

# Delta Levee Standards Conference

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May 2, 2012

State of California

**FLOOD HAZARD  
MITIGATION PLAN**

**FOR THE**

**SACRAMENTO-SAN JOAQUIN  
DELTA**

**Covering portions of Contra Costa, Sacramento,  
San Joaquin, Solano, and Yolo Counties**

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**Disaster Declarations**

**FEMA-633-DR, FEMA-651-DR, FEMA-669-DR,  
FEMA-677-DR**

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**Prepared by**

**Department of Water Resources**

**for**

**Office of Emergency Services**

**September 15, 1983**

Materials used to repair or restore the levees must allow enough consolidation to minimize erosion during wave and tidal action and rain runoff. Districts will take and record soundings before dredging to be sure depths are adequate for the materials required.

2. Short-Term Levee Rehabilitation Plan

a. Local Districts

Local districts should:

- (1) Rehabilitate levees as rapidly as possible, considering engineering, fiscal, and environmental restraints, to the following minimum standards:
  - (a) Levees shall have 1 foot of freeboard above the flood expected once in 100 years. (It is important to recognize that 1 foot of freeboard at a 100-year flood does not mean 100-year flood protection. Common levee design practice calls for 3 feet of freeboard at project design flood. Also, the uncertainties of Delta levee foundations and unpredictability of Delta tide levels suggest that even with 3 feet of freeboard, the degree of protection would be far less than the design flood frequency.)
  - (b) The minimum crown width shall be at least 16 feet.
  - (c) Waterside slopes shall be at least 1.5 horizontal to 1 vertical, with revetment in areas where erosion has been a problem. The size of the revetment material shall be appropriate for the slope.
  - (d) Landside slopes shall be at least 2 horizontal to 1 vertical, with flatter slopes in the lower portion of the levee in areas where soil stability and seepage have been problems.
  - (e) The levees shall have all-weather access roads.
- (2) Prepare a plan for annual rehabilitation work by June 1 of each year describing rehabilitation work and a schedule for its accomplishment.

PART V. LONG-TERM MITIGATION PLAN

A. Policy

The long-term mitigation plan is to implement a major levee rehabilitation project within 20 years. The State supports the concept of a System Plan as described in the Corps' draft Feasibility Report, dated October 1982, and in the Department's Bulletin 192-82, Delta Levees Investigation, dated December 1982, with the understanding that the local districts may complete construction necessary to comply with federal flood control standards on some islands before a federal flood control project is implemented. All islands should be included in the System Plan for stage construction, as recommended in the Corps' plan.

B. Long-Term Levee Rehabilitation Plan

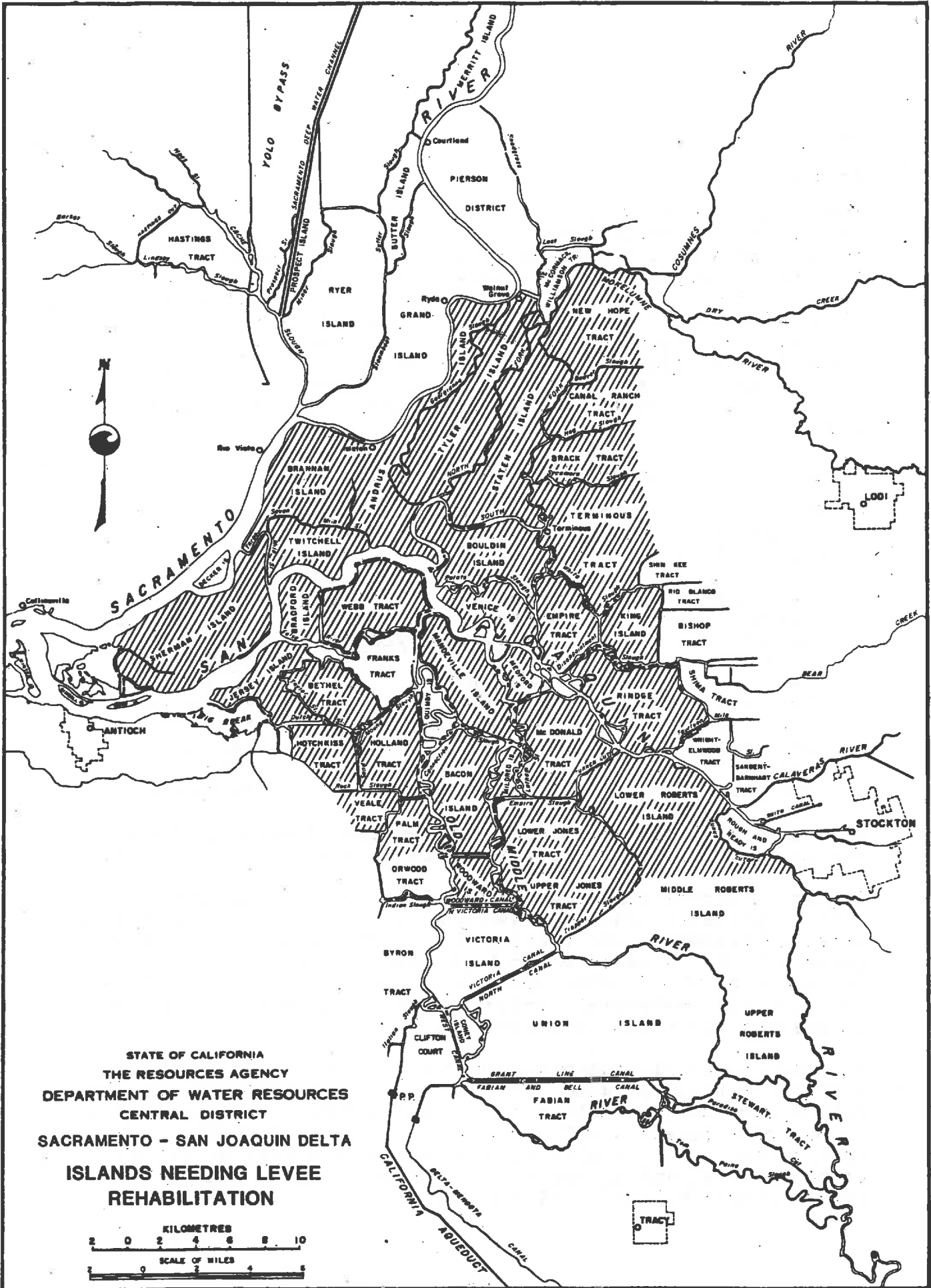
Based on current information, the following islands and tracts are considered to have the most urgent need of levee rehabilitation:

Andrus-Brannan	Hotchkiss	Rindge
Bacon	Jersey	Roberts, Lower
Bethel	Jones, Lower/Upper	Sherman
Bouldin	King	Staten
Brack	Mandeville	Terminous
Bradford	McDonald	Twitchell
Canal Ranch	Medford	Tyler
Dead Horse	Mildred	Venice
Empire	New Hope	Webb
Holland	Palm	Woodward

This list will probably change during the advanced planning stages of the project. (These tracts are shown in Figure 4.)

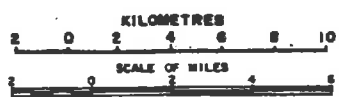
A joint state-federal levee rehabilitation project requires state legislative and congressional authorizations, funding for detailed planning, and funding for construction. Completion of these actions is expected to take from six to ten years. It is assumed that the funding would be at least 65 percent federal and that the nonfederal funding requirements would be shared 50 percent state and 50 percent local.

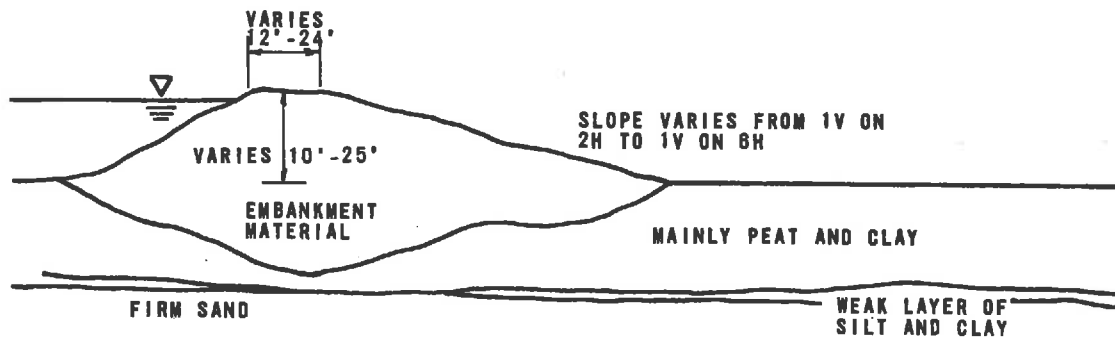
In some instances, individual districts have an insufficient economic base to provide even 15 to 20 percent of the cost of modernizing and protecting the island system. In these situations, consideration will be given to a greater State share of such costs, to be reimbursed from subsequent sale or transfer of property rights or value to the State. As an example, public acquisition of land for use in a wildlife management or



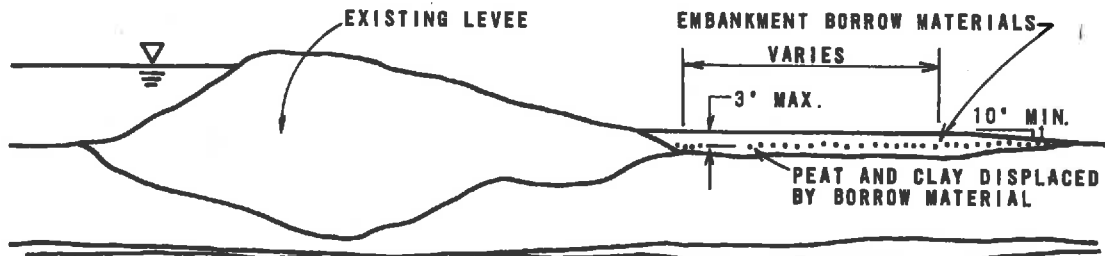
STATE OF CALIFORNIA  
 THE RESOURCES AGENCY  
 DEPARTMENT OF WATER RESOURCES  
 CENTRAL DISTRICT  
 SACRAMENTO - SAN JOAQUIN DELTA

**ISLANDS NEEDING LEVEE REHABILITATION**

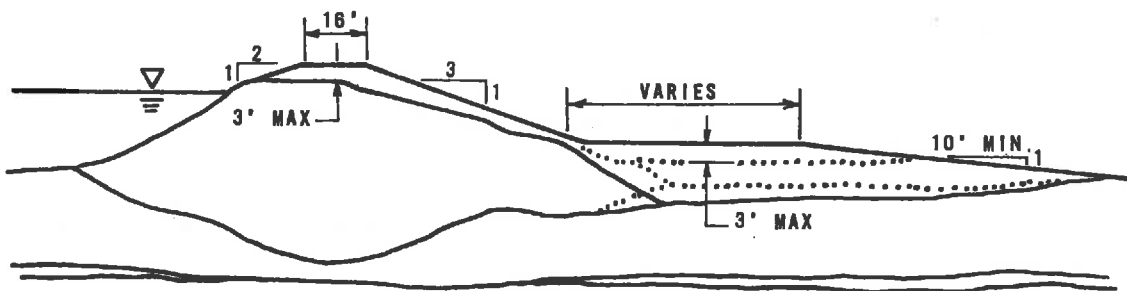




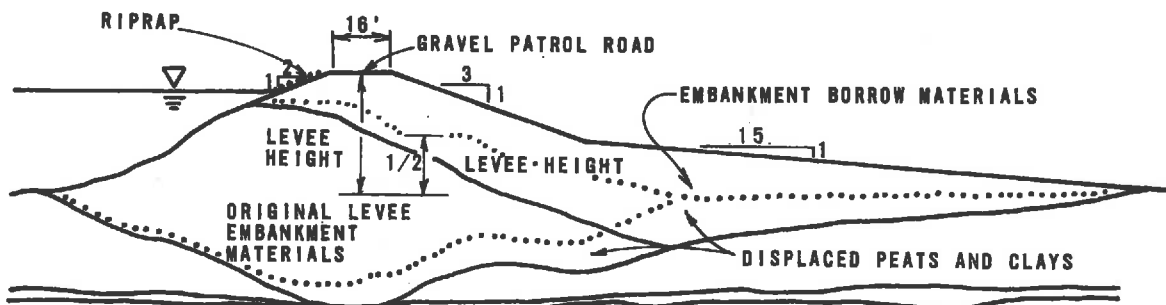
**EXISTING CONDITION**



**STAGE 1 LANDSIDE BERM  
IF NECESSARY**



**STAGE 2 INCREASE HEIGHT OF LANDSIDE BERM  
WHEN NECESSARY**

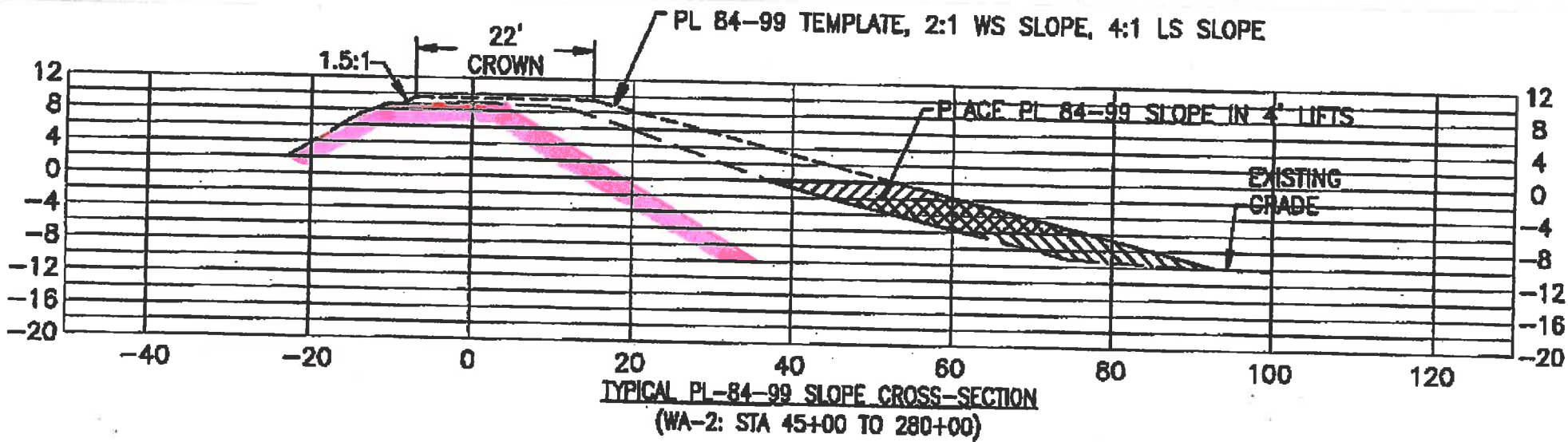


**FINAL CROSS SECTION**

SACRAMENTO-SAN JOAQUIN DELTA  
CALIFORNIA

**STAGE CONSTRUCTION  
SEQUENCE OF CONSTRUCTION**

SACRAMENTO DISTRICT, CORPS OF ENGINEERS  
JULY 1982

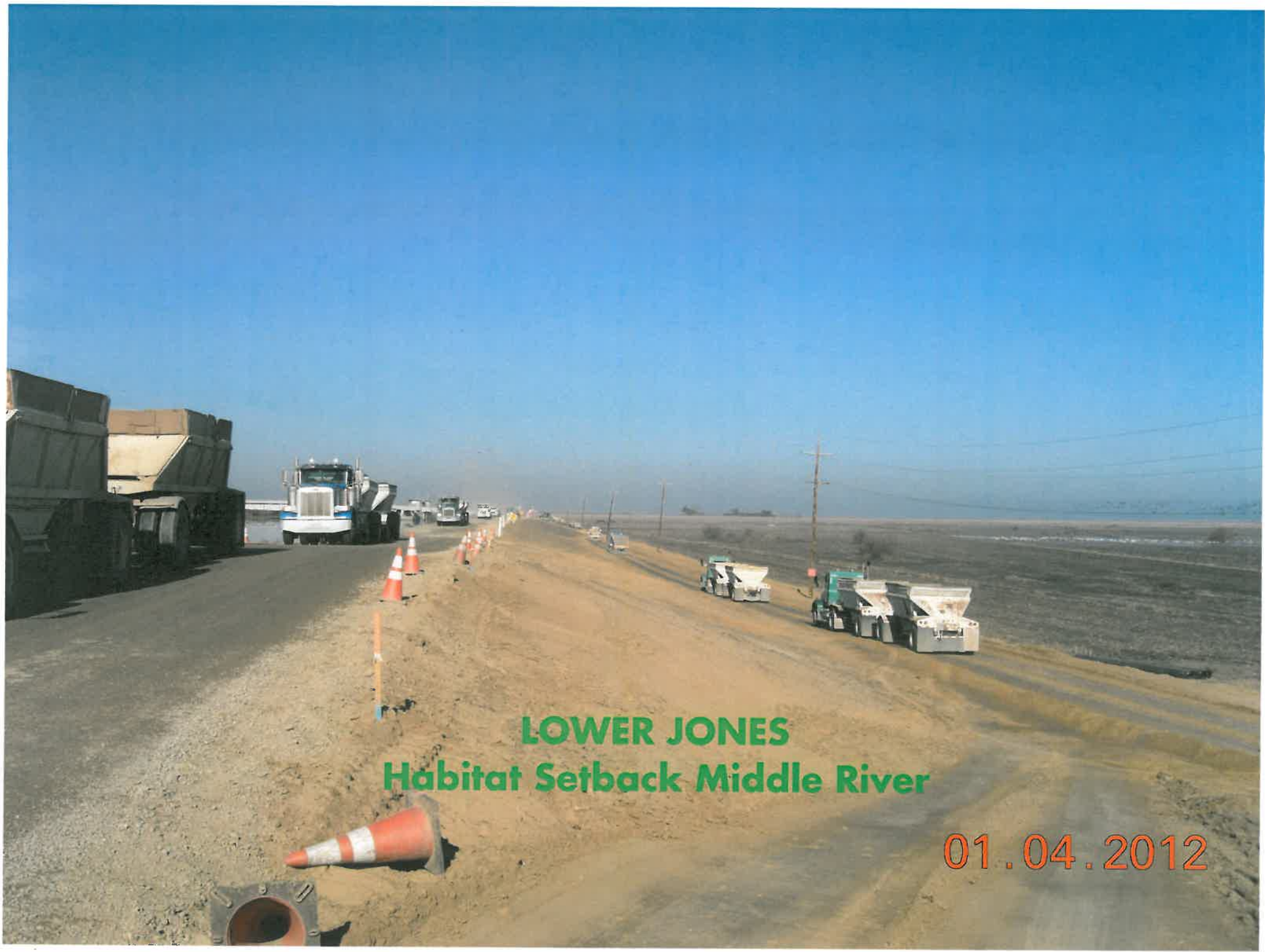




LOWER JONES HABITAT SETBACK MIDDLE RIVER

02.20.2012





**LOWER JONES  
Habitat Setback Middle River**

**01.04.2012**



**LOWER JONES**  
**Backslope Middle River**

01.04.2012



**UPPER JONES**  
**Backslope Middle River**

01.04.2012



Woodward  
Backslope Santa Fe Cut

01.04.2012



**WOODWARD**  
**Backslope Santa Fe Cut**

01.04.2012





LOWER JONES  
TRACT

UPPER JONES  
TRACT

WOODWARD  
ISLAND

SEEPAGE



**LOWER JONES TRACT**

**McDONALD ISLAND**





**STRONG WINDS  
DROVE WAVE WASH**



3 22 '95

CDWA-6



(Venice Island, January 1983)