITIES								
		DAY USE						OVERNIGHT USE		
		PARKING SPACES	PICNIC SITES	RESTROOM BUILDINGS	BOAT RAMPS	FISHING PIERS	COURTESY DOCKS	CAMPSITES	SHOWER/ RESTROOM BUILDING	TRAILER SANITATION STATION
<b>CLIFTON COURT FOREBAY NORTH CAMPGROUND</b>										
• LOW IMPACT PLAN	8.0	0	0	0	0	1	0	16	1	0
• MODERATE IMPACT PLAN	8.5	0	0	1	1	1	1	30	2	1
<b>CLIFTON COURT FOREBAY EAST CAMPGROUND</b>										
• LOW IMPACT PLAN	10.0	0	0	0	0	2	0	27	1	1
• MODERATE IMPACT PLAN	14.0	0	0	0	0	4	0	40	2	1
<b>WIDDOW'S ISLAND</b>										
• LOW IMPACT PLAN	2.6	0	3	0	0	0	1	0	0	0
• MODERATE IMPACT PLAN	2.6	0	10	0	0	0	3	0	0	0
<b>GRANT LINE CANAL BARRIER SITE</b>										
• LOW IMPACT PLAN	4.0	20	10	1	0	2	0	0	0	0
• MODERATE IMPACT PLAN	4.5	17	8	1	0	2	0	0	0	0
<b>OLD RIVER AT KELSO ROAD</b>										
• LOW IMPACT PLAN	3.0	9	5	1	0	1	1	0	0	0
• MODERATE IMPACT PLAN	5.0	22	15	1	0	2	2	0	0	0
<b>OLD RIVER CAMPGROUND</b>										
• LOW IMPACT PLAN	24.0	0	0	0	1	0	0	29	2	1
• MODERATE IMPACT PLAN	24.0	11	8	0	1	0	1	29	3	1
<b>OLD RIVER BOAT CAMP</b>										
• LOW IMPACT PLAN	7.0	0	0	3	0	0	0	18	0	0
• MODERATE IMPACT PLAN	7.0	0	0	3	0	0	0	29	0	0
<b>OLD RIVER AT HEAD BARRIER SITE</b>										
• LOW IMPACT PLAN	0.5	6	2	1	2	1	1	0	0	0
• MODERATE IMPACT PLAN	1.0	12	4	1	2	3	3	0	0	0
<b>MIDDLE RIVER FISHING ACCESS</b>										
• LOW IMPACT PLAN	8.0	30	20	1	0	2	0	0	0	0
• MODERATE IMPACT PLAN	19.0	18	0	0	1	2	1	21	2	1
<b>TYPICAL FISHING ACCESS</b>										
• LOW IMPACT PLAN	0.5	6	1	1	0	1	0	0	0	0
• MODERATE IMPACT PLAN	1.6	9	2	1	0	1	1	0	0	0
<b>TYPICAL SKI BEACH</b>										
• LOW IMPACT PLAN	1.0	0	3	1	0	0	1	0	0	0
• MODERATE IMPACT PLAN	2.5	0	6	1	0	0	1	0	0	0



**PROPOSED RECREATION FACILITIES**



DESIGNED	DATE	REVISIONS	APPROVED	DATE
DRAWN				
CHECKED				
RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF WATER RESOURCES				
SOUTH DELTA RECREATION CONCEPTS PROPOSED RECREATION FACILITIES				
DRAWING NO.				
MAP				
7				

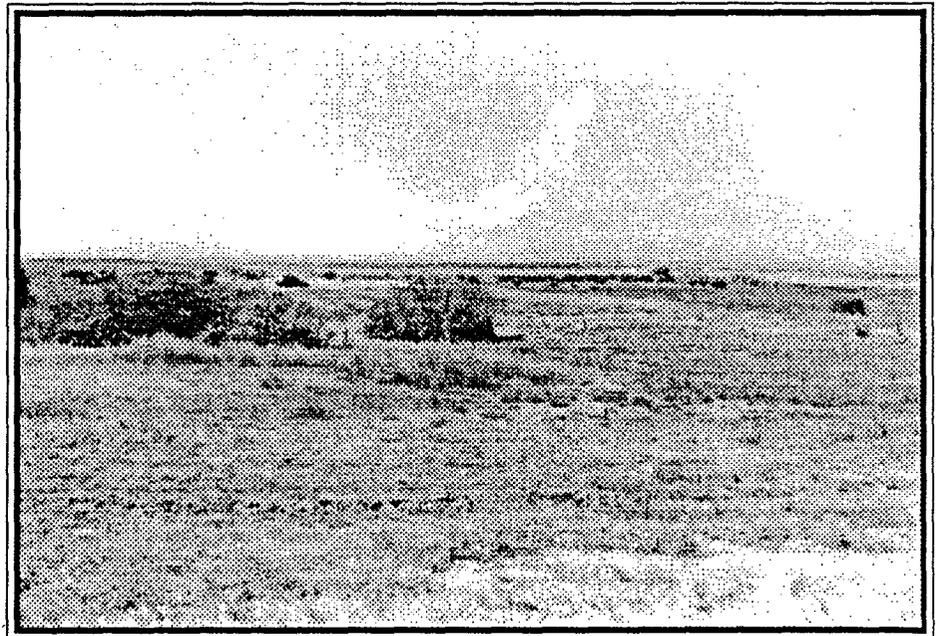
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## CLIFTON COURT FOREBAY NORTH CAMPGROUND

### EXISTING CONDITIONS

This area was originally part of Clifton Tract, remaining untouched when the water storage facility (Clifton Court Forebay) was constructed. It is adjacent to Italian Slough and the west side of Widdows Island. It is ringed with levees, the one on the south side containing Clifton Court Forebay. The site has small drainages along the west, south and east sides supporting wetland vegetation and associated wildlife habitat. The central portion is higher ground with grass cover and dirt tracks running from south to north. Access to this site is currently only available to Water Project employees along the levee road.



## CLIFTON COURT FOREBAY RECREATION AREA NORTH CAMPGROUND

### Recreation Concept

Providing publicly-owned camping facilities in the western area of the South Delta would contribute to the goal of dispersing recreation experiences throughout the area. Currently the only publicly-owned campgrounds in the South Delta are on the eastern side of the area. Clifton Court Forebay offers good fishing, and these development concepts include fishing docks in the Forebay itself.

### Recreation Plan Features

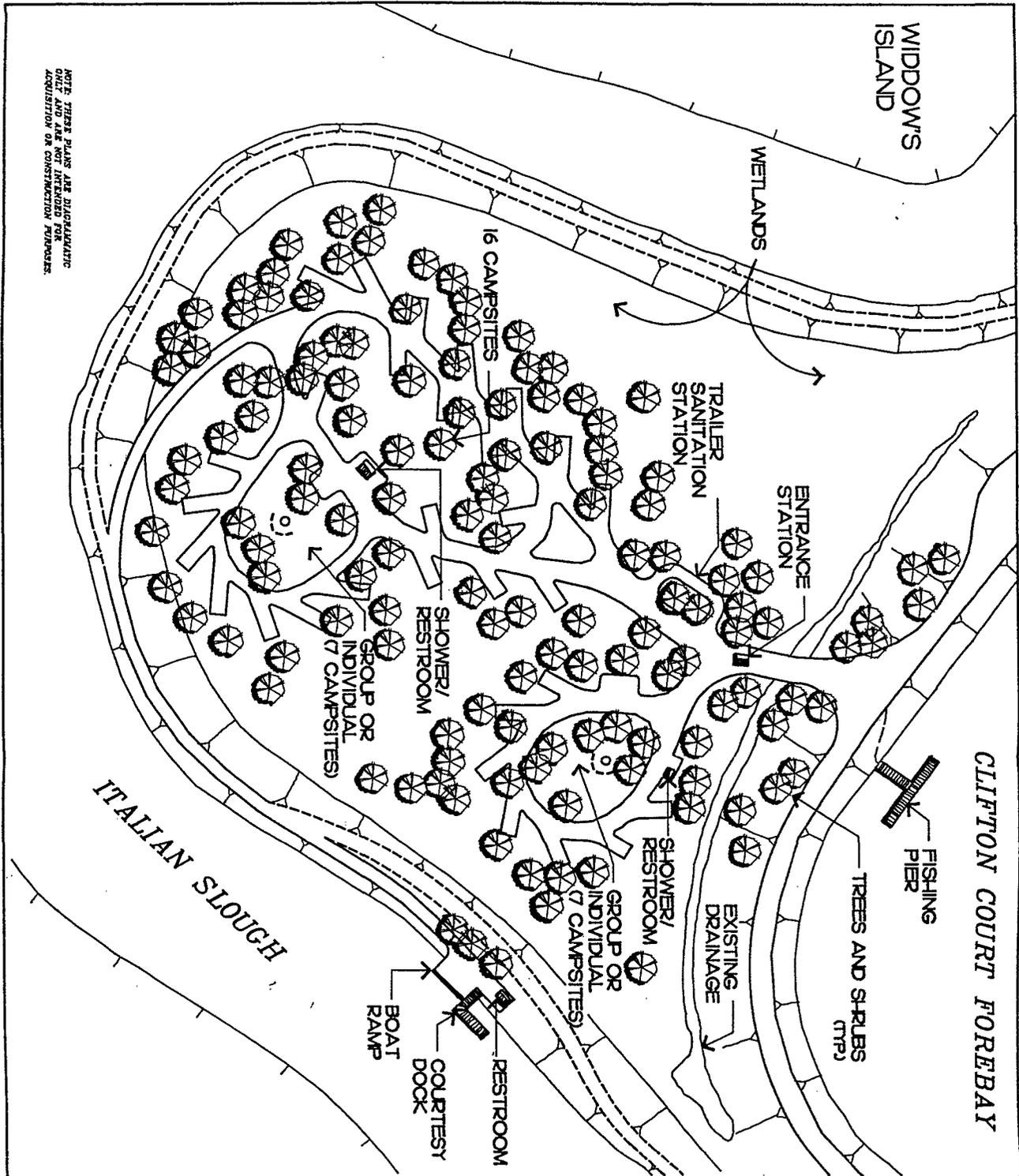
#### LOW IMPACT PLAN

- 1 fishing pier off Clifton Court Forebay shoreline
- 16 campsites total with paved spurs 12' wide x 45' long for parallel RV and trailer parking. Wheelstops at ends of spurs. One picnic table, fire ring/BBQ stove per campsite. RV utility hookups optional
- One DPR "150-series" restroom building (see Appendix for park restroom standards)
- Planting and irrigation of native trees and shrubs to screen campsites and provide wind protection
- Avoid existing wetland areas
- Optional entrance station for fee collection

#### MODERATE IMPACT PLAN

- 1 fishing pier off Clifton Court Forebay shoreline
- Boat launch ramp and courtesy dock for 4-5 boats off the west side of the campground area
- 30 campsites total with paved spurs 12' wide x 45' long for parallel RV and trailer parking. Wheelstops at ends of spurs. One picnic table, fire ring/BBQ stove per campsite. RV utility hookups optional
- Included are two smaller (7-site) loops for group or individual camping. Both to have a centrally-located fire ring, wind shelter structure, 3 BBQ stoves and 5 picnic tables in addition to the individual campsite furniture listed above
- DPR "150-series" and "100-series" restroom buildings in the campground and a "50-series" restroom building in the boat launch area (see Appendix for park restroom standards)
- Planting and irrigation of native trees and shrubs to screen campsites and provide wind protection
- Avoid existing wetland areas
- Optional entrance station for fee collection



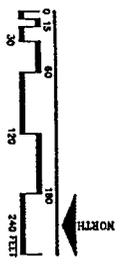


NOTE: THESE PLANS ARE DISCUSSANTIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

**PROPOSED FACILITIES**

- 1 FISHING PIER
- 1 BOAT RAMP
- 1 W/COURTESY DOCK
- 2 SHOWER/RESTROOM BUILDINGS
- 1 RESTROOM BUILDING
- 30 CAMPSITES INCLUDING 2 GROUP CAMPS
- 1 ENTRANCE STATION
- 1 TRAILER SANITATION STATION

**CLIFTON COURT FOREBAY NORTH CAMPGROUND**  
 MODERATE IMPACT



PROVIDER: CTS & NAME  
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 APPROVAL DATE

MAP  
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SOUTH DELTA RECREATION CONCEPTS  
**CLIFTON COURT FOREBAY NORTH CAMPGROUND**  
 MODERATE IMPACT

RESOURCES AGENCY OF CALIFORNIA  
 DEPARTMENT OF WATER RESOURCES

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

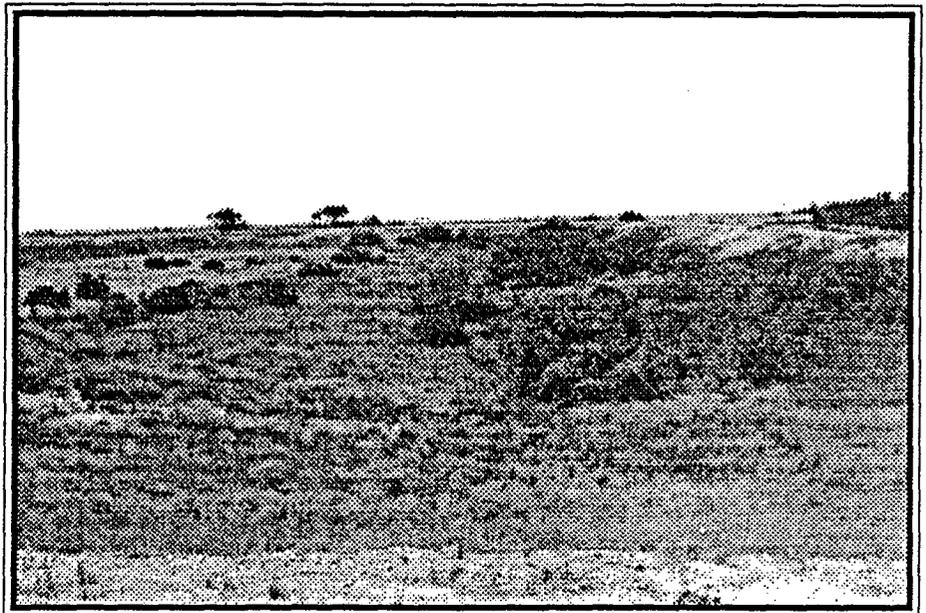
REVISION	DATE	DESIGNER
		S. MUSALLAMI
		DE. BRAUN
		ANRAGIS
		CHECKER
		B. HOOK

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## **CLIFTON COURT FOREBAY EAST CAMPGROUND**

### **EXISTING CONDITIONS**

On the northeast side of Clifton Court Forebay is another area originally part of Clifton Tract. This area averages approximately 400'-500' wide and 2500' long, between the Forebay and West Canal levees. Trapped rainfall and ground water have created areas vegetated with shrubs and grasses, and there are several dirt tracks crossing the area. This area is also low in elevation and relatively protected from strong winds.



## CLIFTON COURT FOREBAY RECREATION AREA EAST CAMPGROUND

### Recreation Concept

Providing publicly-owned camping facilities in the western area of the South Delta would contribute to the goal of dispersing recreation experiences throughout the area. Currently the only publicly-owned campgrounds in the South Delta are on the eastern side of the area. Clifton Court Forebay offers good fishing, and these development concepts include several fishing docks in the Forebay itself.

### Recreation Plan Features

#### LOW IMPACT PLAN

- 1 fishing pier off the east side of the loop area, in Old River
- 1 fishing pier in Clifton Court Forebay
- 27 campsites total with paved spurs 12' wide x 45' long for parallel RV and trailer parking. Wheelstops at ends of spurs. One picnic table, fire ring/BBQ stove per campsite. RV utility hookups optional. Included is one 10-campsite loop for group or individual camping
- Group area to have centrally-located fire ring, wind shelter, 3 BBQ stoves and 5 picnic tables in addition to the individual campsite furniture listed above
- One DPR "200-series" shower/restroom building (see Appendix for park restroom standards)
- 24'-wide AC-paved two-way access road off Clifton Court Forebay access road
- 500 l.f. trail over levees to fishing piers
- Planting and irrigation of native trees and shrubs to screen campsites and provide wind protection
- Optional entrance station for fee collection

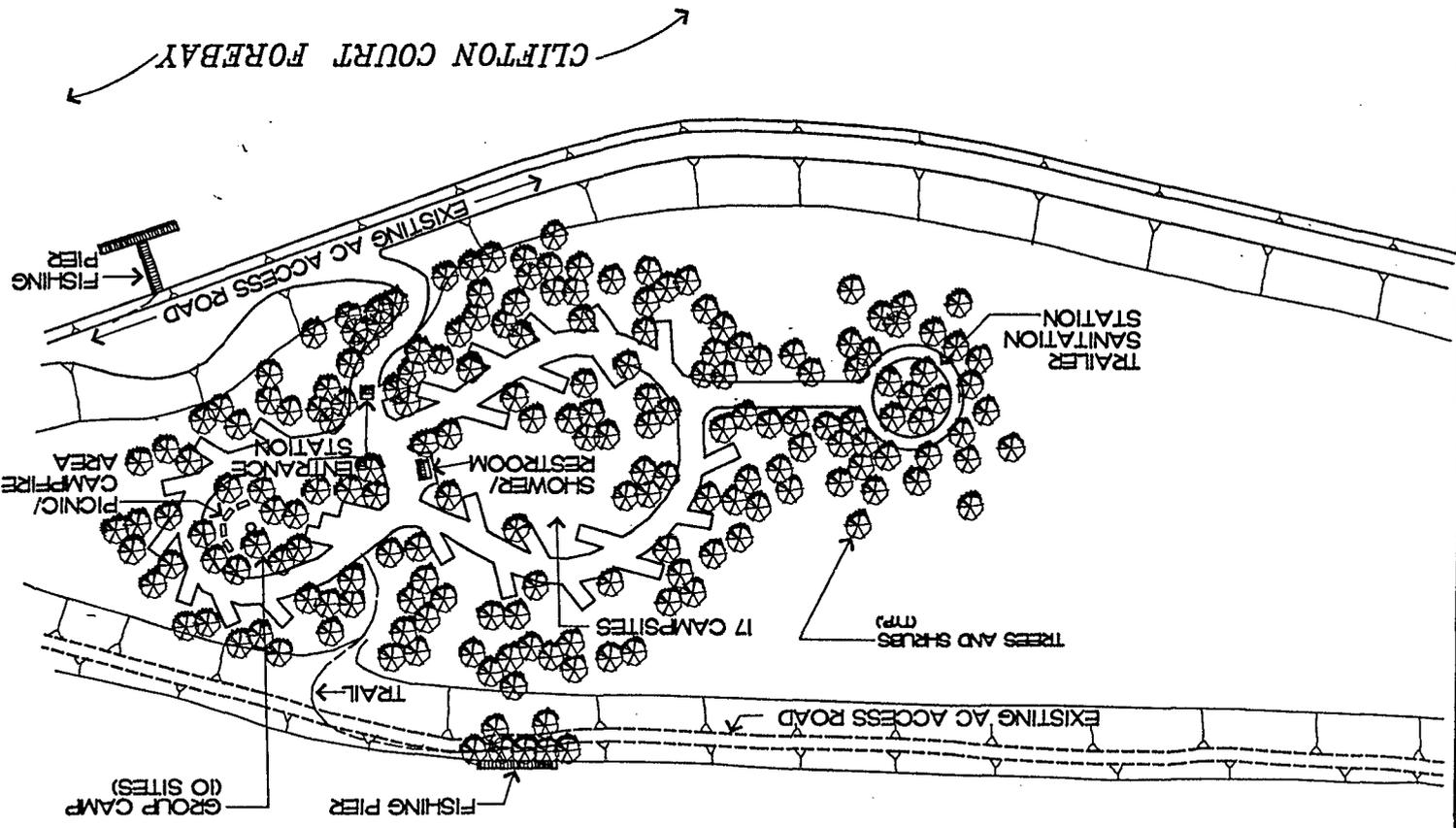
#### MODERATE IMPACT PLAN

- 2 fishing piers off the east side of the loop area, in Old River
- 2 fishing piers in Clifton Court Forebay
- 40 campsites total with paved spurs 12' wide x 45' long for parallel RV and trailer parking. Wheelstops at ends of spurs. One picnic table, fire ring/BBQ stove per campsite. RV utility hookups optional. Included are one 10-campsite loop and one 13-campsite loop for group or individual camping
- Group areas to have centrally-located fire ring, wind shelter, 3 BBQ stoves and 5 picnic tables in addition to the individual campsite furniture listed above
- DPR "200-series" and "100-series" shower/restroom buildings (see Appendix for park restroom standards)
- 24'-wide AC-paved two-way access road off Clifton Court Forebay access road
- 1200 l.f. trail over levees to fishing piers
- Planting and irrigation of native trees and shrubs to screen campsites and provide wind protection
- Optional entrance station for fee collection

NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.



CLIFTON COURT  
 FOREBAY  
 EAST  
 CAMPGROUND  
 LOW IMPACT



- PROPOSED FACILITIES**
- 2 FISHING PIERS
  - 1 SHOWER/RESTROOM BUILDING
  - 27 CAMPSITES INCLUDING 1 GROUP CAMP
  - 1 ENTRANCE STATION

MAP 10

DRAWING NO.

SOUTH DELTA RECREATION CONCEPT'S  
 CLIFTON COURT FOREBAY  
 EAST  
 CAMPGROUND  
 LOW IMPACT

RESOURCES AGENCY OF CALIFORNIA  
 DEPARTMENT OF WATER RESOURCES  
 APPROVED DATE

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 CHECKED BY  
 IN CHARGE

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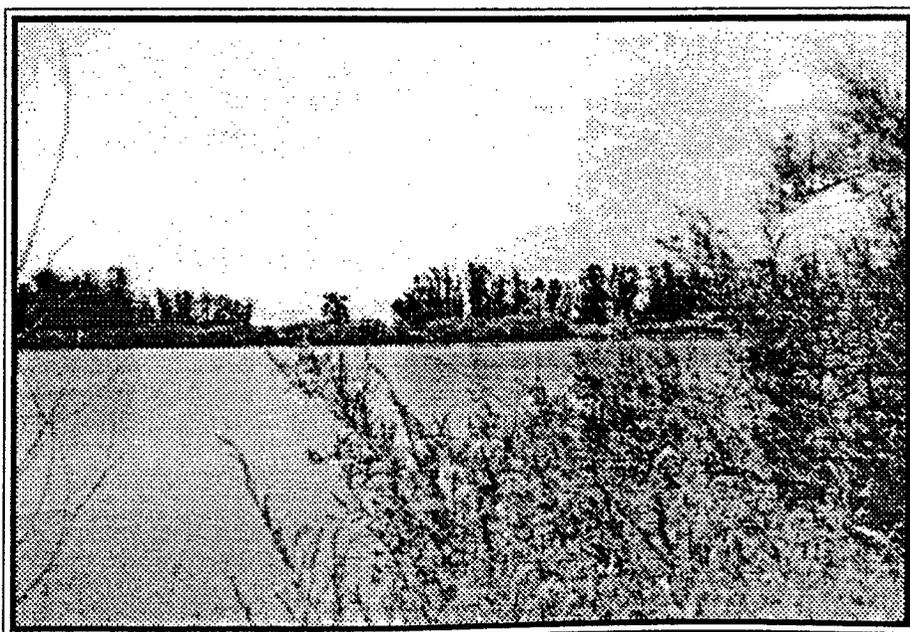
OLD RIVER



## WIDDOWS ISLAND

### EXISTING CONDITIONS

This island on the west side of Old River north of Coney Island is permanently flooded due to levee breaks. Eucalyptus Island to the south is also flooded and is ringed with 100' tall mature eucalyptus trees that support an extensive heron and egret rookery on the north-west side of the island. The central portion of the island is heavily vegetated marsh and ponds, creating wildlife habitat not frequently seen in most of the Delta. Widdows Island is the larger of the two islands, with the central flooded portion accessible by fishing boats from Old River through several levee breaks on the east side. The west side of the flooded central area is vegetated and seems to have shallower depths. There is a backwater slough between Widdows and Eucalyptus islands adjacent to the bird rookery. South of these islands is Kings Island, occupied by recreation homes.



## WIDDOWS ISLAND

### Recreation Concept

The preservation of the Widdows Island/Eucalyptus Island ecosystem would contribute to the goal of preserving "wild and scenic" areas for passive recreation in the South Delta region. This is one of very few naturalized areas in the South Delta and it provides the opportunity to separate low intensity uses such as fishing and nature walks from higher intensity use areas. Public education and interpretation opportunities are here as well, along the perimeter nature trail and the boardwalk and trail overlook areas.

### Recreation Plan Features

#### LOW IMPACT PLAN

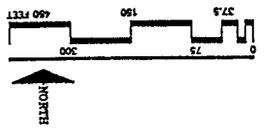
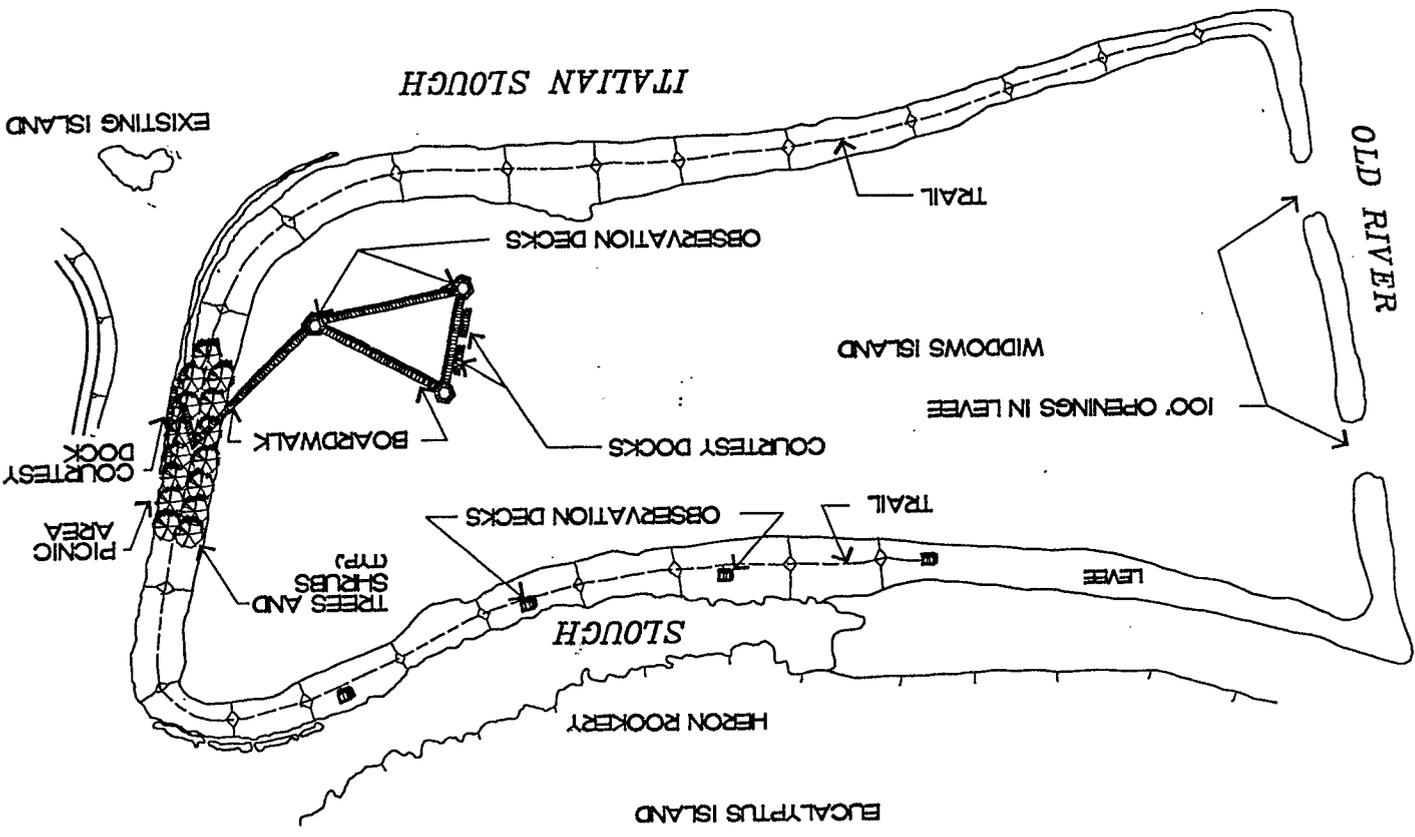
- 1 courtesy dock for 3-4 boats
- 3 picnic sites on levee top by boat dock
- 4,600 l.f.. nature trail along perimeter of island
- Handicap access ramp up levee from boat dock and down levee to boardwalk
- Boardwalk in shallow wetland area of island with covered decks. Benches and interpretive signs for viewing, resting and picnicking on decks
- 3-4 observation decks with interpretive signs off trail to allow birdwatching of the heron rookery on Eucalyptus Island
- Fill levee breaks on east side of island to prevent boaters from coming into central flooded area
- Allow wetland at west end of flooded island to enlarge
- If the Clifton Court Forebay North Campground is developed, Widdows Island users will have access to restrooms/courtesy dock there

#### MODERATE IMPACT PLAN

- 3 courtesy docks for 4-5 boats each
- 10 picnic sites on levee top by boat dock
- 4600 l.f. nature trail along perimeter of island
- Handicap access ramp on levee
- Boardwalk in shallow wetland area of island with covered decks. Benches and interpretive signs for viewing, resting and picnicking on decks
- 3-4 observation decks with interpretive signs off trail to allow birdwatching of heron rookery on Eucalyptus Island
- Two 100'-wide openings in east levee to allow boat access to flooded island. Sign for quiet uses only (fishing, etc.)
- 2 courtesy docks on boardwalk
- Allow wetland at west end of island to enlarge
- If the Clifton Court Forebay North Campground is developed, Widdows Island users will have access to restrooms/courtesy dock there



NOTE: THESE PLANS ARE DIAGRAMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.



WIDDOWS ISLAND  
MODERATE IMPACT

ALLOW WETLAND TO ENLARGE  
USE COURTESY DOCK RESTROOM AT CLIFTON COURT FOREBAY'S  
NORTH CAMPROUND

1 COURTESY DOCK ON SLOUGH  
2 COURTESY DOCKS ON BOARDWALK  
10 PICNIC SITES  
NATURE TRAIL WITH 4 OBSERVATION DECKS  
HANDICAP-ACCESS BOARD WALK IN WETLAND  
COVERED OBSERVATION DECKS WITH BENCHES AND INTERPRETIVE SIGNS  
2-100' WIDE OPENINGS ON EAST LEVEE. SIGN FOR QUIET USES (FISHING, ETC.)

PROPOSED FACILITIES

MAP 13

MAP 13  
SOUTH DELTA RECREATION CONCEPTS  
WIDDOWS ISLAND  
MODERATE IMPACT

APPROVED  
DEPARTMENT OF WATER RESOURCES

REVISIONS  
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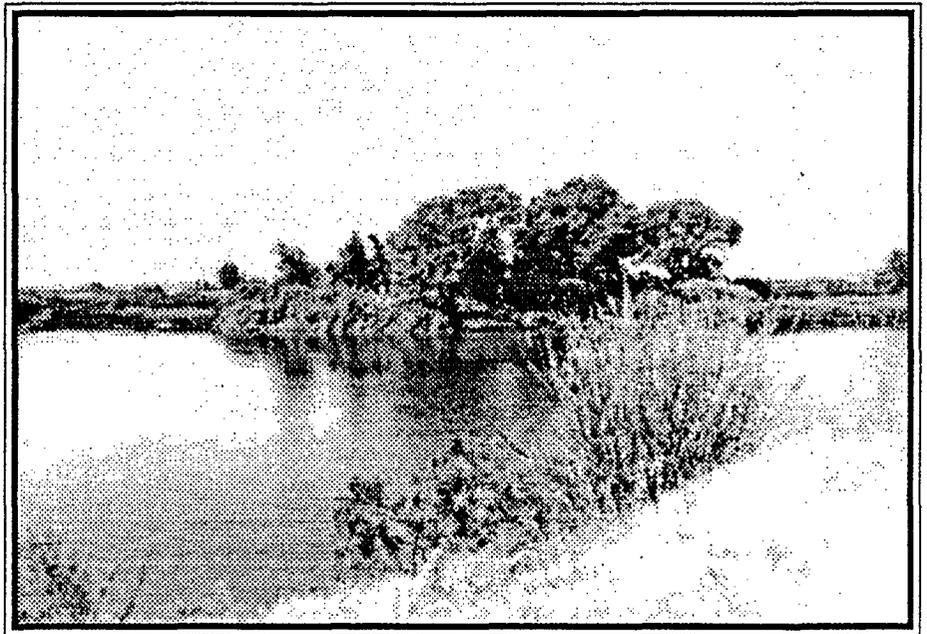
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## GRANT LINE CANAL BARRIER SITE

### EXISTING CONDITIONS

The Grant Line and Fabian and Bell Canals are dredged cross-channels with an intermittent island separating the two canals. DWR's weir structure will most likely be constructed at the western confluence of the two canals. This site is at a bend in the channel approximately 1000' from Old River at the Delta-Mendota Canal and is adjacent to a large, privately-owned instream island with few structures. A major transmission line crosses the canal at this location, with a tower on the private island and another on the top of the north levee. On either side of the canal, on the land side of the levees at this location, is privately-owned agricultural land. The mid-channel island, actually an original levee that has eroded, is covered with vegetation and is considered a wetland. There may be sensitive plant species (Hibiscus Californicus) in the vicinity of the weir location.



## GRANT LINE CANAL BARRIER SITE

### Recreation Concept

The proposed barrier sites in the South Delta can provide public access to previously-unused destination recreation sites. These barrier site recreation concepts contribute to the goal of increasing public access to day use areas, and include facilities for fishing and picnicking. Both automobile and boat-in access would be provided.

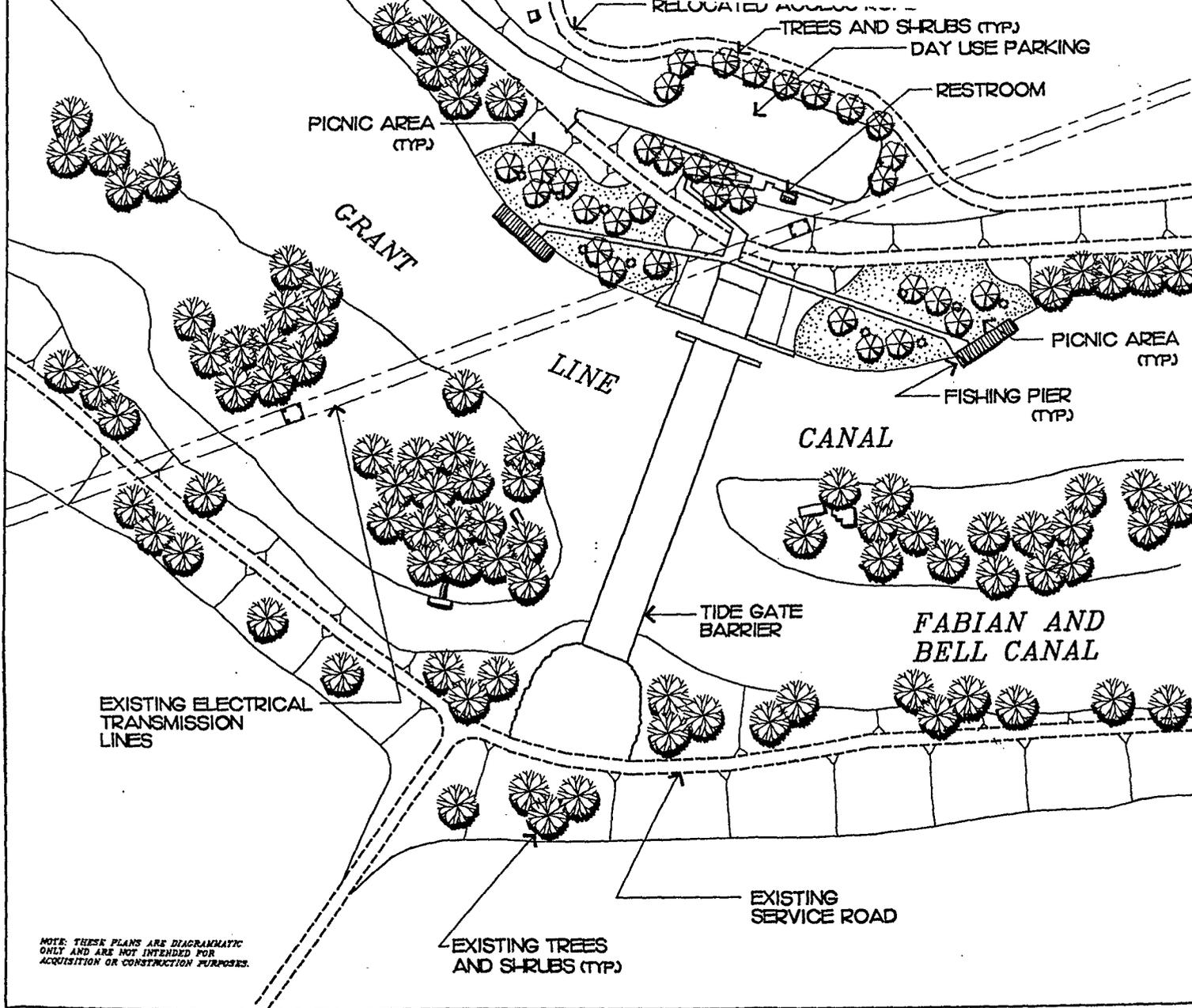
### Recreation Plan Features

#### LOW IMPACT PLAN (NORTH BANK)

- 2 fishing piers in canal
- 20 parking spaces in an asphalt parking lot
- 10 picnic tables
- DPR "100-series" restroom building (see Appendix for park restroom standards)
- Planting and irrigation of native trees and shrubs to shade picnic tables and provide wind protection

#### MODERATE IMPACT PLAN (SOUTH BANK)

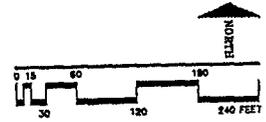
- 2 fishing piers in canal
- 17 parking spaces in an asphalt parking lot
- 8 picnic tables
- DPR "100-series" restroom building (see Appendix for park restroom standards)
- Planting and irrigation of native trees and shrubs to shade picnic tables and provide wind protection



- PROPOSED FACILITIES**
- 2 FISHING PIERS
  - 20 DAY USE PARKING SPACES
  - 10 PICNIC SITES
  - 1 RESTROOM

NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

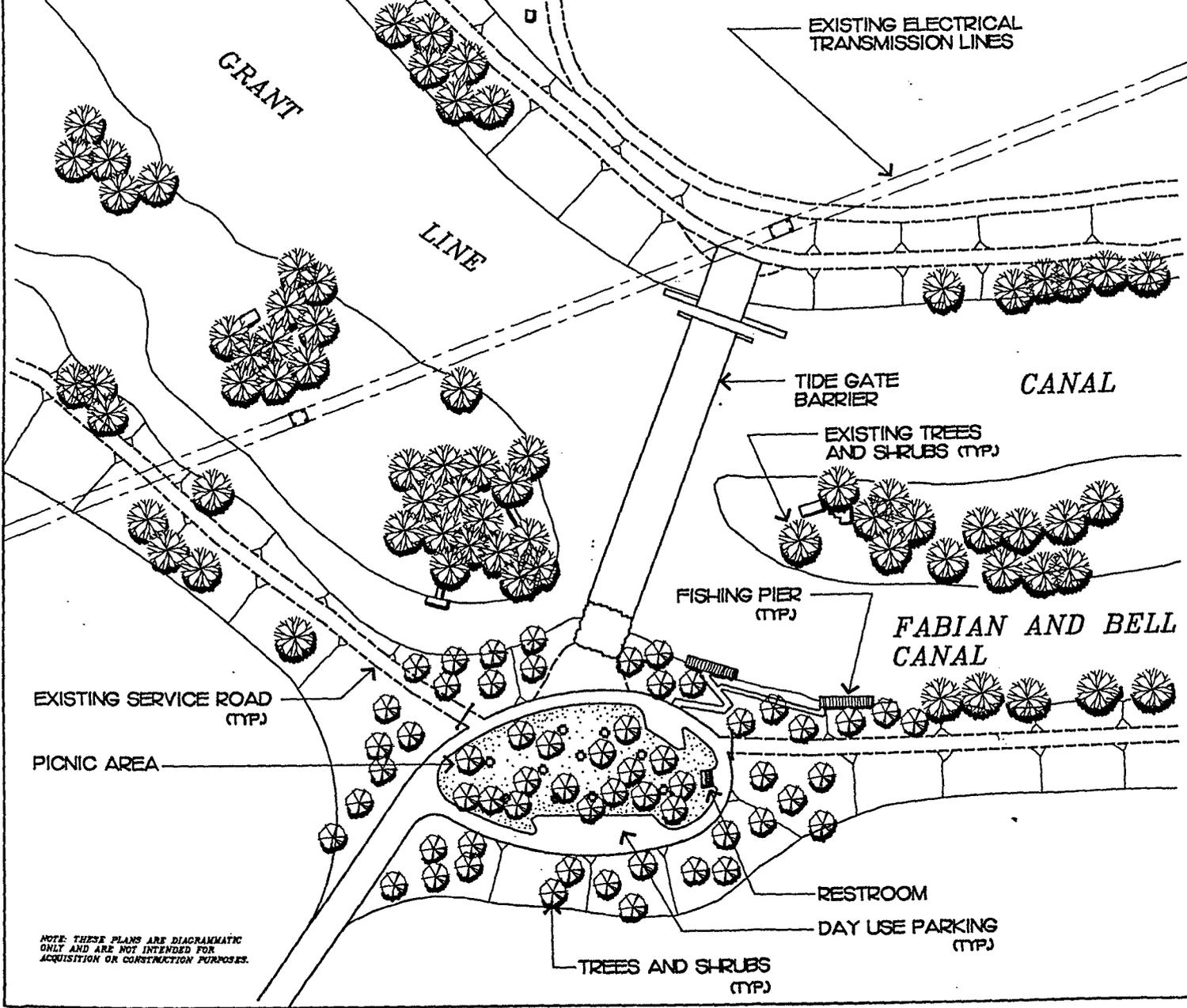
**GRANT LINE CANAL BARRIER SITE**  
LOW IMPACT



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SOUTH DELTA RECREATION CONCEPTS GRANT LINE CANAL BARRIER SITE LOW IMPACT	
DRAWING NO.	
MAP	14

C-101987

C-101987

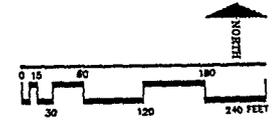


NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

**PROPOSED FACILITIES**

- 2 FISHING PIERS
- 17 DAY USE PARKING SPACES
- 10 PICNIC SITES
- 1 RESTROOM

**GRANT LINE CANAL BARRIER SITE**  
MODERATE IMPACT



DATE		DATE
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SOUTH DELTA RECREATION CONCEPTS <b>GRANT LINE CANAL BARRIER SITE</b> MODERATE IMPACT		
DRAWING NO.		
<b>MAP</b> <b>15</b>		

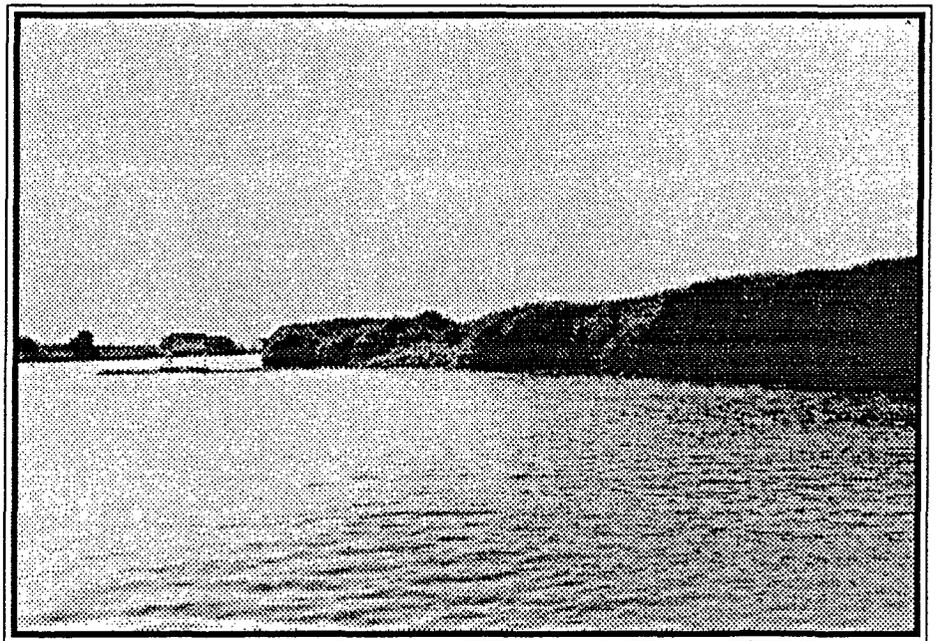
C-101988

C-101988

## OLD RIVER AT KELSO ROAD BARRIER SITE

### EXISTING CONDITIONS

This site is one of the locations for a permanent weir structure across the channel. It is east of Hammer Island, near the Delta-Mendota Canal. There is no existing flat area along either side of the channel for recreation facility development. The levees have steep sides. There may be a sensitive plant (Hibiscus Californicus) in the vicinity of the weir location. Further site specific vegetation surveys will be required to verify the location of this sensitive plant. This location is accessible by Kelso Road on the south to the levee road. There are privately-owned agricultural fields on either side of the channel on the land side of the levees. Kelso Road provides access to several private residences West of the proposed wier location.



## OLD RIVER AT KELSO ROAD BARRIER SITE

### Recreation Concept

The proposed barrier sites in the South Delta can provide public access to previously-unused destination recreation sites. These barrier site recreation concepts contribute to the goal of increasing public access to day use areas, and include facilities for fishing and picnicking. Both automobile and boat-in access would be provided.

### Recreation Plan Features

#### LOW IMPACT PLAN

- 1 fishing pier with courtesy dock
- 9 parking spaces in an asphalt parking lot
- 5 picnic tables
- DPR "50-series" restroom building (see Appendix for park restroom standards)
- Planting and irrigation of native trees and shrubs to shade picnic tables and provide wind protection

#### MODERATE IMPACT PLAN

- 2 fishing piers with courtesy docks
- 22 parking spaces in an asphalt parking lot
- 15 picnic tables
- DPR "100-series" restroom building (see Appendix for park restroom standards)
- Planting and irrigation of native trees and shrubs to shade picnic tables and provide wind protection

**PROPOSED FACILITIES**

1 FISHING PIER W/COURTESY DOCK

9 DAY USE PARKING SPACES

5 PICNIC SITES

1 RESTROOM

EXISTING SERVICE ROAD

FISHING PIER W/ COURTESY DOCK

R I V E R

TIDE GATE BARRIER

O L D

EXISTING RESIDENTIAL ACCESS ROAD

EXISTING TREES AND SHRUBS (MP)

PICNIC AREA (MP)

RESTROOM

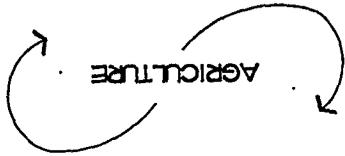
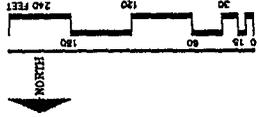
TREES AND SHRUBS (MP)

EXISTING SERVICE ROAD (MP)

DAY USE PARKING AREA (MP)

(MP)

OLD RIVER AT KELSO ROAD BARRIER SITE LOW IMPACT

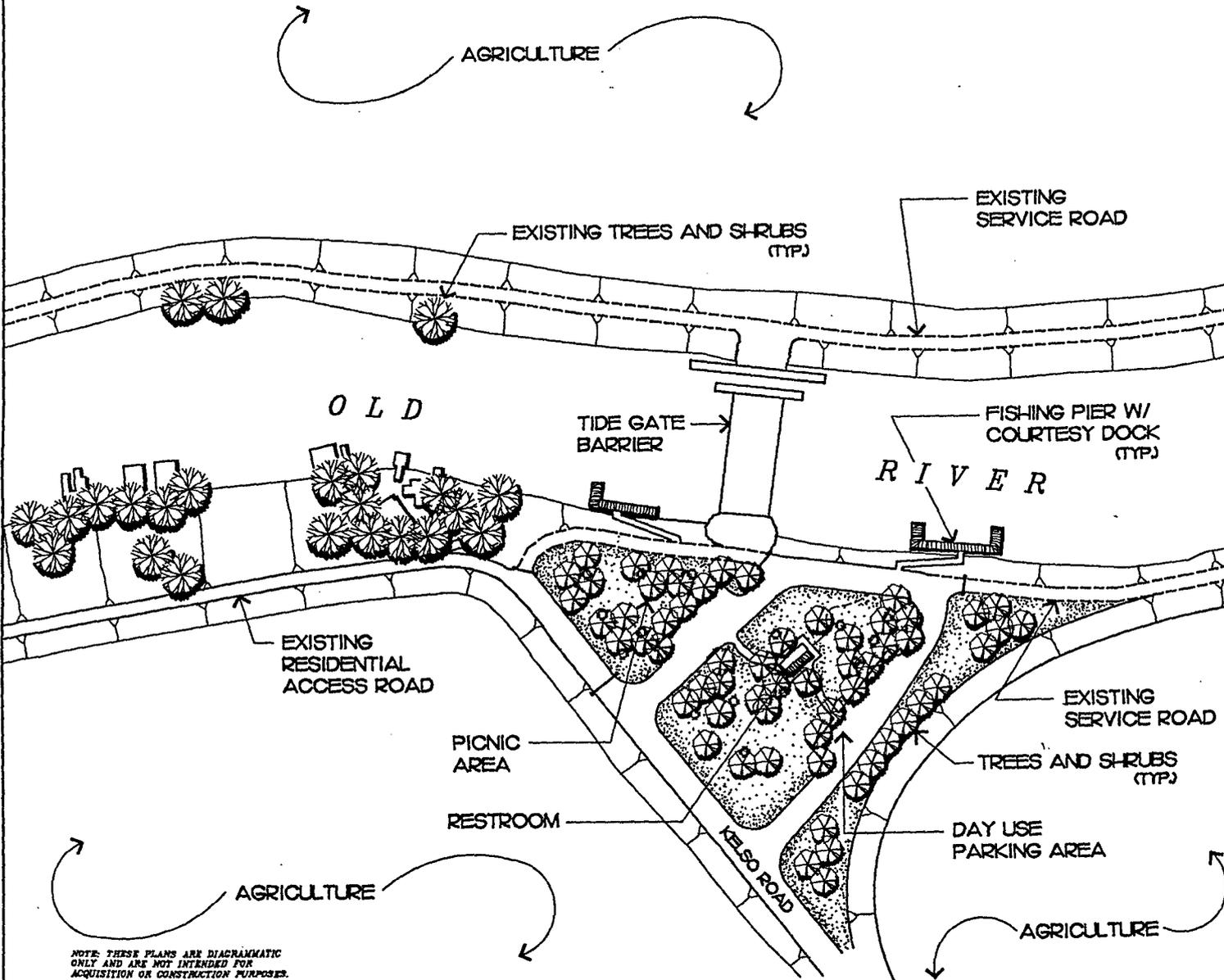


NOTE: THESE PLANS ARE DIAGNOSTIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

MAP 16  
 SOUTH DELTA RECREATION CONCEPT'S  
 OLD RIVER & KELSO RD BARRIER SITE  
 DEPARTMENT OF WATER RESOURCES  
 APPROVED DATE

C-101991

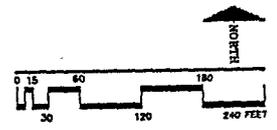
PRINTED IN U.S.A.



NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

- PROPOSED FACILITIES**
- 2 FISHING PIERS W/COURTESY DOCKS
  - 22 PARKING SPACES
  - 15 PICNIC SPACES
  - 1 RESTROOM

**OLD RIVER AT KELSO ROAD BARRIER SITE**  
MODERATE IMPACT



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SOUTH DELTA RECREATION CONCEPTS OLD RIVER @ KELSO RD BARRIER SITE MODERATE IMPACT	
DRAWING NO.	
MAP 17	

C-101992

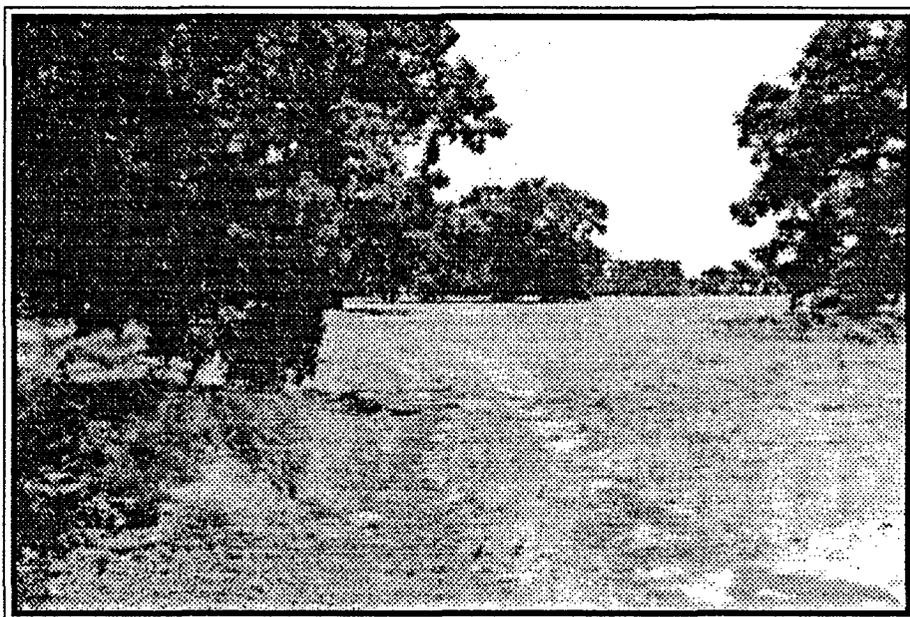
C-101992

## OLD RIVER CAMPGROUND

### EXISTING CONDITIONS

Old River meanders approximately 11 miles through the southern and western portions of the South Delta Study Area. Although the riverbanks have been cleared of vegetation in places, there is a 3 mile stretch of river which is bordered by fragments of the Great Valley Oak Riparian Forest. These oak woodlands are located at the southeast end of Fabian Tract, just to the west of Paradise Cut. Few examples of this vegetation community remain in the State of California. Historically, an estimated 921,000 acres of riparian forest existed in the Great Valley and only 2.5 percent, or about 1325 acres, of mature riparian forest remains today.

A 980 acre portion of this Great Valley Oak Riparian Forest was proposed for acquisition as a State Recreation Area in the 1976 Delta Master Recreation Plan by the Resources Agency.



## OLD RIVER CAMPGROUND

### Recreation Concept

Portions of the southern stretches of Old River are unique in the Delta region because they retain remnants of original Valley Oak forest and grasslands. The South Delta area is lacking in publicly-owned camping facilities; these plans present conceptual ideas for camping facilities along Old River in these oak-forested areas.

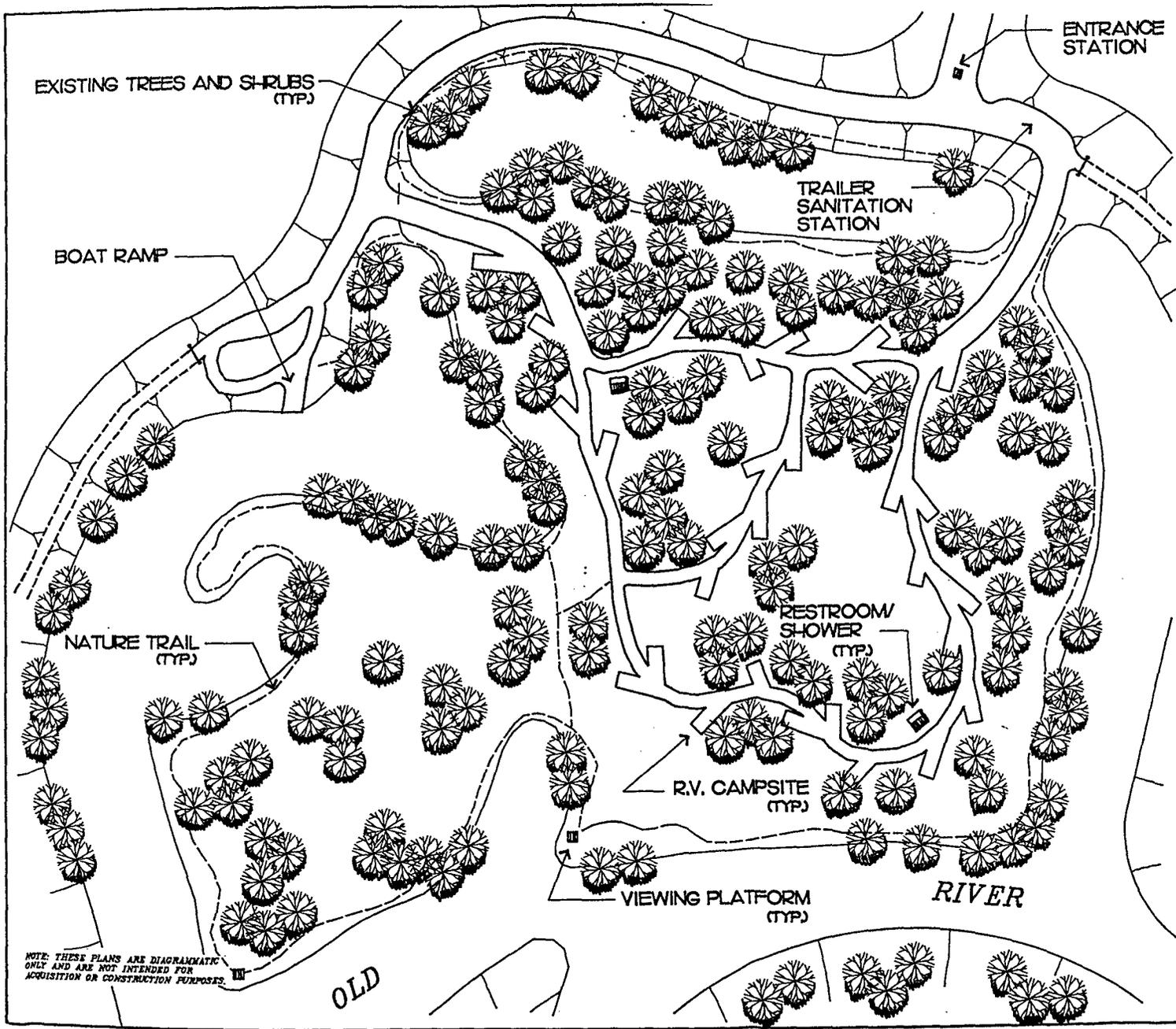
### Recreation Plan Features

#### LOW IMPACT PLAN

- 1 boat ramp
- 29 RV campsites with 12' wide x 45' long paved parking spurs for parallel RV and trailer parking. Wheelstops at ends of spurs. One picnic table, fire ring/BBQ stove per campsite. RV utility hookups.
- 2 DPR "100-series" restroom buildings (see Appendix for park restroom standards)
- 5,800 l.f. nature trail with 2 viewing platforms by the river
- 1 entrance station
- 1 trailer sanitation station

#### MODERATE IMPACT PLAN

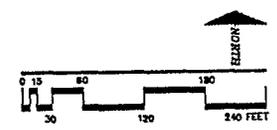
- 1 boat ramp with courtesy dock
- 11 day-use parking spaces
- 8 picnic tables
- 29 RV campsites with 12' wide x 45' long paved parking spurs for parallel RV and trailer parking. Wheelstops at ends of spurs. One picnic table, fire ring/BBQ stove per campsite. RV utility hookups.
- 14 tent campsites with paved parking spurs
- 3 DPR "100-series" restroom buildings (see Appendix for park restroom standards)
- 5,800 l.f. nature trail with 2 viewing platforms by the river
- Children's playground
- 1 entrance station
- Convenience market
- 1 trailer sanitation station



**PROPOSED FACILITIES**

- 1 BOAT RAMP
- 29 R.V. CAMPSITES
- 2 RESTROOM/SHOWER BUILDINGS
- 2 VIEWING PLATFORMS
- 1 ENTRANCE STATION
- 1 TRAILER SANITATION STATION
- NATURE TRAIL

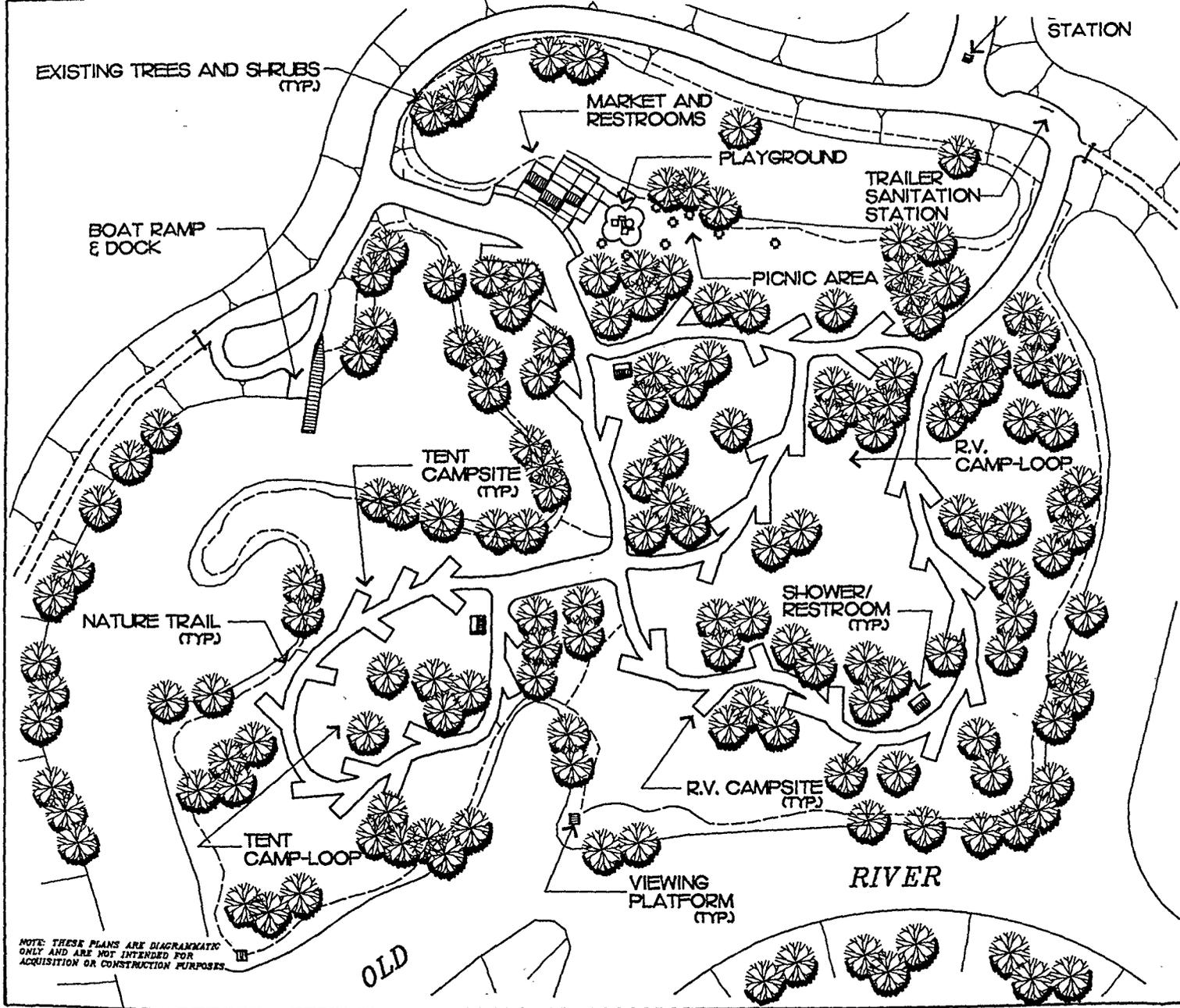
**OLD RIVER CAMPGROUND**  
LOW IMPACT



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SOUTH DELTA RECREATION CONCEPTS <b>OLD RIVER CAMPGROUND</b> LOW IMPACT	
MAP 18	

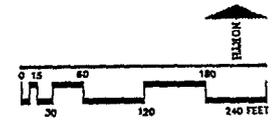
C-101995

C-101995



- PROPOSED FACILITIES**
- I BOAT RAMP W/ DOCK
  - II DAY USE PARKING SPACES
  - 8 PICNIC SITES
  - 29 R.V. CAMPSITES
  - 14 TENT CAMPSITES
  - 3 RESTROOM/ SHOWER BUILDINGS
  - NATURE TRAIL
  - VIEWING PLATFORMS
  - PLAYGROUND
  - ENTRANCE STATION
  - I TRAILER SANITATION STATION
  - I CONVIENCE MARKET W/ RESTROOMS

**OLD RIVER CAMPGROUND**  
MODERATE IMPACT



NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES

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SOUTH DELTA RECREATION CONCEPTS <b>OLD RIVER CAMPGROUND</b> MODERATE IMPACT	
SCALE	MAP
	19

C-101996

## OLD RIVER BOAT CAMP

### EXISTING CONDITIONS

There is a three mile stretch of Old River, immediately west of Paradise Cut, which offer numerous opportunities for boat-in camping within the Great Valley Oak Riparian Forest. This plant community provides the visitor with one of the few remaining examples of the Delta's native wild and scenic character.

Many large Valley Oak Trees exist in this area, as well as an abundance of other natives, such as cottonwoods, willows, tules and other riparian vegetation.



## OLD RIVER BOAT CAMP

### Recreation Concept

Portions of the southern stretches of Old River are unique in the Delta region because they retain remnants of original Valley Oak forest and grasslands. The South Delta area is lacking in publicly-owned camping facilities; these plans present conceptual ideas for boat-in camping facilities along Old River in these oak-forested areas.

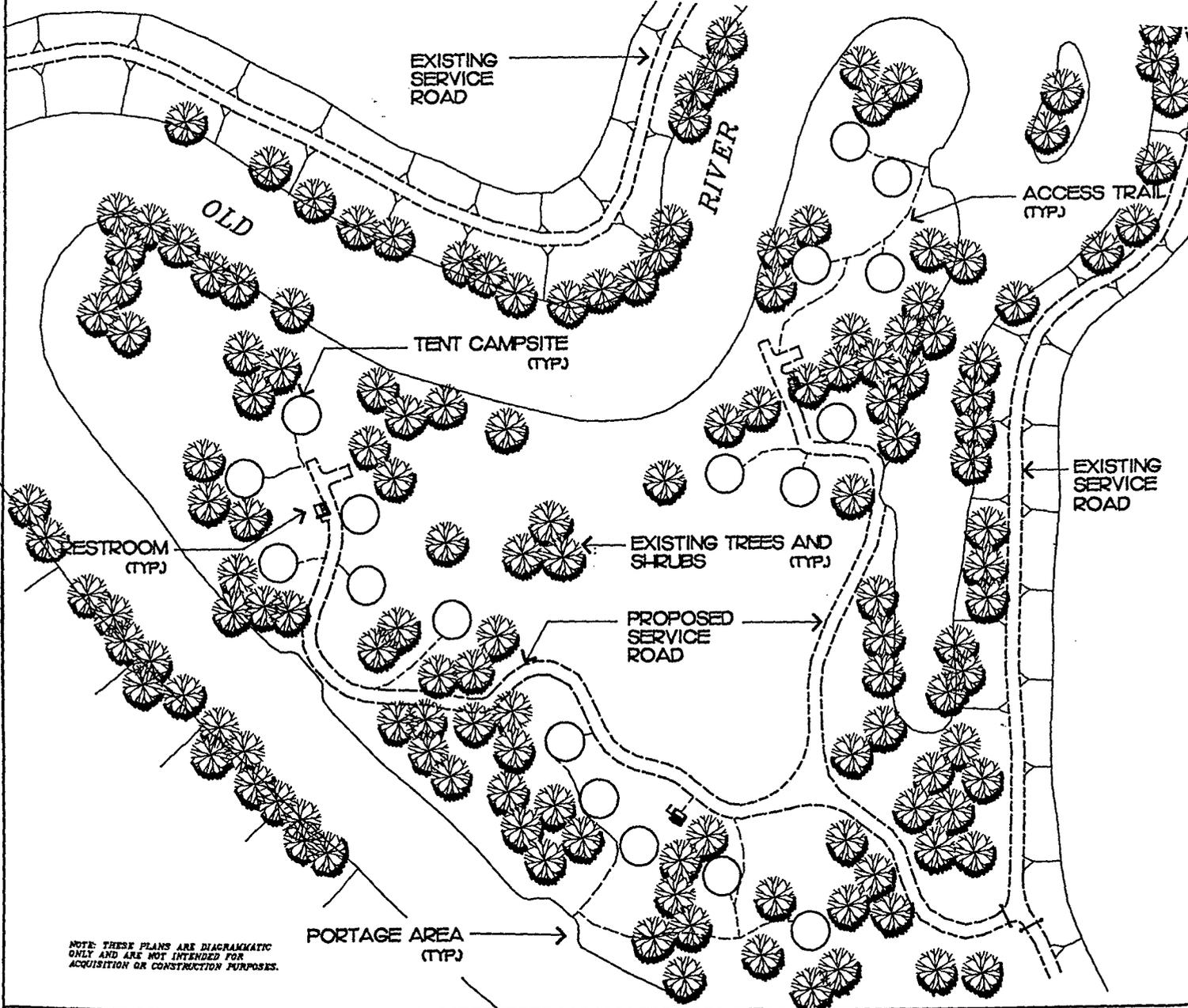
### Recreation Plan Features

#### LOW IMPACT PLAN

- 4 small craft portage areas
- 18 tent campsites
- 3 DPR "50-series" restroom buildings (see Appendix for park restroom standards)
- Trail system linking campsites and portage areas
- Gravel service roads

#### MODERATE IMPACT PLAN

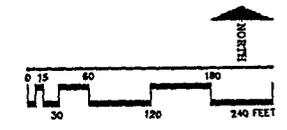
- 6 small craft portage areas
- 29 tent campsites
- 3 DPR "100-series" restroom buildings (see Appendix for park restroom standards)
- Trail system linking campsites and portage areas
- Gravel service roads



- PROPOSED FACILITIES**
- 4 SMALL CRAFT PORTAGE AREAS
  - 18 TENT CAMPSITES
  - 3 RESTROOMS

NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

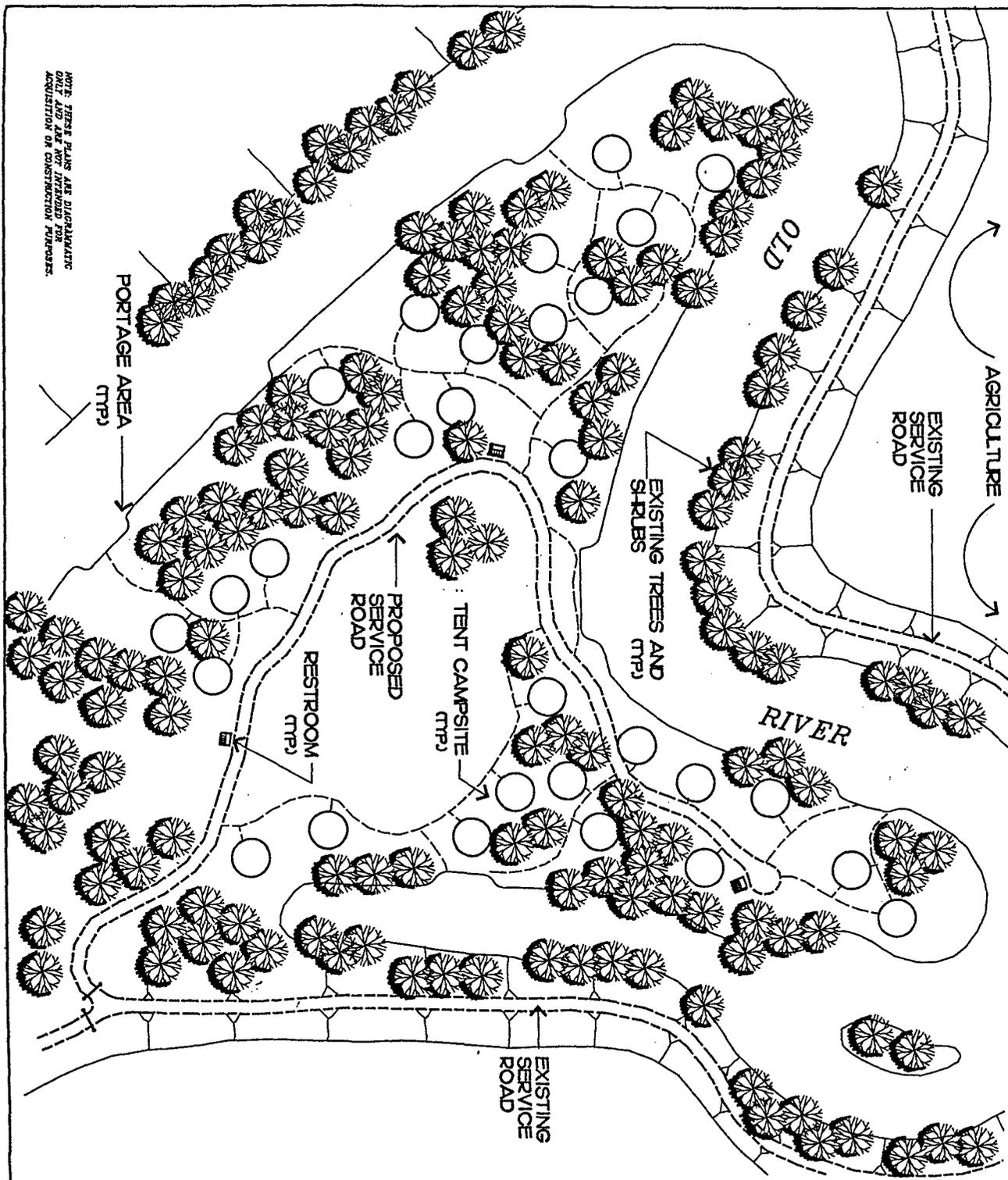
**OLD RIVER BOAT CAMP**  
LOW IMPACT



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MAP	20

**C-101999**



NOTE: THESE PLANS ARE DISCUSSANTIC  
 ONLY AND ARE NOT TO BE USED FOR  
 ACQUISITION OF CONSTRUCTION PERMITS.

- PROPOSED FACILITIES**
- 29 TENT CAMPSITES
- 3 RESTROOM BUILDINGS
- 6 SMALL CRAFT PORTAGE AREAS
- SERVICE ROAD

**OLD RIVER BOAT CAMP**  
 MODERATE IMPACT

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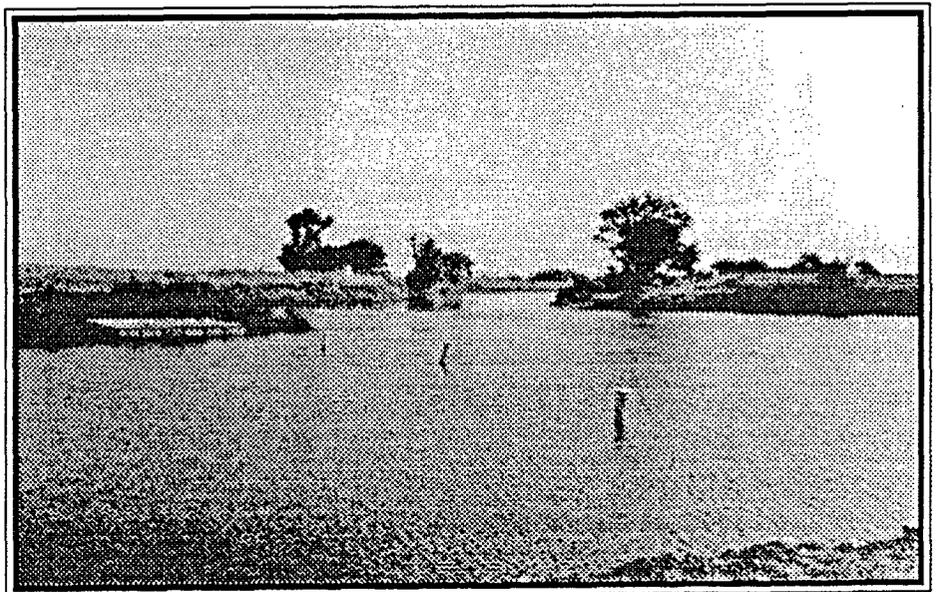
21	MAP	SOUTH DELTA RECREATION CONCEPTS		RESOURCES AGENCY OF CALIFORNIA		REVISIONS		DATE	DESIG
		OLD RIVER BOAT CAMP		DEPARTMENT OF WATER RESOURCES					S. HUSTIL
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## OLD RIVER AT HEAD BARRIER SITE

### EXISTING CONDITIONS

This site has recreation facility development potential due to a large flat "bench" of land above the summer water level and below the levee top. The flat area is approximately 50'-75' wide and up to 1000' long. In times of high water (winter flows) the "bench" is flooded with fast-moving water. The levee road is in good condition, and there are several dirt roads from the levee road down to the flat area. According to local people, the fishing is generally good in this location, and water-skiers also like this area due to the width of Old River (they frequently launch at Mossdale Landing to the east). Access to the area is by Stewart and San Joaquin Roads off I-5.



## OLD RIVER AT HEAD BARRIER SITE

### Recreation Concept

The proposed barrier sites in the South Delta can provide public access to previously-unused destination recreation sites. These barrier site recreation concepts contribute to the goal of increasing public access to day use areas, and include facilities for fishing and picnicking. Both automobile and boat-in access would be provided.

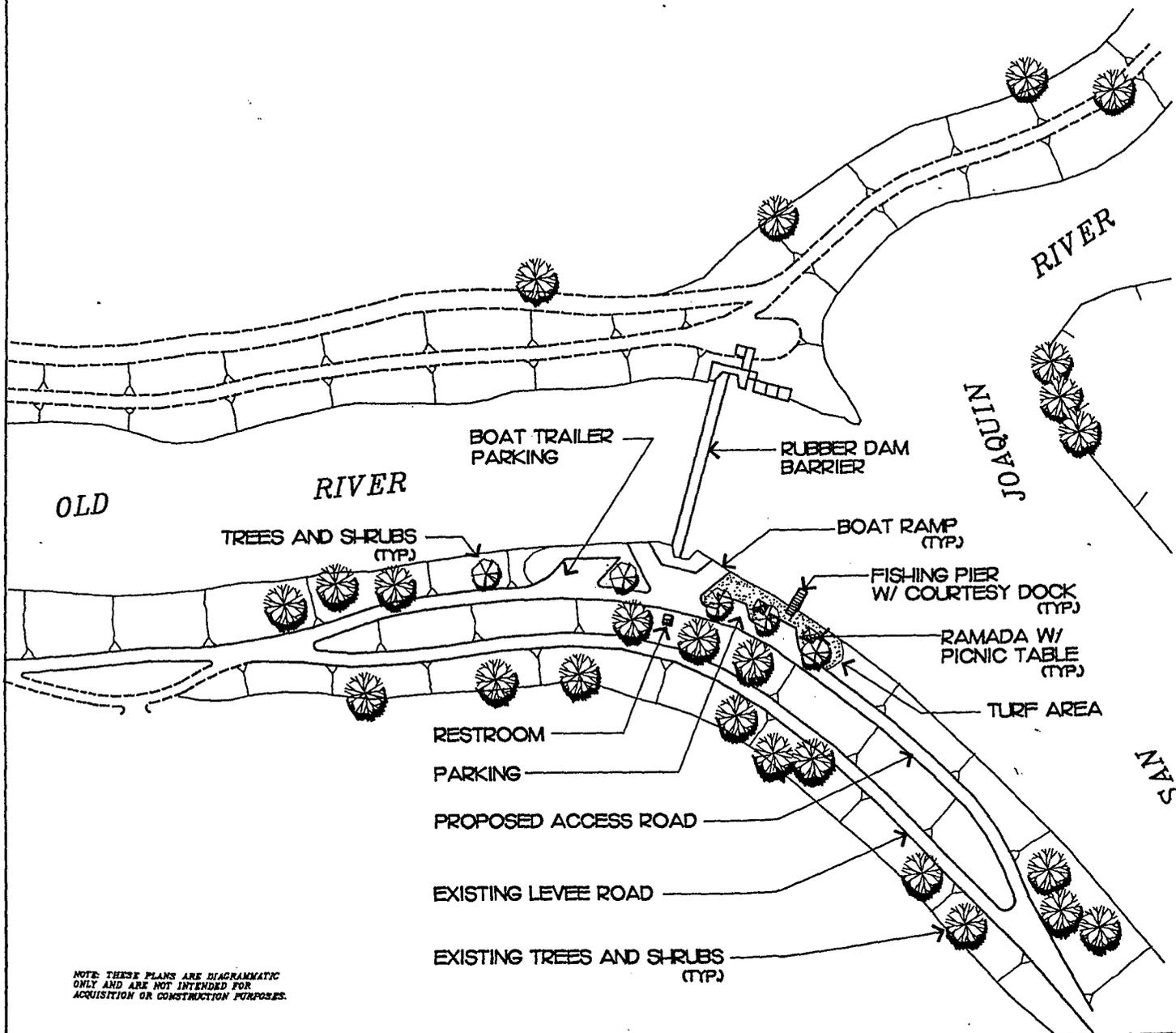
### Recreation Plan Features

#### LOW IMPACT PLAN

- 1 fishing pier with courtesy dock with room for 3-4 boats
- 2 boat ramps
- 4 boat trailer parking spaces
- 6 day use parking spaces
- 2 picnic tables with shade ramadas
- 1 restroom building with vault

#### MODERATE IMPACT PLAN

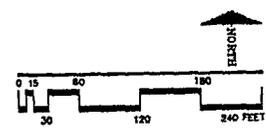
- 3 fishing piers with courtesy docks with room for 3-4 boats each
- 2 boat ramps
- 8 boat trailer parking spaces
- 12 day use parking spaces
- 4 picnic tables with shade ramadas
- 1 restroom building with vault



**PROPOSED FACILITIES**

- 1 FISHING PIER W/COUTESY DOCK
- 2 BOAT RAMPS
- 4 BOAT TRAILER PARKING SPACES
- 6 PARKING SPACES
- 2 PICNIC TABLES W/ SHADE RAMADAS
- 1 RESTROOM
- TURF AREA

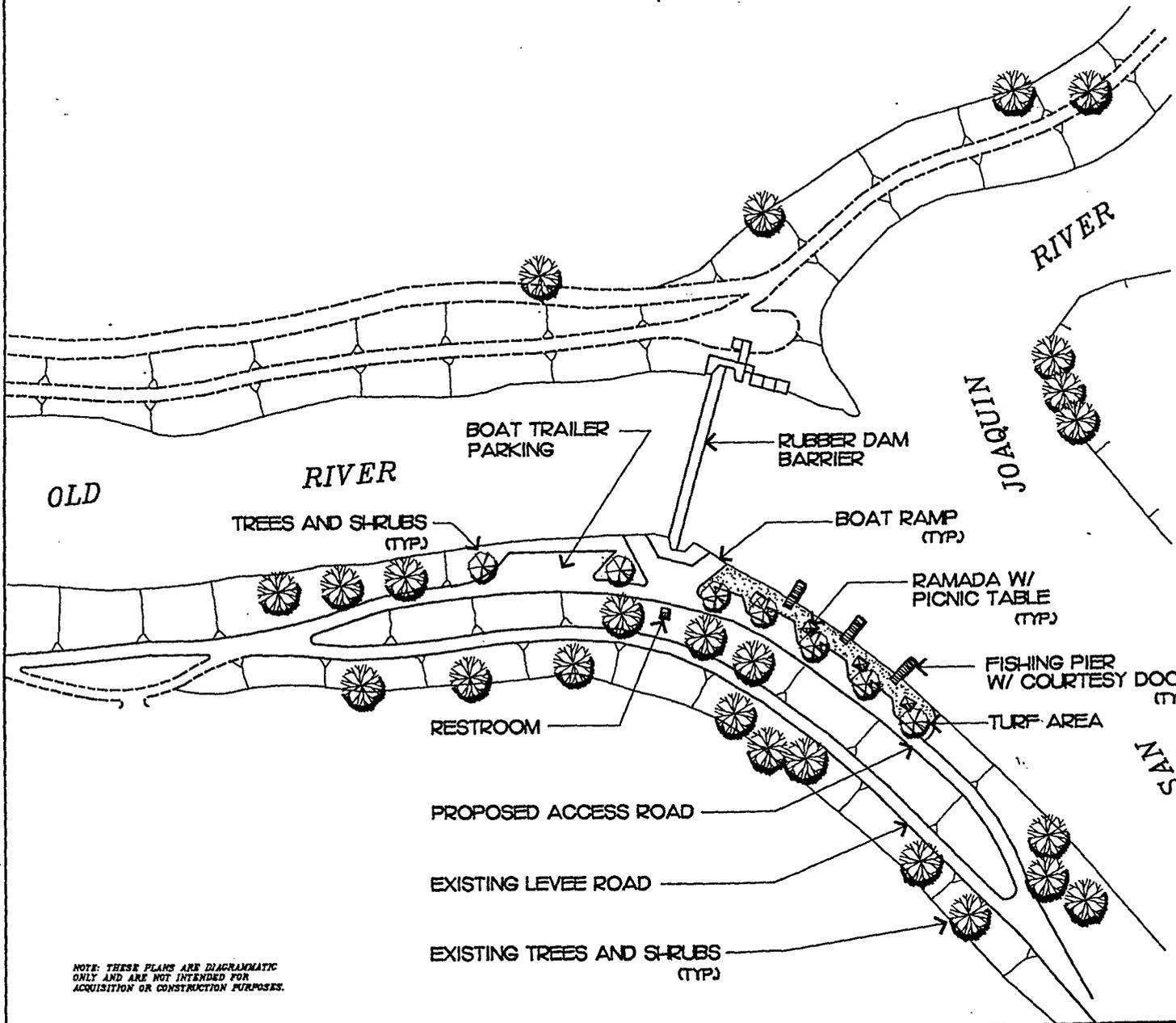
**OLD RIVER AT HEAD BARRIER SITE**  
LOW IMPACT



NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

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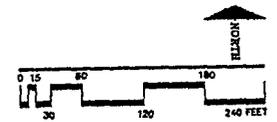
C-102003



**PROPOSED FACILITIES**

- 3 FISHING PIERS W/COURTESY DOCKS
- 2 BOAT RAMPS
- 8 BOAT TRAILER PARKING SPACES
- 12 PARKING SPACES
- 4 PICNIC TABLES W/ SHADE RAMADAS
- 1 RESTROOM
- TURF AREA

**OLD RIVER AT HEAD BARRIER SITE**  
MODERATE IMPACT



NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

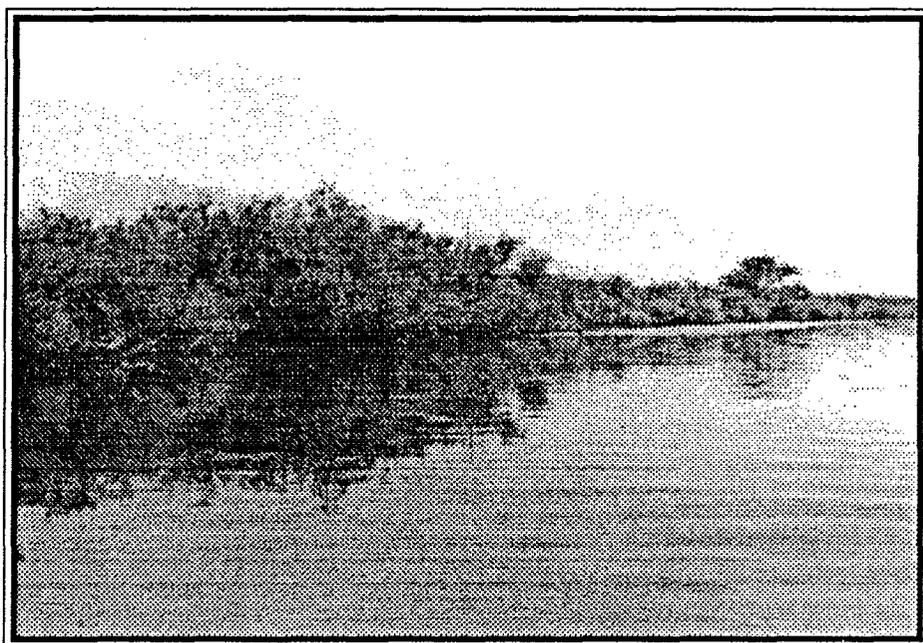
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SOUTH DELTA RECREATION CONCEPTS OLD RIVER AT HEAD BARRIER SITE MODERATE IMPACT	
RESOURCE AGENCY OF CALIFORNIA DEPARTMENT OF WATER RESOURCES	
DRAWING NO.	MAP 23

C-102004

## MIDDLE RIVER FISHING ACCESS

### EXISTING CONDITIONS

Middle River east of the Tracy Blvd. bridge is a slowly-moving, meandering channel with trees overhanging the waterway and the water thick with aquatic vegetation and occasional snags. Tules and exotic rushes line the banks of the levees, giving the area a "natural" look. Here and there, agricultural land and small farms are visible through irrigation channels opening off the river. One mile south of the Howard Road bridge marks the effective limit of boat travel as the channel becomes clogged with an increasing amount of debris. Just south of the Howard Road bridge is a bank with level areas close to the water and a wide, flat area south of the river levee. A similar site just south of the one just mentioned has an even larger flat area south and west of the river levee. This site's riverbank is thickly vegetated and lacks flat areas. Fishing in these areas is excellent. There may be Valley Elderberry Longhorn Beetle (a threatened species) habitat in this vicinity. Access to both sites is off Wing Levee Road from Howard Road.



## MIDDLE RIVER FISHING ACCESS

### Recreation Concept

Middle River east of the Tracy Blvd. bridge is a prime area for fishing and other quiet recreational uses as larger boats cannot navigate its shallow channels. A day-use fishing facility would allow convenient public access to this prime area and contribute to the goal of separating high and low intensity recreation use areas.

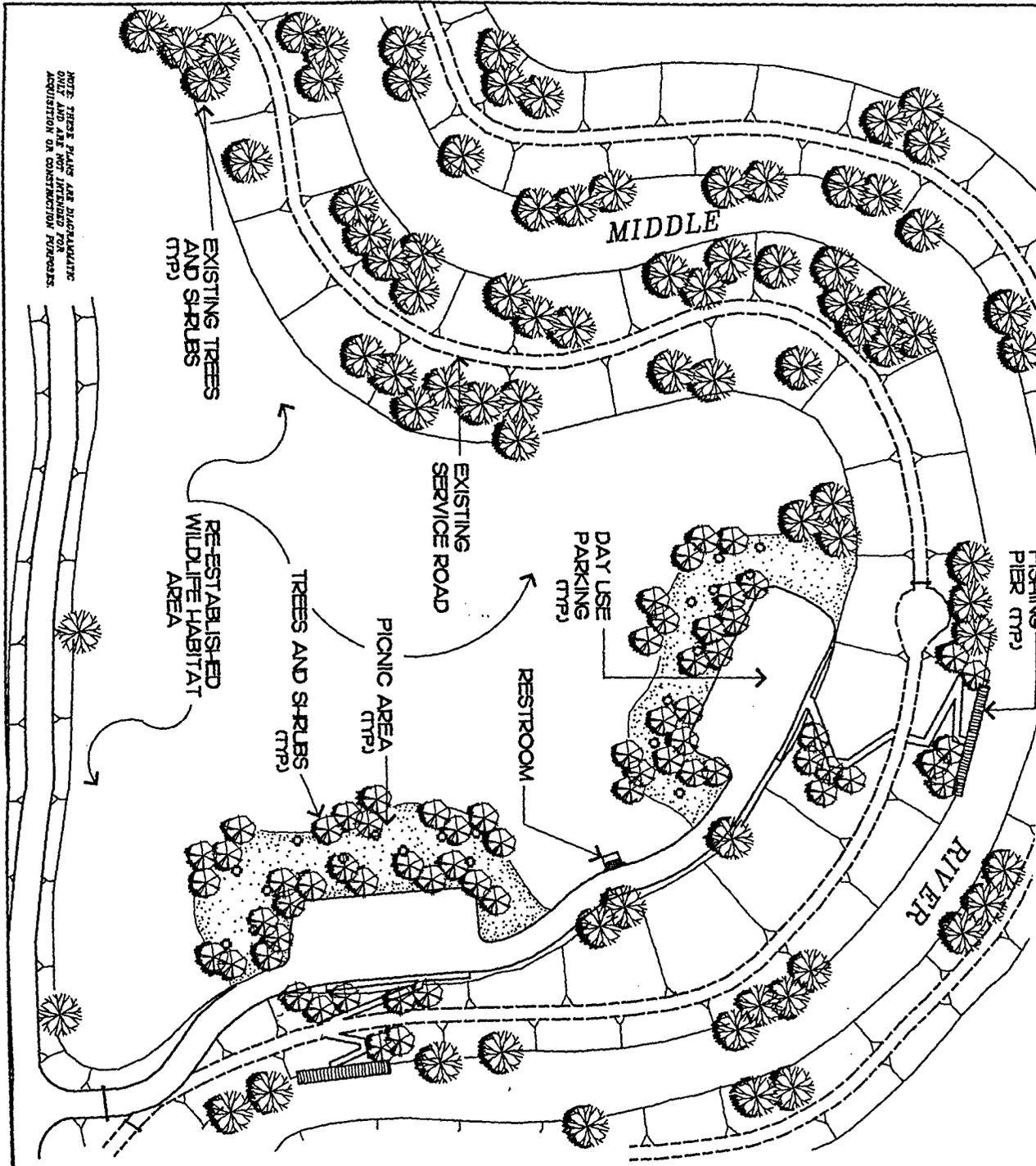
### Recreation Plan Features

#### LOW IMPACT PLAN

- Two 200' long fishing piers in the river
- 30 day use parking spaces
- 20 picnic tables
- 1 "200-series" restroom building (See Appendix for park restroom standards)
- Restore native habitat on the remaining portion of the area. Possibly allow nature trail through this area.

#### MODERATE IMPACT PLAN

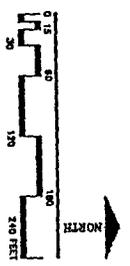
- Two 200' long fishing piers in the river
- 1 boat ramp with dock
- 18 day use parking spaces
- 21 R.V. campsites
- 2 "100-series" restroom buildings (See Appendix for park restroom standards)
- 1 playground for children
- 1 entrance station for fee collection
- 1 trailer sanitation station
- Restore native habitat on the remaining portion of the area. Possibly allow nature trail through this area.



NOTE: THESE PLANS ARE DISCUSSANTIVE ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

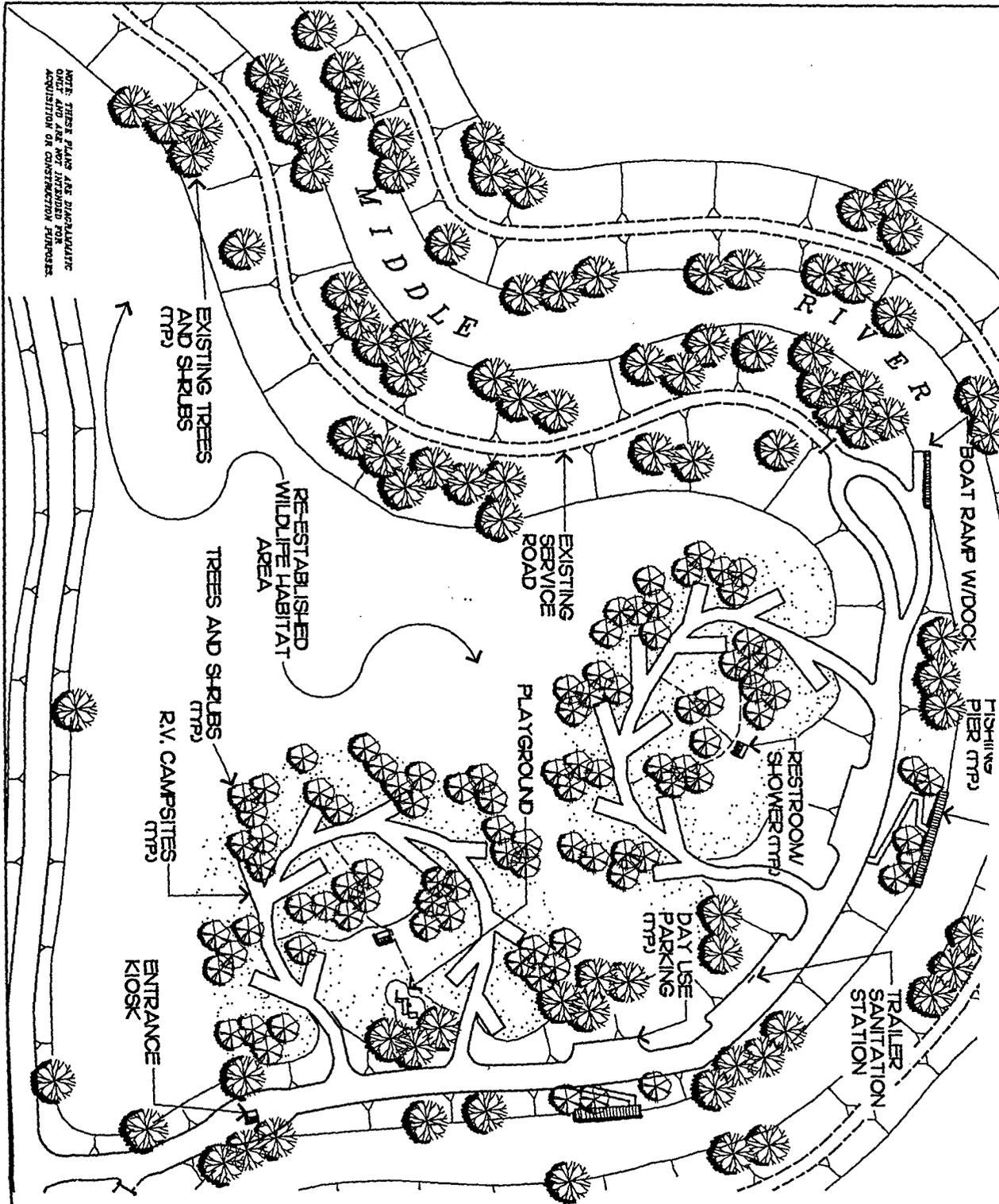
- PROPOSED FACILITIES**
- 2 FISHING PIERS
  - 30 DAY USE PARKING SPACES
  - 20 PICNIC SITES
  - 1 RESTROOM BUILDING

**MIDDLE RIVER FISHING ACCESS**  
LOW IMPACT



DRAWING NO. 24	MAP	SOUTH DELTA RECREATION CONCEPTS		RESOURCES AGENCY OF CALIFORNIA		REVISORS	DATE
		MIDDLE RIVER FISHING ACCESS		DEPARTMENT OF WATER RESOURCES			
		APPROVED			DATE		

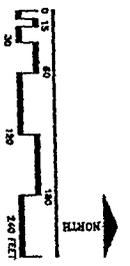
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**FACILITIES**

- 2 FISHING PIERS
- 1 BOAT RAMP W/DOCK
- 18 DAY USE PARKING SPACES
- 21 R.V. CAMPSITES
- 2 RESTROOM/SHOWER BUILDINGS
- 1 PLAYGROUND
- 1 ENTRANCE STATION
- 1 TRAILER SANITATION STATION

**MIDDLE RIVER FISHING ACCESS**  
MODERATE IMPACT



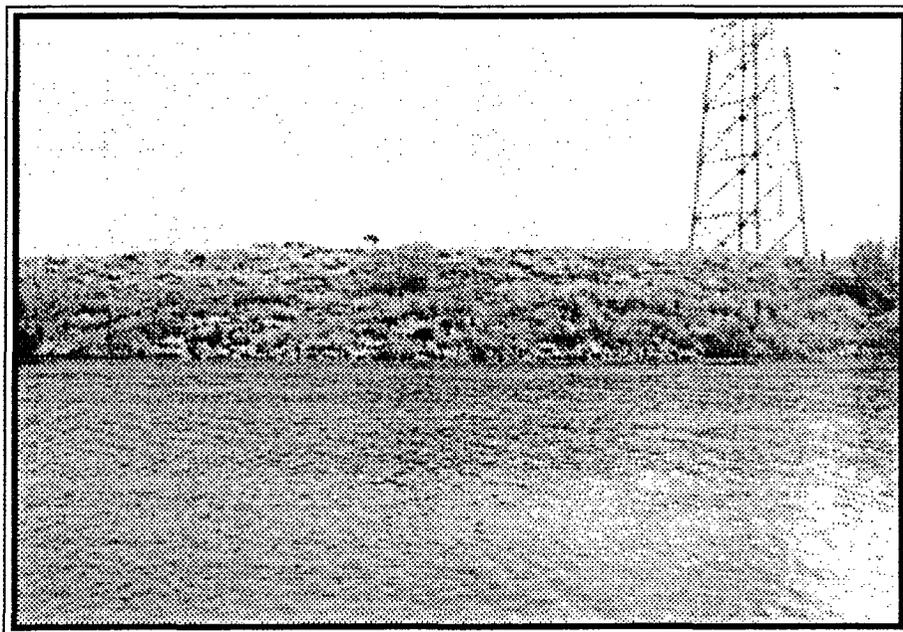
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DRAWING NO. <b>MAP 25</b>	SOUTH DELTA RECREATION CONCEPTS <b>MIDDLE RIVER FISHING ACCESS</b> MODERATE IMPACT		RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF WATER RESOURCES	REVISOR
	APPROVED	DATE		

## TYPICAL FISHING ACCESS

### EXISTING CONDITIONS

After the proposed flooding of Victoria Island, fishing areas along the levee banks in both the north and south areas along Old River would be appropriate. The banks are steep and sparsely vegetated, but the public should be encouraged to fish for larger species, in particular striped bass, to limit the predation of young salmon.



## TYPICAL FISHING ACCESS

### Recreation Concept

One of the most popular recreation activities in the Delta is fishing. There is a general lack of public access to the waterways of the South Delta, and developed fishing areas would most probably be heavily used, both by shore and boat fishing enthusiasts. These facilities would also contribute to achieving the goal of separating low intensity from high intensity recreation use areas.

### Recreation Plan Features

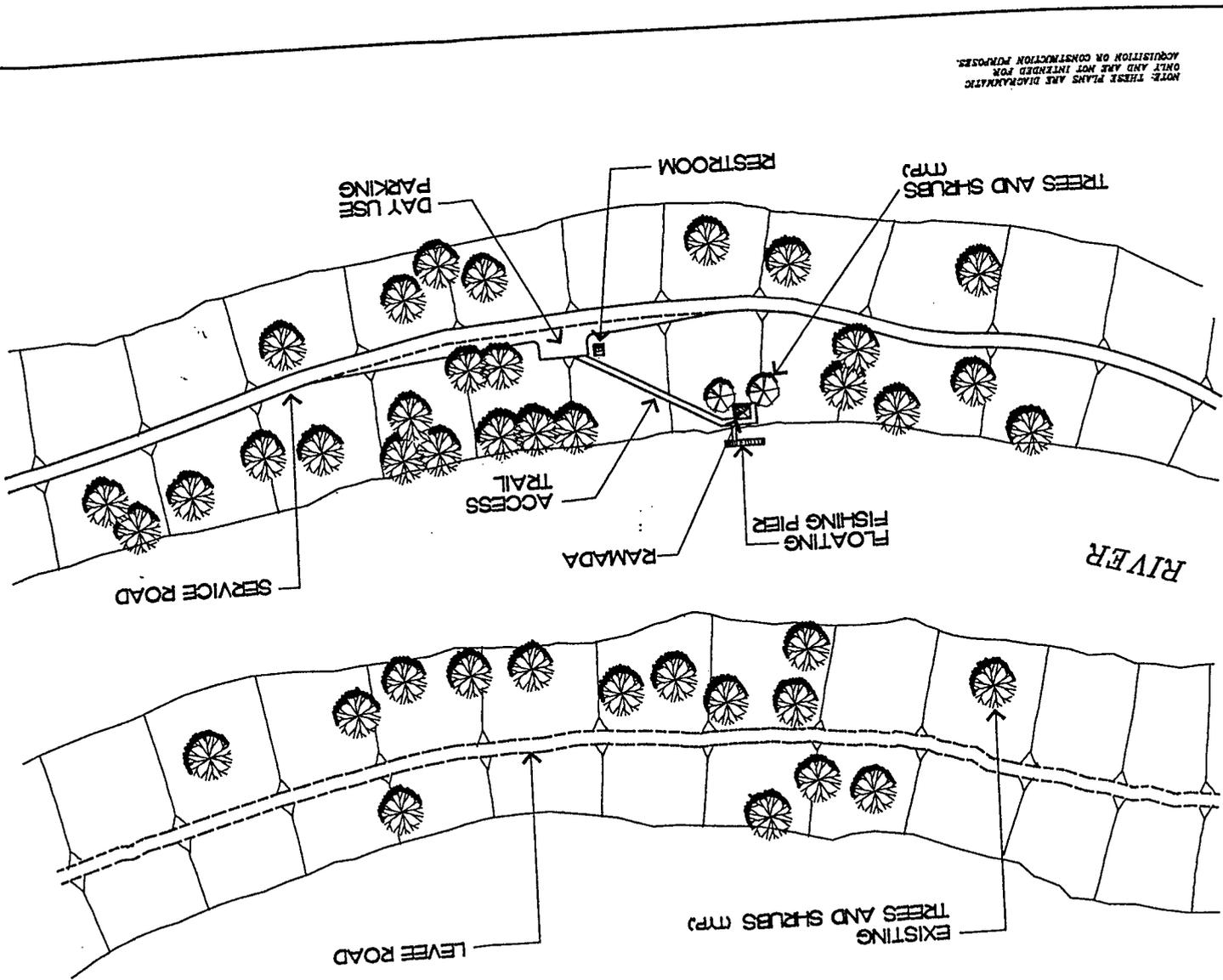
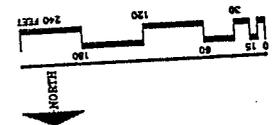
#### LOW IMPACT PLAN

- One 90' long fishing pier
- 1 picnic table with shade ramada
- 1 restroom building with vault
- 6 day use parking spaces with handicap-accessible ramp to fishing area

#### MODERATE IMPACT PLAN

- One 120' long fishing pier/boat dock
- 2 picnic tables with shade ramadas
- 1 restroom building with vault
- 9 day use parking spaces with handicap-accessible ramp to fishing area

NOTE: THESE PLANS ARE DIAGNOSTIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.



TYPICAL FISHING ACCESS  
LOW IMPACT

- FACILITIES**
- 1 FISHING PIER
  - 1 PICNIC TABLE W/SHADE RAMADA
  - 1 RESTROOM BUILDING
  - 6 DAY USE PARKING SPACES

MAP 26

REVISION NO. 1  
TYPICAL FISHING ACCESS  
LOW IMPACT

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES

APPROVES

DATE

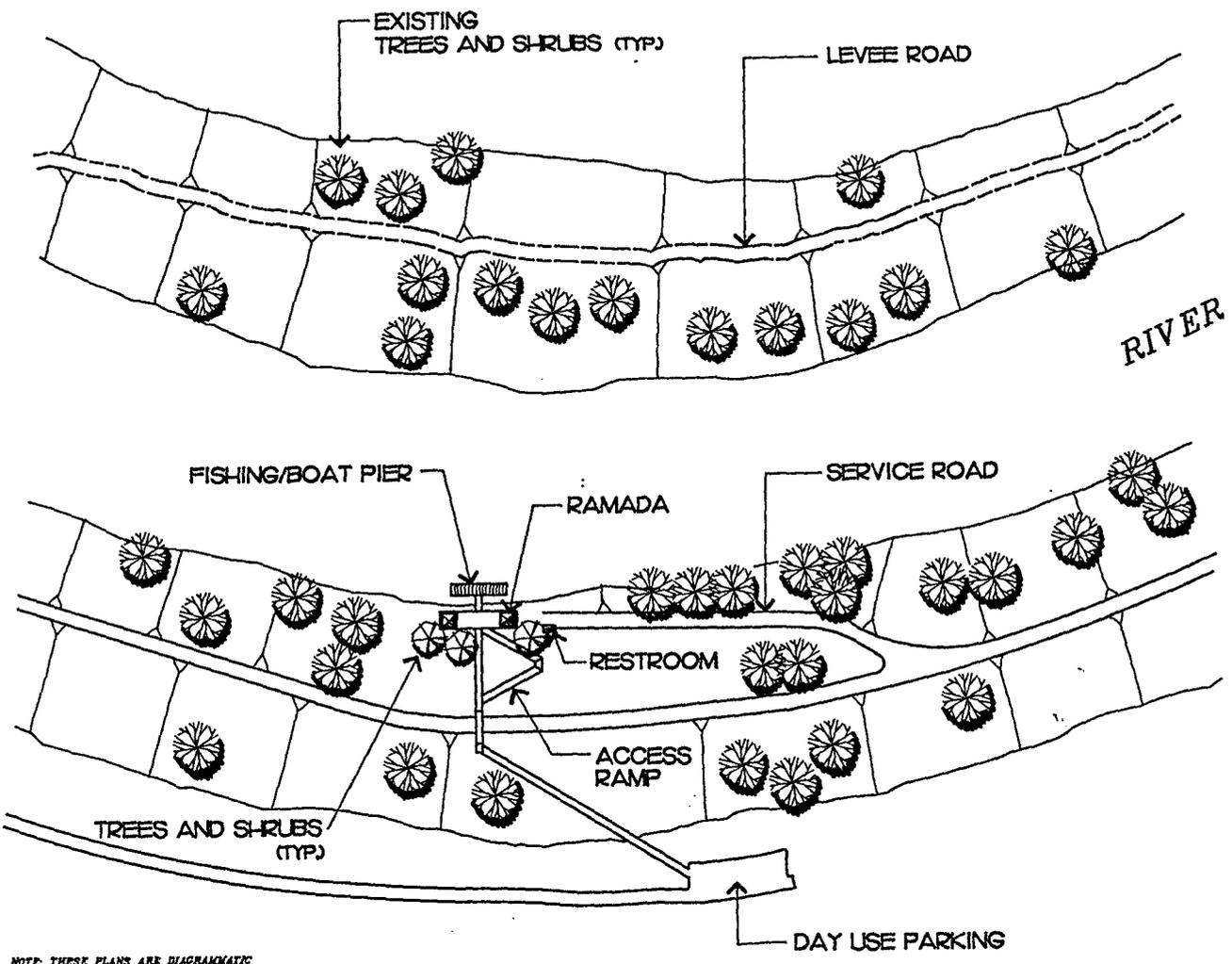
EXISTING

C-102011

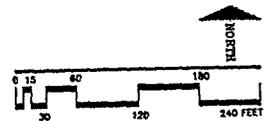
C-102011

### PROPOSED FACILITIES

- 1 FISHING/BOAT PIER
- 2 PICNIC TABLES W/SHADE RAMADAS
- 1 RESTROOM BUILDING
- 9 DAY USE PARKING SPACES



**TYPICAL FISHING ACCESS**  
 MODERATE IMPACT



NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

DATE		DATE
REVISIONS		
RESOURCES DIVISION DEPARTMENT OF WATER RESOURCES		
APPROVED		
SOUTH DELTA RECREATION CONCEPTS <b>TYPICAL FISHING ACCESS</b> MODERATE IMPACT		
DRAWING NO.		
MAP 27		

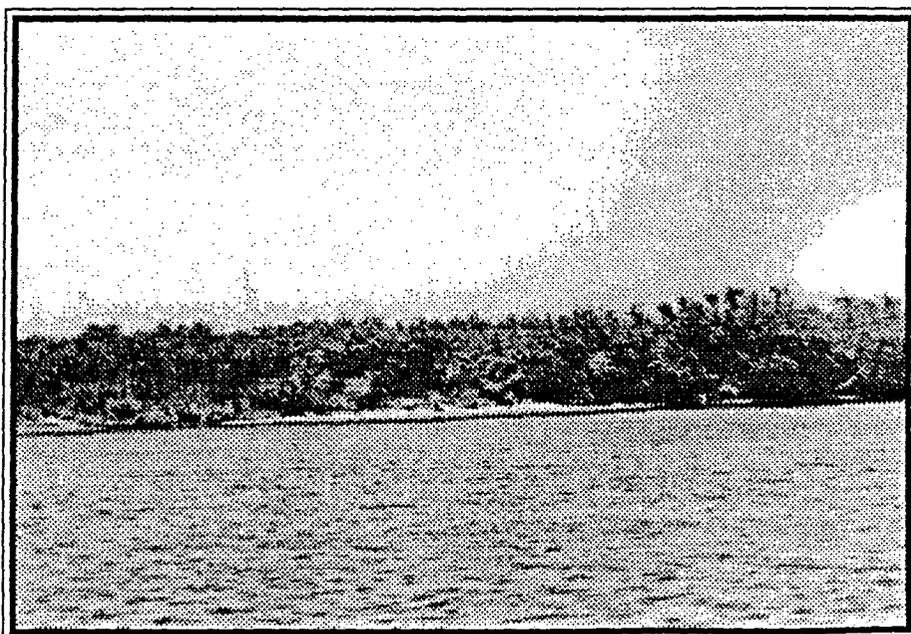
C-102012

FOUNDED BY C. MANN      ESTABLISHED 1916

## TYPICAL SKI BEACH

### EXISTING CONDITIONS

Victoria and North Canals are parallel dredged canals separated by an eroded original levee down the center. This center berm is densely vegetated with tules and is considered a wetland. The levees on the south and north sides of the canals are partially vegetated with shrubs and small trees. The channels are straight-line access between Old River on the west and Middle River on the east. Due to this straight run, the canals are popular with water-skiers. Middle River north of Victoria and North Canals is currently used by water-skiers in various areas. The SDWMP proposed to possibly enlarge the existing waterway by moving levees; this would create additional potential water ski areas.



## TYPICAL SKI BEACH

### Recreation Concept

Waterskiing is one of the most popular recreation activities in the Delta due to the many waterways suitable for this type of use. However, there is a need to provide areas for this activity that include a land-based stopping point for picnicking and restroom breaks, etc. This kind of facility would contribute to meeting the goal of providing more day use facilities in the South Delta as well as identifying areas for more high-intensity recreation uses.

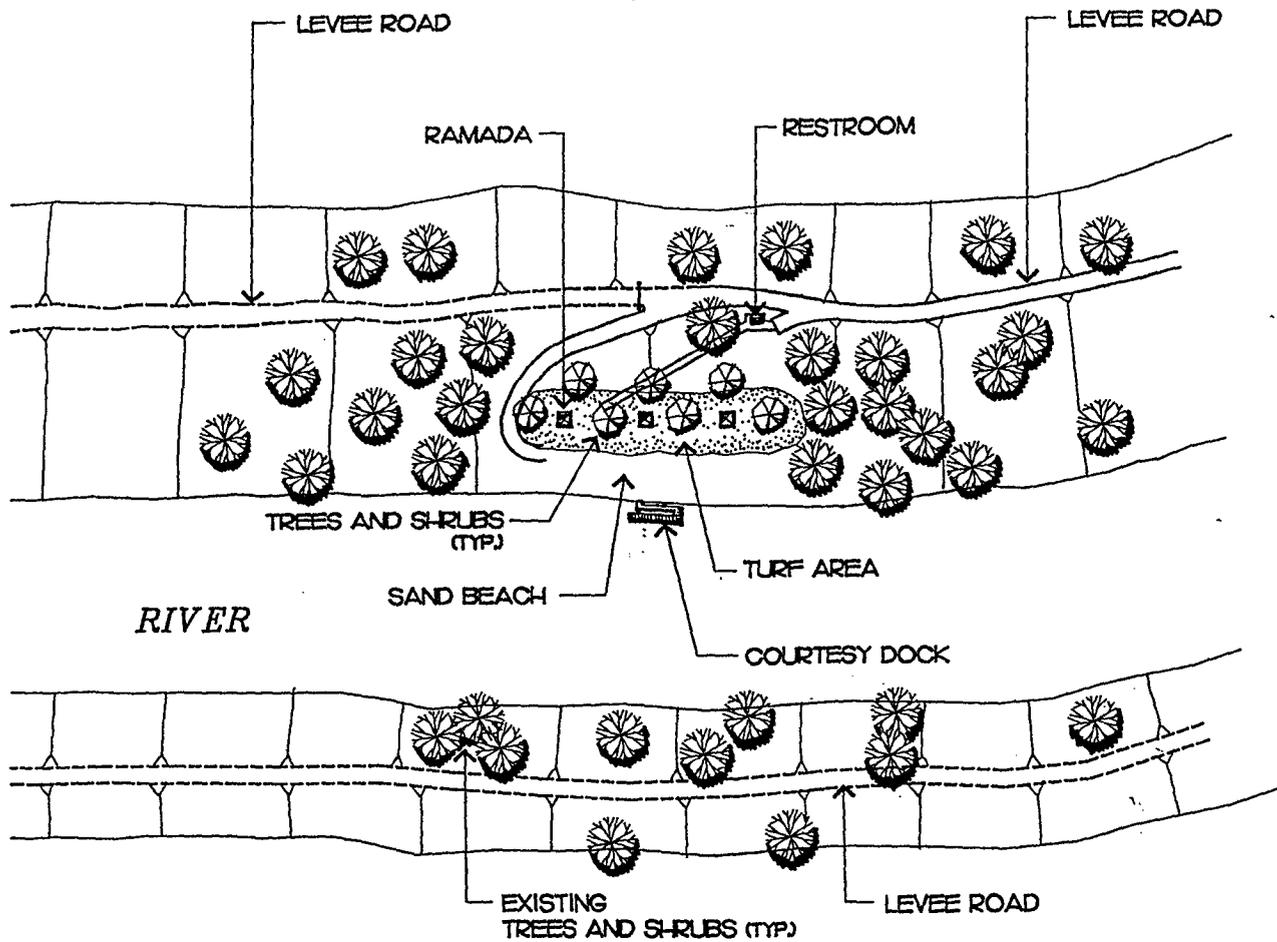
### Recreation Plan Features

#### LOW IMPACT PLAN

- 1 boat dock with room for 3-4 boats
- 3 picnic tables with shade ramadas
- 1 restroom building with vault
- 1 interpretive sign
- A sand beach for picnicking, sunbathing, etc.
- A turf area for picnicking, sunbathing, etc.

#### MODERATE IMPACT PLAN

- 1 boat dock with room for 5-6 boats
- 6 picnic tables with shade ramadas
- 1 restroom building with vault
- 1 interpretive sign
- A sand beach for picnicking, sunbathing, etc.
- A turf area for picnicking, sunbathing, etc.

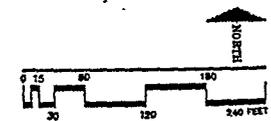


NOTE: THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED FOR ACQUISITION OR CONSTRUCTION PURPOSES.

**PROPOSED FACILITIES**

- 1 COURTESY DOCK
- 3 PICNIC TABLES W/ SHADE RAMADAS
- 1 RESTROOM BUILDING
- 1 INTERPRETIVE SIGN
- SAND BEACH
- TURF AREA
- LEVEE ROAD

**TYPICAL SKI BEACH**  
LOW IMPACT



COMPUTER FILE NAME

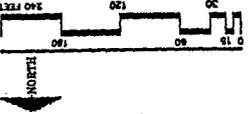
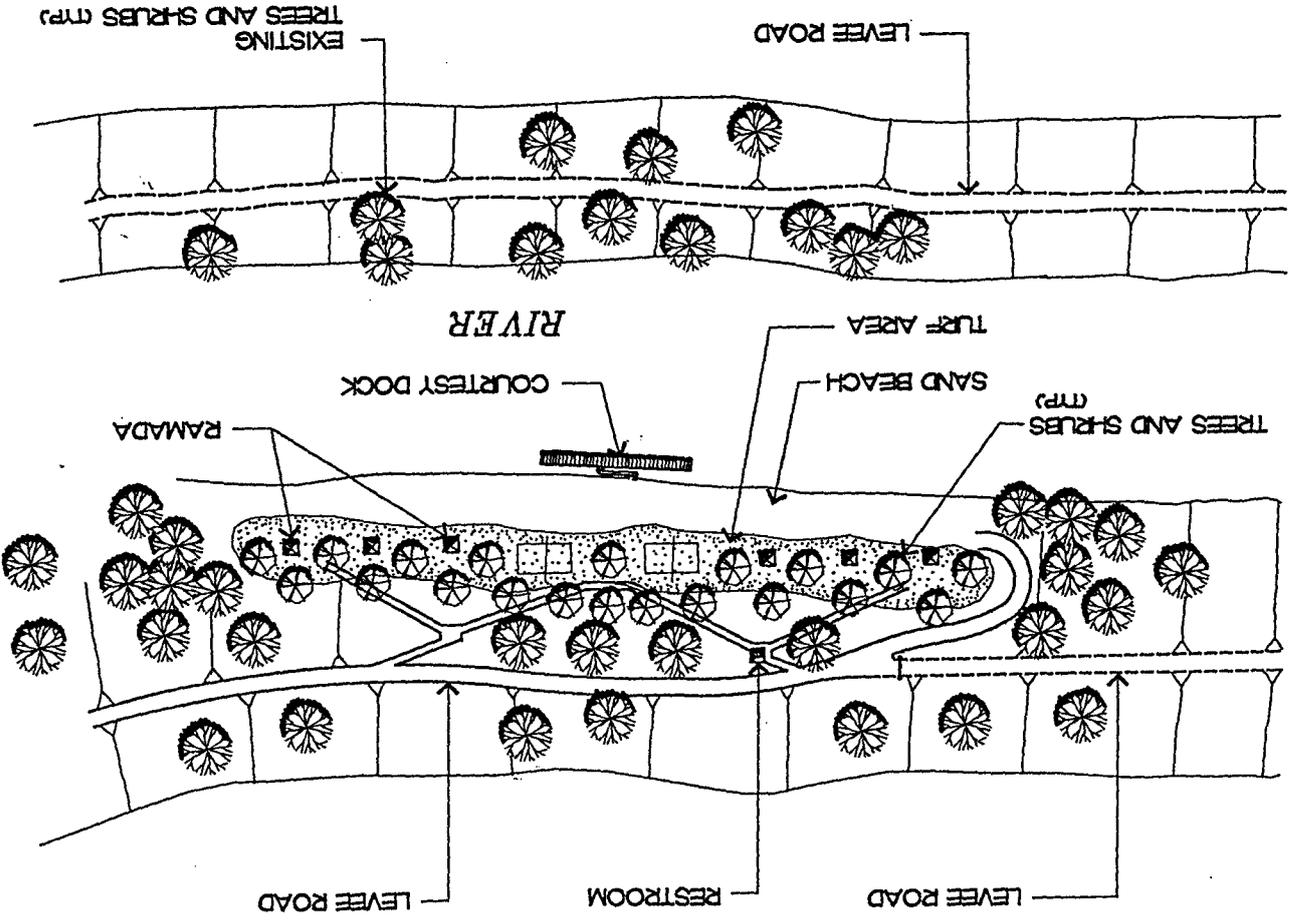
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DATE	
DESIGNER	
REVISIONS	
APPROVER	
DATE	
SOUTH DELTA RECREATIONAL CONCEPTS DEPARTMENT OF WATER RESOURCES	
<b>TYPICAL SKI BEACH</b> LOW IMPACT	
DRAWING NO.	
<b>MAP 28</b>	

C-102015

C-102015

NOTE: THESE PLANS ARE PRELIMINARY  
ONLY AND ARE NOT INTENDED FOR  
ACQUISITION OR CONSTRUCTION PURPOSES.



TYPICAL  
SKI BEACH  
MODERATE IMPACT

- PROPOSED FACILITIES
- 1 COURTESY DOCK
  - 6 PICNIC TABLES W/ SHADE RAMADAS
  - 1 RESTROOM BUILDING
  - 1 INTERPRETIVE SIGN
  - SAND BEACH
  - TURF AREA
  - LEVEE ROAD

MAP 29

SOUTH DELTA RECREATION CONCEPT'S  
TYPICAL SKI BEACH  
MODERATE IMPACT

REVENUES AGENCY OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES  
APPROVED DATE

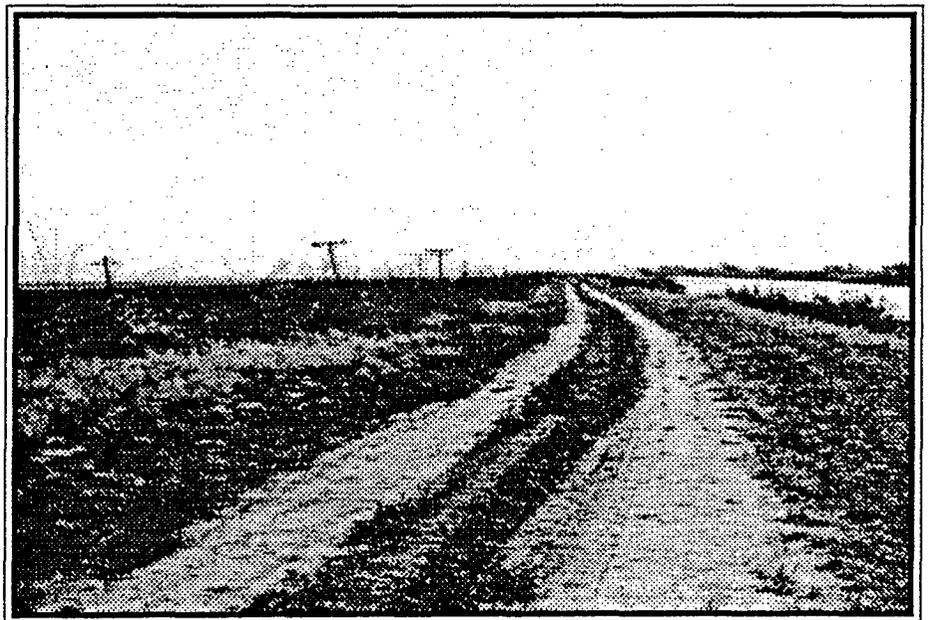
C-102016

C-102016

## REGIONAL TRAIL SYSTEM CONCEPT

### EXISTING CONDITIONS

The South Delta is a very large area with virtually no public access to hiking or bicycling trails. The exception to this is the bicycle trail along the California Aqueduct that begins at Bethany State Recreation Area and heads south. Existing conditions in the South Delta are ideal for establishing a system of trails throughout the area on levee roads and bridges. There are existing recreation facilities primarily in the outer areas of the South Delta that could be linked by a system of trails, and these linked with proposed facilities.



## REGIONAL TRAIL SYSTEM CONCEPT

### Recreation Concept

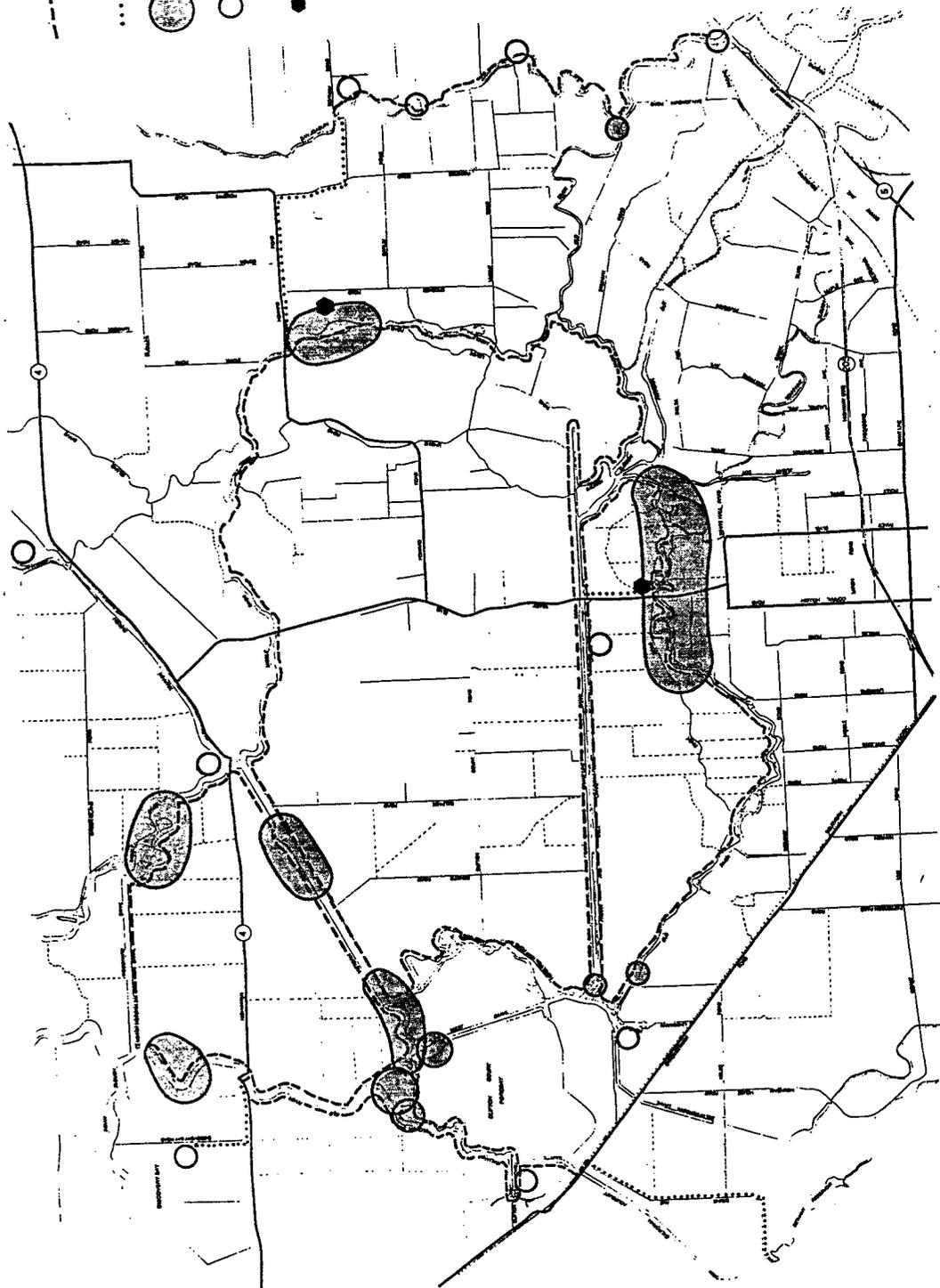
The South Delta is a prime area for establishment of a regional system of trails. This system could be established to connect existing trails (the bicycle trail along the California Aqueduct, etc.) with existing and proposed recreation facilities. It would provide the public with alternative recreation experiences and help distribute recreation activities throughout the South Delta.

### Recreation Plan Features

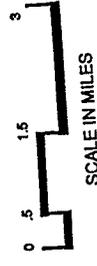
- Link the California Aqueduct Bicycle Trail with existing and proposed recreation facilities
- Use existing levee roads and bridges wherever possible. Upgrade existing roads where necessary to provide Caltrans-standard trails along those roads
- Establish multi-use trail systems to provide access to hikers, equestrians, and bicyclists
- Establish staging areas to facilitate public use: include auto and horse trailer parking, boat docks, restrooms, picnic areas and camping facilities
- Establish bike-in campgrounds for people wishing to use the trail system for longer periods of time

# LEGEND

- PROPOSED MULTI-USE TRAIL (GRAVEL/DIRT)
- ..... PROPOSED ROADSIDE TRAIL
- PROPOSED RECREATION FACILITIES
- EXISTING RECREATION FACILITIES
- STAGING/PARKING AREA



## REGIONAL TRAIL CONCEPT PLAN



SCALE IN MILES

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES

SOUTH DELTA RECREATION CONCEPTS  
REGIONAL TRAIL  
CONCEPT PLAN

MAP  
30

DATE: \_\_\_\_\_  
REVISIONS: \_\_\_\_\_

**South Delta Recreation Concepts**

**POTENTIAL PERMITS FOR RECREATIONAL DEVELOPMENT**

<b>AGENCY</b>	<b>PERMIT DESCRIPTION</b>	<b>PERMIT CONDITIONS</b>
Corps of Engineers (in coordination with U.S. Fish and Wildlife Service and Environmental Protection Agency)	Dredging Permit (Section 404, Clean Water Act) Navigation Permit (Section 10, Rivers and Harbors Act)	Required for any proposal to locate a structure, excavate, or fill material into waters of the United States or to transport dredged material for the purpose of dumping it into ocean waters. Required for any proposal to divert or alter navigable waters in the United States, including wetlands.
Department of Fish and Game	Navigation Dredging Permit	Required for any proposal to use suction or vacuum dredging equipment in any river, stream, or lake designated as open.
	Stream or Lakebed Alteration agreement	Required for any activity that will change the natural state of any river, stream, or lake in California.
Caltrans	Encroachment Permit	Required for any proposal to do work or place an encroachment on or near a State highway or proposal to develop and maintain access to or from any State highway.
	Utility Encroachment Permit	Required for work done by public utility companies providing services, such as gas, electricity, telephone, for most work within the right of way of a State highway.
The Reclamation Board	Encroachment Permit	Required for any activity along or near the banks of the Sacramento and San Joaquin rivers or their tributaries. The Reclamation Board also issues encroachment permits for activity on any "designated floodway" or flood control plan adopted by the Legislature or the Board within the Central Valley.

**South Delta Recreation Concepts**

**COST ESTIMATE SUMMARY FOR LOW IMPACT PLANS**

<b>PROPOSED RECREATION SITE</b>	<b>ACREAGE</b>	<b>ESTIMATED COST</b>
CLIFTON COURT FOREBAY NORTH CAMPGROUND	8.0	\$ 635,766
CLIFTON COURT FOREBAY EAST CAMPGROUND	10.0	\$ 915,216
WIDDOW'S ISLAND	2.6	\$ 499,146
GRANT LINE CANAL BARRIER SITE	4.5	\$ 477,204
OLD RIVER AT KELSO ROAD	3.0	\$ 359,317
OLD RIVER CAMPGROUND	24.0	\$ 852,702
OLD RIVER BOAT CAMP	7.0	\$ 223,229
OLD RIVER AT HEAD BARRIER SITE	0.5	\$ 233,752
MIDDLE RIVER FISHING ACCESS	8.0	\$ 743,476
TYPICAL FISHING ACCESS	0.5	\$ 93,440
TYPICAL SKI BEACH	1.0	\$ 235,305
<b>TOTALS</b>	<b>69.1</b>	<b>\$5,268,553</b>

## COST ESTIMATE SUMMARY FOR MODERATE IMPACT PLANS

PROPOSED RECREATION SITE	ACREAGE	ESTIMATED COST
CLIFTON COURT FOREBAY NORTH CAMPGROUND	8.5	\$1,239,240
CLIFTON COURT FOREBAY EAST CAMPGROUND	14.0	\$1,489,780
WIDDOW'S ISLAND	2.6	\$ 583,740.
GRANT LINE CANAL BARRIER SITE	4.5	\$ 708,976
OLD RIVER AT KELSO ROAD	5.0	\$ 676,001
OLD RIVER CAMPGROUND	24.0	\$ 1,434,442
OLD RIVER BOAT CAMP	7.0	\$ 301,876
OLD RIVER AT HEAD BARRIER SITE	1.0	\$ 307,009
MIDDLE RIVER FISHING ACCESS	19.0	\$1,982,922
TYPICAL FISHING ACCESS	1.6	\$ 180,077
TYPICAL SKI BEACH	2.5	\$ 445,617
<b>TOTALS</b>	<b>89.7</b>	<b>\$9,349,680</b>

**South Delta Recreation Concepts  
Cost Estimate**

**CLIFTON COURT FOREBAY NORTH CAMPGROUND  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Shower/ Restroom Bldg. (150 Series)	1	Ea.	85,000.00	85,000.00
Fishing Pier (10' x 150')	1,500	S.F.	30.00	45,000.00
Entrance Station	1	Ea.	40,000.00	40,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	10,000.00	10,000.00
Road and Parking Paving (A.C.)	57,000	S.F.	2.50	142,500.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Landscaping (Trees and Shrubs)	200	Ea.	30.00	6,000.00
Landscaping (Turf)	30,000	S.F.	0.60	18,000.00
Irrigation	40,000	S.F.	1.25	50,000.00
Picnic Tables	16	Ea.	400.00	6,400.00
Stoves	16	Ea.	300.00	4,800.00
Fire Rings	16	Ea.	200.00	3,200.00
Interpretive Signs	2	Ea.	500.00	1,000.00
Trails	300	L.F.	1.00	300.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	25,000.00	25,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	5,000.00	5,000.00
Electrical (Solar)	2	Ea.	8,000.00	16,000.00
<b>Total Development = 8.0 Acres</b>			SUBTOTAL =	460,700.00
			CONTINGENCY (15%) =	69,105.00
			SUBTOTAL =	529,805.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	105,961.00
			TOTAL =	\$ 635,766.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**CLIFTON COURT FOREBAY NORTH CAMPGROUND  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Shower/ Restroom Bldg. (150 Series)	1	Ea.	85,000.00	85,000.00
Shower/Restroom Bldg (100 Series)	1	Ea.	62,000.00	62,000.00
Restroom Bldg (50 Series)	1	Ea.	20,000.00	20,000.00
Fishing Pier (10' x 150')	1,500	S.F.	30.00	45,000.00
Courtesy Dock (10' x 90')	900	S.F.	30.00	27,000.00
Wind Shelters	4	Ea.	5,000.00	20,000.00
Entrance Station	1	Ea.	40,000.00	40,000.00
<b>SITE DEVELOPMENT:</b>				
Boat Ramp (2 lanes)	1	Ea.	40,000.00	40,000.00
Trailer Sanitation Station	1	Ea.	10,000.00	10,000.00
Clearing	L.S.	L.S.	15,000.00	15,000.00
Road and Parking Paving (A.C.)	113,500	S.F.	2.50	283,750.00
Walkway Paving, Handicap Access (A.C.)	1,200	S.F.	2.50	3,000.00
Landscaping (Trees and Shrubs)	300	Ea.	30.00	9,000.00
Landscaping (Turf)	66,000	S.F.	0.60	39,600.00
Irrigation	81,000	S.F.	1.25	101,250.00
Picnic Tables	40	Ea.	400.00	16,000.00
Stoves	36	Ea.	300.00	10,800.00
Fire Rings	32	Ea.	200.00	6,400.00
Interpretive Signs	4	Ea.	500.00	2,000.00
Trails	1,200	L.F.	1.00	1,200.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	35,000.00	35,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	10,000.00	10,000.00
Electrical (Solar)	2	Ea.	8,000.00	16,000.00
<b>Total Development = 8.5 Acres</b>			SUBTOTAL =	898,000.00
			CONTINGENCY (15%) =	134,700.00
			SUBTOTAL =	1,032,700.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	206,540.00
			TOTAL =	\$1,239,240.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**SOUTH DELTA RECREATION CONCEPTS  
Cost Estimate**

**CLIFTON COURT FOREBAY EAST CAMPGROUND  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Shower/ Restroom Bldg. (200 Series)	1	Ea.	115,000.00	115,000.00
Fishing Pier (10' x 80' x 2)	1,600	Ea.	30.00	48,000.00
Wind Shelters	4	Ea.	5,000.00	20,000.00
Entrance Station	1	Ea.	40,000.00	40,000.00
<b>SITE DEVELOPMENT:</b>				
Trailer Sanitation Station	1	Ea.	10,000.00	10,000.00
Clearing	L.S.	L.S.	10,000.00	10,000.00
Road and Parking Paving (A.C.)	72,000	S.F.	2.50	180,000.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Landscaping (Trees and Shrubs)	400	Ea.	30.00	12,000.00
Landscaping (Turf)	62,000	S.F.	0.60	37,200.00
Irrigation	82,000	S.F.	1.25	102,500.00
Picnic Tables	32	Ea.	400.00	12,800.00
Stoves	30	Ea.	300.00	9,000.00
Fire Rings	28	Ea.	200.00	5,600.00
Interpretive Signs	4	Ea.	500.00	2,000.00
Trails	600	L.F.	1.00	600.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	30,000.00	30,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	10,000.00	10,000.00
Electrical (Solar)	2	Ea.	8,000.00	16,000.00
			SUBTOTAL =	663,200.00
<b>Total Development = 10.0 Acres</b>			CONTINGENCY (15%) =	99,480.00
			SUBTOTAL =	762,680.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	152,536.00
			TOTAL =	\$915,216.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**CLIFTON COURT FOREBAY EAST CAMPGROUND  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Shower/ Restroom Bldg. (200 Series)	1	Ea.	115,000.00	115,000.00
Shower/Restroom Bldg (100 Series)	1	Ea.	62,000.00	62,000.00
Fishing Pier (10' x 80' x 4)	3,200	S.F.	30.00	96,000.00
Wind Shelters	6	Ea.	5,000.00	30,000.00
Entrance Station	1	Ea.	40,000.00	40,000.00
<b>SITE DEVELOPMENT:</b>				
Trailer Sanitation Station	1	Ea.	10,000.00	10,000.00
Clearing	L.S.	L.S.	15,000.00	15,000.00
Road and Parking Paving (A.C.)	117,600	S.F.	2.50	294,000.00
Walkway Paving, Handicap Access (A.C.)	2,000	S.F.	2.50	5,000.00
Landscaping (Trees and Shrubs)	700	Ea.	30.00	21,000.00
Landscaping (Turf)	124,000	S.F.	0.60	74,400.00
Irrigation	159,000	S.F.	1.25	198,750.00
Picnic Tables	45	Ea.	400.00	18,000.00
Stoves	46	Ea.	300.00	13,800.00
Fire Rings	42	Ea.	200.00	8,400.00
Interpretive Signs	6	Ea.	500.00	3,000.00
Trails	1,200	L.F.	1.00	1,200.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	35,000.00	35,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	15,000.00	15,000.00
Electrical (Solar)	3	Ea.	8,000.00	24,000.00
<b>Total Development = 14.0 Acres</b>			<b>SUBTOTAL =</b>	<b>1,079,550.00</b>
			CONTINGENCY (15%) =	161,933.00
			<b>SUBTOTAL =</b>	<b>1,241,483.00</b>
			Architectural, Engineering, Administration and Inspection Fees (20%) =	248,297.00
			<b>TOTAL =</b>	<b>\$1,489,780.00</b>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**South Delta Recreation Concepts  
Cost Estimate**

**WIDDOW'S ISLAND  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Courtesy Dock (10' x 90')	900	S.F.	30.00	27,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	5,000.00	5,000.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Picnic Tables	3	Ea.	400.00	1,200.00
Boardwalk (8' x 8600')	68,800	S.F.	4.00	275,200.00
Observation Decks on Boardwalk	4,800	S.F.	6.00	28,800.00
Observation Decks Off Trail	2,400	S.F.	6.00	14,400.00
Interpretive Signs	10	Ea.	500.00	5,000.00
Trails	2,600	L.F.	1.00	2,600.00
<b>Total Development = 2.6 Acres</b>			SUBTOTAL =	361,700.00
			CONTINGENCY (15%) =	54,255.00
			SUBTOTAL =	415,955.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	83,191.00
			TOTAL =	<u>\$499,146.00</u>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**  
**WIDDOW'S ISLAND**  
**MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Courtesy Dock (10' x 90' X 3')	2,700	S.F.	30.00	81,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	5,000.00	5,000.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Picnic Tables	10	Ea.	400.00	4,000.00
Boardwalk (8' x 8600')	68,800	S.F.	4.00	275,200.00
Observation Decks on Boardwalk	4,800	S.F.	6.00	28,800.00
Observation Decks Off Trail	2,400	S.F.	6.00	14,400.00
Interpretive Signs	15	Ea.	500.00	7,500.00
Trails	4,600	L.F.	1.00	4,600.00
<b>Total Development = 2.6 Acres</b>			SUBTOTAL =	423,000.00
			CONTINGENCY (15%) =	63,450.00
			SUBTOTAL =	486,450.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	97,290.00
			TOTAL =	<u>\$ 583,740.00</u>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

SOUTH FLORIDA RECREATION CONCEPTS  
Cost Estimate

**GRANT LINE CANAL BARRIER SITE  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Restroom Bldg. (100 Series)	1	Ea.	34,000.00	34,000.00
Fishing Pier (2)	1,600	S.F.	30.00	48,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	5,000.00	5,000.00
Road and Parking Paving (A.C.)	38,000	S.F.	2.50	95,000.00
Walkway Paving, Handicap Access (A.C.)	8,700	S.F.	2.50	21,000.00
Landscaping	43,000	S.F.	1.10	47,300.00
Irrigation	43,000	S.F.	1.25	53,750.00
Picnic Tables	10	Ea.	400.00	4,000.00
Interpretive Signs	2	Ea.	500.00	1,000.00
Metal Vehicle Gates	1	Ea.	2,000.00	2,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	25,000.00	25,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	5,000.00	5,000.00
Electrical (Solar)	L.S.	L.S.	4,000.00	4,000.00
<b>Total Development = 4.0 Acres</b>			SUBTOTAL =	345,800.00
			CONTINGENCY (15%) =	51,870.00
			SUBTOTAL =	397,670.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	79,534.00
			TOTAL =	<u>\$ 477,204.00</u>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**COST ESTIMATE**

**GRANT LINE CANAL BARRIER SITE  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Restroom Bldg. (100 Series)	1	Ea.	34,000.00	34,000.00
Fishing Pier (2)	1,300	S.F.	30.00	39,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	5,000.00	5,000.00
Road and Parking Paving (A.C.)	21,500	S.F.	2.50	53,750.00
Walkway Paving, Handicap Access (A.C.)	2,000	S.F.	2.50	5,000.00
Landscaping	140,000	S.F.	1.10	154,000.00
Irrigation	140,000	S.F.	1.25	175,000.00
Picnic Tables	10	Ea.	400.00	4,000.00
Interpretive Signs	2	Ea.	500.00	1,000.00
Metal Vehicle Gates	2	Ea.	2,000.00	4,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	30,000.00	30,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	5,000.00	5,000.00
Electrical (Solar)	1	Ea.	4,000.00	4,000.00
Total Development = 4.5 Acres			SUBTOTAL =	513,750.00
			CONTINGENCY (15%) =	77,063.00
			SUBTOTAL =	590,813.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	118,163.00
			TOTAL =	\$ 708,976.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**South Delta Recreation Concepts  
Cost Estimate**

**OLD RIVER AT KELSO ROAD BARRIER SITE  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Restroom Bldg. (50 Series)	1	Ea.	20,000.00	20,000.00
Fishing Pier W/Courtesy Dock (10' X 145')	1,450	S.F.	30.00	43,500.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	4,000.00	4,000.00
Road and Parking Paving (A.C.)	23,500	S.F.	2.50	58,750.00
Walkway Paving, Handicap Access (A.C.)	2,000	S.F.	2.50	5,000.00
Landscaping	37,500	S.F.	1.10	41,250.00
Irrigation	37,500	S.F.	1.25	46,875.00
Picnic Tables	5	Ea.	400.00	2,000.00
Interpretive Signs	2	Ea.	500.00	1,000.00
Metal Vehicle Gates	2	Ea.	2,000.00	4,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	25,000.00	25,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	5,000.00	5,000.00
Electrical (Solar)	L.S.	L.S.	4,000.00	4,000.00
<b>Total Development = 3.0 Acres</b>			SUBTOTAL =	260,375.00
			CONTINGENCY (15%) =	39,056.00
			SUBTOTAL =	299,431.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	59,886.00
			TOTAL =	\$ 359,317.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**OLD RIVER AT KELSO ROAD BARRIER SITE  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Restroom Bldg. (100 Series)	1	Ea.	34,000.00	34,000.00
Fishing Piers W/Courtesy Docks (10' x 250')	2,500	S.F.	30.00	75,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	5,000.00	5,000.00
Road and Parking Paving (A.C.)	35,000	S.F.	2.50	87,500.00
Walkway Paving, Handicap Access (A.C.)	2,000	S.F.	2.50	5,000.00
Landscaping	99,500	S.F.	1.10	109,450.00
Irrigation	99,500	S.F.	1.25	124,375.00
Picnic Tables	15	Ea.	400.00	6,000.00
Interpretive Signs	2	Ea.	500.00	1,000.00
Metal Vehicle Gates	4	Ea.	2,000.00	8,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	25,000.00	25,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	5,000.00	5,000.00
Electrical (Solar)	L.S.	L.S.	4,000.00	4,000.00
<b>Total Development = 5.0 Acres</b>			<b>SUBTOTAL =</b>	<b>489,935.00</b>
			<b>CONTINGENCY (15%) =</b>	<b>73,399.00</b>
			<b>SUBTOTAL =</b>	<b>563,334.00</b>
			<b>Architectural, Engineering, Administration and Inspection Fees (20%) =</b>	<b>112,667.00</b>
			<b>TOTAL =</b>	<b>\$ 676,001.00</b>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**South Delta Recreation Concepts  
Cost Estimate**

**OLD RIVER CAMPGROUND  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Shower/ Restroom Bldg. (100 Series)	2	Ea.	62,000.00	124,000.00
Entrance Station	1	Ea.	40,000.00	40,000.00
<b>SITE DEVELOPMENT:</b>				
Boat Ramp (1 lane)	1	Ea.	20,000.00	20,000.00
Trailer Sanitation Station	1	Ea.	10,000.00	10,000.00
Clearing	L.S.	L.S.	10,000.00	10,000.00
Road and Parking Paving (A.C.)	126,000	S.F.	2.50	315,000.00
Walkway Paving, Handicap Access (A.C.)	2,000	S.F.	2.50	5,000.00
Picnic Tables	29	Ea.	400.00	11,600.00
Stoves	29	Ea.	300.00	8,700.00
Fire Rings	29	Ea.	200.00	5,800.00
Interpretive Signs	2	Ea.	500.00	1,000.00
Wood Vista Platforms	2	Ea.	3,000.00	6,000.00
Trails	5,800	L.F.	1.00	5,800.00
Metal Vehicle Gates	2	Ea.	2,000.00	4,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	25,000.00	25,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	10,000.00	10,000.00
Electrical (Solar)	2	Ea.	8,000.00	16,000.00
<b>Total Development = 24.0 Acres</b>			SUBTOTAL =	617,900.00
			CONTINGENCY (15%) =	92,685.00
			SUBTOTAL =	710,585.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	142,117.00
			TOTAL =	\$ 852,702.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**OLD RIVER CAMPGROUND  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Shower/ Restroom Bldg. (100 Series)	3	Ea.	62,000.00	186,000.00
Courtesy Dock	1,350	S.F.	30.00	40,500.00
Entrance Station	1	Ea.	40,000.00	40,000.00
Convenience Market w/Restrooms	1,700	S.F.	90.00	153,000.00
<b>SITE DEVELOPMENT:</b>				
Boat Ramp (1 lane)	1	Ea.	20,000.00	20,000.00
Trailer Sanitation Station	1	Ea.	10,000.00	10,000.00
Clearing	L.S.	L.S.	15,000.00	15,000.00
Road and Parking Paving (A.C.)	156,000	S.F.	2.50	390,000.00
Plaza Paving, Handicap Access (Conc.)	6,500	S.F.	2.50	16,250.00
Picnic Tables	51	Ea.	400.00	20,400.00
Stoves	43	Ea.	300.00	12,900.00
Fire Rings	43	Ea.	200.00	8,600.00
Interpretive Signs	4	Ea.	500.00	2,000.00
Wood Vista Platforms	2	Ea.	3,000.00	6,000.00
Playground	1	Ea.	40,000.00	40,000.00
Trails	5,800	L.F.	1.00	5,800.00
Metal Vehicle Gates	2	Ea.	2,000.00	4,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	30,000.00	30,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	15,000.00	15,000.00
Electrical (Solar)	3	Ea.	8,000.00	24,000.00
<b>Total Development = 24.0 Acres</b>			SUBTOTAL =	1,039,450.00
			CONTINGENCY (15%) =	155,918.00
			SUBTOTAL =	1,195,368.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	239,074.00
			TOTAL =	\$1,434,442.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**South Delta Recreation Concepts  
Cost Estimate**

**OLD RIVER BOAT CAMP  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Restroom Bldg. (50 Series)	3	Ea.	20,000.00	60,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	4,000.00	4,000.00
Dredge Portage Areas	L.S.	L.S.	17,000.00	17,000.00
Gravel Service Road	20,000	S.F.	0.90	18,000.00
Picnic Tables	18	Ea.	400.00	7,200.00
Trails	1,560	L.F.	1.00	1,560.00
Metal Vehicle Gates	2	Ea.	2,000.00	2,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	25,000.00	25,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	15,000.00	15,000.00
Electrical (Solar)	3	Ea.	4,000.00	12,000.00
<b>Total Development = 7.0 Acres</b>			SUBTOTAL =	161,760.00
			CONTINGENCY (15%) =	24,264.00
			SUBTOTAL =	186,024.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	37,205.00
			TOTAL =	\$ 223,229.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**  
**OLD RIVER BOAT CAMP**  
**MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Restroom Bldg. (100 Series)	3	Ea.	34,000.00	102,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	5,000.00	5,000.00
Dredge Portage Areas	L.S.	L.S.	20,000.00	20,000.00
Gravel Service Road	19,500	S.F.	0.90	17,550.00
Picnic Tables	29	Ea.	400.00	11,600.00
Trails	3,600	L.F.	1.00	3,600.00
Metal Vehicle Gates	2	Ea.	2,000.00	4,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	28,000.00	28,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	15,000.00	15,000.00
Electrical (Solar)	3	Ea.	4,000.00	12,000.00
Total Development = 7.0 Acres			SUBTOTAL =	218,750.00
			CONTINGENCY (15%) =	32,813.00
			SUBTOTAL =	251,563.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	50,313.00
			TOTAL =	\$ 301,876.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**South Delta Recreation Concepts  
Cost Estimate**

**OLD RIVER AT HEAD FISHING ACCESS  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Chemical Toilet Building w/vault	1	Ea.	20,000.00	20,000.00
Fishing Pier (10' x 40')	400	S.F.	30.00	12,000.00
Shade Ramadas (20' x 20')	2	Ea.	8000.00	16,000.00
<b>SITE DEVELOPMENT:</b>				
Boat Ramp (1 lane)	2	Ea.	20,000.00	40,000.00
Clearing	L.S.	L.S.	3,000.00	3,000.00
Road and Parking Paving (A.C.)	18,000	S.F.	2.50	45,000.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Landscaping (Trees and Shrubs)	22	Ea.	30.00	660.00
Landscaping (Turf)	4,500	S.F.	0.60	2,700.00
Irrigation	4,500	S.F.	1.25	5,625.00
Picnic Tables	2	Ea.	400.00	800.00
Stoves	2	Ea.	300.00	600.00
Interpretive Sign	1	Ea.	500.00	500.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	20,000.00	20,000.00
<b>Total Development = 0.5 Acres</b>			SUBTOTAL =	169,385.00
			CONTINGENCY (15%) =	25,408.00
			SUBTOTAL =	194,793.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	38,959.00
			TOTAL =	\$ 233,752.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**OLD RIVER AT HEAD FISHING ACCESS  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Chemical Toilet Building w/vault	1	Ea.	20,000.00	20,000.00
Fishing Pier (10' x 40' x 3)	1200	S.F.	30.00	36,000.00
Shade Ramadas (20' x 20')	4	Ea.	8000.00	32,000.00
<b>SITE DEVELOPMENT:</b>				
Boat Ramp (1 lane)	2	Ea.	20,000.00	40,000.00
Clearing	L.S.	L.S.	4,000.00	4,000.00
Road and Parking Paving (A.C.)	21,400	S.F.	2.50	53,500.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Landscaping (Trees and Shrubs)	27	Ea.	30.00	810.00
Landscaping (Turf)	5,600	S.F.	0.60	3,360.00
Irrigation	5,600	S.F.	1.25	7,000.00
Picnic Tables	4	Ea.	400.00	1,600.00
Stoves	4	Ea.	300.00	1,200.00
Interpretive Sign	1	Ea.	500.00	500.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	20,000.00	20,000.00
<b>Total Development = 1.0 Acres</b>			SUBTOTAL =	222,470.00
			CONTINGENCY (15%) =	33,371.00
			SUBTOTAL =	255,841.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	51,168.00
			TOTAL =	<u>\$ 307,009.00</u>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**MIDDLE RIVER FISHING ACCESS  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Restroom Bldg. (200 Series)	1	Ea.	64,000.00	64,000.00
Fishing Piers (10' x 250')	2,500	S.F.	30.00	75,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	5,000.00	5,000.00
Road and Parking Paving (A.C.)	65,000	S.F.	2.50	162,500.00
Walkway Paving, Handicap Access (A.C.)	7,500	S.F.	2.50	18,750.00
Landscaping	70,000	S.F.	1.10	77,000.00
Irrigation	70,000	S.F.	1.25	87,500.00
Picnic Tables	20	Ea.	400.00	8,000.00
Interpretive Signs	2	Ea.	500.00	1,000.00
Metal Vehicle Gates	3	Ea.	2,000.00	6,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	25,000.00	25,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	5,000.00	5,000.00
Electrical (Solar)	1	Ea.	4,000.00	4,000.00
<b>Total Development = 8.0 Acres</b>			SUBTOTAL =	538,750.00
			CONTINGENCY (15%) =	80,813.00
			SUBTOTAL =	619,563.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	123,913.00
			TOTAL =	<u><u>\$ 743,476.00</u></u>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**MIDDLE RIVER FISHING ACCESS  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Shower/Restroom Bldg (100 Series)	2	Ea.	62,000.00	62,000.00
Fishing Piers (10' x 200')	2,000	S.F.	30.00	60,000.00
Courtesy Dock (8' x 50')	400	S.F.	30.00	12,000.00
Entrance Station	1	Ea.	40,000.00	40,000.00
Shade Ramadas	21	Ea.	3,000.00	63,000.00
<b>SITE DEVELOPMENT:</b>				
Boat Ramp (1 lane)	1	Ea.	20,000.00	20,000.00
Trailer Sanitation Station	1	Ea.	10,000.00	10,000.00
Clearing	L.S.	L.S.	10,000.00	10,000.00
Road and Parking Paving (A.C.)	91,000	S.F.	2.50	227,500.00
Walkway Paving, Handicap Access (A.C.)	3,000	S.F.	2.50	7,500.00
Landscaping	340,000	S.F.	1.10	374,000.00
Irrigation	340,000	S.F.	1.25	425,000.00
Picnic Tables	21	Ea.	400.00	8,400.00
Stoves	21	Ea.	300.00	6,300.00
Fire Rings	21	Ea.	200.00	4,200.00
Interpretive Signs	4	Ea.	500.00	2,000.00
Metal Vehicle Gates	2	Ea.	2,000.00	4,000.00
Playground	1	Ea.	40,000.00	40,000.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	35,000.00	35,000.00
Sewer (Pump-Out Vaults, etc.)	L.S.	L.S.	10,000.00	10,000.00
Electrical (Solar)	2	Ea.	8,000.00	16,000.00
<b>Total Development = 19.0 Acres</b>			<b>SUBTOTAL =</b>	<b>1,436,900.00</b>
			<b>CONTINGENCY (15%) =</b>	<b>215,535.00</b>
			<b>SUBTOTAL =</b>	<b>1,652,435.00</b>
			<b>Architectural, Engineering, Administration and Inspection Fees (20%) =</b>	<b>330,487.00</b>
			<b>TOTAL =</b>	<b>\$ 1,982,922.00</b>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**WATER BODIES RESTORATION CONCEPTS  
Cost Estimate**

**TYPICAL FISHING ACCESS  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Chemical Toilet Building w/vault	1	Ea.	20,000.00	20,000.00
Fishing Pier (10' x 90')	900	S.F.	30.00	27,000.00
Shade Ramadas (20' x 20')	1	Ea.	8,000.00	8,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	3,000.00	3,000.00
Parking Paving (A.C.)	2,400	S.F.	2.50	6,000.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Landscaping (Trees and Shrubs)	17	Ea.	30.00	400.00
Picnic Tables	1	Ea.	400.00	400.00
Stoves	1	Ea.	300.00	300.00
<b>Total Development = 0.5 Acres</b>			SUBTOTAL =	67,710.00
			CONTINGENCY (15%) =	10,157.00
			SUBTOTAL =	77,867.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	15,573.00
			TOTAL =	\$ 93,440.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**TYPICAL FISHING ACCESS  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Chemical Toilet Building w/vault	1	Ea.	20,000.00	20,000.00
Fishing Pier (10' x 120')	1200	S.F.	30.00	36,000.00
Shade Ramadas	2	Ea.	8,000.00	16,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	4,000.00	4,000.00
Service Road (A.C.)	4,000	S.F.	2.50	10,000.00
Access Road and Parking (A.C.)	13,600	S.F.	2.50	34,000.00
Walkway Paving, Handicap Access (A.C.)	3,360	S.F.	2.50	8,400.00
Landscaping (Trees and Shrubs)	23	Ea.	30.00	690.00
Picnic Tables	2	Ea.	400.00	800.00
Stoves	2	Ea.	300.00	600.00
<b>Total Development = 1.6 Acres</b>			SUBTOTAL =	130,490.00
			CONTINGENCY (15%) =	19,574.00
			SUBTOTAL =	150,064.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	30,013.00
			TOTAL =	\$ 180,077.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**South Delta Recreation Concepts  
Cost Estimate**

**TYPICAL SKI BEACH  
LOW IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> <u>\$</u>	<u>TOTAL</u> <u>\$</u>
<b>STRUCTURES:</b>				
Chemical Toilet Building w/vault	1	Ea.	20,000.00	20,000.00
Courtesy Dock (10' x 50')	500	S.F.	30.00	15,000.00
Shade Ramadas (20' x 20')	3	Ea.	8000.00	24,000.00
<b>SITE DEVELOPMENT:</b>				
Clearing	L.S.	L.S.	3,000.00	3,000.00
Service Road (A.C.)	15,000	S.F.	2.50	37,500.00
Walkway Paving, Handicap Access (A.C.)	41,000	S.F.	2.50	2,500.00
Landscaping (Trees and Shrubs)	37	Ea.	30.00	1,110.00
Landscaping (Turf)	18,000	S.F.	0.60	10,800.00
Sand Beack	700	C.Y.	15.00	10,500.00
Irrigation	18,000	S.F.	1.25	22,500.00
Picnic Tables	3	Ea.	400.00	1,200.00
Stoves	3	Ea.	300.00	900.00
Outdoor Shower	1	Ea.	1,500.00	1,500.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	20,000.00	<u>20,000.00</u>
			SUBTOTAL =	170,510.00
<b>Total Development = 1.0 Acres</b>			CONTINGENCY (15%) =	<u>25,577.00</u>
			SUBTOTAL =	196,087.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	<u>39,218.00</u>
			TOTAL =	<u>\$ 235,305.00</u>

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

**Cost Estimate**

**TYPICAL SKI BEACH  
MODERATE IMPACT PLAN**

<u>FEATURE</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u> \$	<u>TOTAL</u> \$
<b>STRUCTURES:</b>				
Chemical Toilet Building w/vault	1	Ea.	20,000.00	20,000.00
Courtesy Dock (10' x150')	1,500	S.F.	30.00	45,000.00
Shade Ramadas (20' x 20')	6	Ea.	8000.00	48,000.00
<b>SITE DEVELOPMENT:</b>				
Boat Ramp (1 lane)	1	Ea.	20,000.00	20,000.00
Clearing	L.S.	L.S.	4,000.00	4,000.00
Service Road (A.C.)	20,000	S.F.	2.50	50,000.00
Walkway Paving, Handicap Access (A.C.)	1,000	S.F.	2.50	2,500.00
Landscaping (Trees and Shrubs)	120	Ea.	30.00	3,600.00
Landscaping (Turf)	42,600	S.F.	1.25	53,250.00
Sand Beach	1,700	C.Y.	15.00	25,500.00
Irrigation	42,600	S.F.	1.10	46,860.00
Picnic Tables	6	Ea.	400.00	2,400.00
Stoves	6	Ea.	300.00	1,800.00
<b>SITE UTILITIES:</b>				
Water (Well, Water lines, etc.)	L.S.	L.S.	20,000.00	20,000.00
<b>Total Development = 2.5 Acres</b>			SUBTOTAL =	322,910.00
			CONTINGENCY (15%) =	48,437.00
			SUBTOTAL =	371,347.00
			Architectural, Engineering, Administration and Inspection Fees (20%) =	74,270.00
			TOTAL =	\$ 445,617.00

NOTE: This estimate does not include "grading costs" since a topographic survey is unavailable.

## PARK RESTROOM STANDARDS

### Restroom sizing and location:

- A. Day-use (General)
  - 1. One toilet and one lavatory for every 50 persons.
  - 2. The design capacity of a day-use facility is based on the number of parking spaces at 4 persons per car.
  - 3. The maximum distance to a restroom from the facility it serves is 400 feet.
- B. Day-use (Beach)
  - 1. One toilet for every 100 persons and one lavatory for every 200 persons.
  - 2. The design capacity of a day-use facility is based on the number of parking spaces at 4 persons per car.
  - 3. The maximum distance to a restroom from the facility it serves is 400 feet.
- C. Campground:
  - 1. One toilet, one lavatory, and one shower for every 25 persons desirable, 30 persons maximum.
  - 2. The design capacity of a campground is based on the number of campsites at 4 persons per campsite.
  - 3. The maximum distance to a restroom from the furthest campsite it serves is 400 feet.

### Restroom capacities:

A. Day-use (General)			
1.	50 Series Comfort Station	50 persons	12 parking spaces
2.	100 Series Comfort Station	100 persons	25 parking spaces
3.	200 Series Comfort Station	200 persons	50 parking spaces
4.	300 Series Comfort Station	300 persons	75 parking spaces
5.	400 Series Comfort Station	400 persons	100 parking spaces
B. Day-use (Beach)			
1.	100 Series Comfort Station	200 persons	50 parking spaces
2.	150 Series Comfort Station	300 persons	75 parking spaces
3.	200 Series Comfort Station	400 persons	100 parking spaces
4.	250 Series Comfort Station	500 persons	125 parking spaces
5.	350 Series Comfort Station	700 persons	175 parking spaces
6.	450 Series Comfort Station	900 persons	225 parking spaces
7.	550 Series Comfort Station	1100 persons	275 parking spaces
C. Campground			
1.	50 Series Comfort Station	25 persons	1-7 Campsites
2.	100 Series Combination Building	50 persons	8-15 Campsites
3.	150 Series Combination Building	75 persons	16-22 Campsites
4.	200 Series Combination Building	100 persons	23-30 Campsites
5.	300 Series Combination Building	150 persons	31-45 Campsites

The park standards as shown are a combination of the requirements set forth by Titles 17, 24, and 25; and the park planning standards of the Department of Parks and Recreation.

## PARK RESTROOM COSTS

The following cost data is based on \$200.00 per square foot for the building only. The utilities or vault are extra. Actual construction bids have varied between 75% and 200% of these estimates. Costs vary because of size of job, geographic location, time of year, and construction climate (other available work).

### Restroom Types:

A.	Day-use (General)	Number of Water Closets	Building Area (s.f.)	Base Building Cost (1990)
1.	50 Series Comfort Station	1	80	\$20,000
2.	100 Series Comfort Station	2	170	\$34,000
3.	200 Series Comfort Station	4	320	\$64,000
4.	300 Series Comfort Station	6	400	\$80,000
5.	400 Series Comfort Station	8	520	\$104,000
B.	Day-use (Beach)	Number of Water Closets	Building Area (s.f.)	Base Building Cost (1990)
1.	100 Series Comfort Station	2	170	\$34,000
2.	150 Series Comfort Station	3	230	\$46,000
3.	200 Series Comfort Station	4	320	\$64,000
4.	250 Series Comfort Station	5	320	\$64,000
5.	350 Series Comfort Station	7	410	\$82,000
6.	450 Series Comfort Station	9	500	\$100,000
7.	550 Series Comfort Station	11	590	\$118,000
C.	Campground	Number of Water Closets Showers	Building Area (s.f.)	Base Building Cost (1990)
1.	50 Series Comfort Station			see above
2.	100 Series Combination Building	2	310	\$62,000
3.	150 Series Combination Building	3	425	\$85,000
4.	200 Series Combination Building	4	575	\$115,000
5.	300 Series Combination Building	6	800	\$160,000

## **SOUTH DELTA WATER MANAGEMENT PROGRAM**

Program Objectives of the S.D.W.M.P. are to:

1. Improve and maintain water levels, circulation patterns, and water quality in the South Delta area for local agricultural diversions.
2. Improve SWP operational flexibility to help reduce fishing impacts and improve fishing conditions.
3. Improve SWP and CVP water supply reliability through enhanced capabilities for banking winter supplies and through improved water quality, which will reduce the cost of treating drinking water supplies.
4. Provide the opportunity to interconnect with Clifton Court Forebay and improve water quality for Contra Costa Canal deliveries to be treated for use as drinking water supplies.
5. Improve navigation and flood protection; and
6. Increase recreational opportunities.

## SELECTED REFERENCES

- California Department of Parks and Recreation, *General Plan for Brannan Island and Franks Tract State Recreation Area*, Sacramento, California, February 1988.
- California Department of Water Resources, U.S. Bureau of Reclamation, *South Delta Water Management Program, Draft Environmental Impact Report*, June 1990.
- California Department of Water Resources, Sacramento — San Joaquin Delta Outdoor Recreation Implementation Plan, Prepared by Applied Research Consultants, Inc., June 1981.
- California Department of Water Resources, Sacramento — San Joaquin Delta Recreation Concept Plan, January 1981.
- State of California, The Resources Agency, Delta Master Recreation Plan, Sacramento, California, September 1976.
- State of California, The Resources Agency, Sacramento-San Joaquin Delta Master Recreation, Sacramento, California, June 1966
- U.S. Bureau of Reclamation, Ecological Resources Division, *Draft South Delta Recreation Study*, Denver, Colorado, December 1988.

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