MINUTE ITEM
This Calendar Item No. C49
was approved as Minute Item
No. 49 by the State Lands
Commission by a vote of 3
to 0 at its 7/6/95
meeting.

CALENDAR ITEM

C49

A 8

S 4

07/06/95
PRC 7838 W 25121
N. Smith

GENERAL LEASE - PUBLIC AGENCY USE

APPLICANT:
U. S. Department of Transportation
Maritime Administration
Mar-310 Room 7225
400 7th Street SW
Washington, DC 20590

AREA, TYPE LAND AND LOCATION:
Tide and submerged lands located in Suisun Bay northeast of Benicia.

LAND USE:
Demolish an existing wooden pier and causeway to construct a new pile supported pier and an existing General Anchorage 26.

PROPOSED LEASE TERMS:
Lease period:
Twenty-five (25) years beginning June 15, 1995.

CONSIDERATION:
The public use and benefit; with the State reserving the right at any time to set a monetary rental if the Commission finds such action to be in the State's best interest.

APPLICANT STATUS:
Applicant is permittee of upland.

PREREQUISITE CONDITIONS, FEES AND EXPENSES:
Filing fee, processing costs and environmental costs have been received.

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STATUTORY AND OTHER REFERENCES:

A. P.R.C.: Div. 6, Parts 1 and 2; Div. 13.

B. Cal. Code Regs.: Title 3, Div. 3; Title 14, Div. 6.

AB 884:

11/05/95

OTHER PERTINENT INFORMATION:

1. Since the reconstruction of the pier would require a lease from the Commission staff found that it would be in the State's best interest to include the existing General Anchorage No. 26, the "Mothball Fleet", within one transaction. From the time of the establishment of the fleet, size has fluctuated drastically, beginning after World War II with over 300 ships to its current size of 70-80 ships.

2. As to the existing General Anchorage, pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Code Regs. 15061), the staff has determined that this activity is exempt from the requirements of the CEQA because it involves an "ongoing project" as defined by CEQA and the State CEQA Guidelines.

   Authority: P.R.C. 21169 and 14 Cal. Code Regs. 15261.

3. This activity involves lands identified as possessing significant environmental values pursuant to P.R.C. 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

4. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Code Regs. 15025), the staff has prepared a Proposed Finding of No Significant

Impact (FONSI) in place of a proposed Negative Declaration identified as ND 669, State Clearinghouse No. SCH 95052022. Such Proposed FONSI/Negative Declaration was prepared and circulated for public review pursuant to the provisions of CEQA.

Based upon the Initial Study, the Proposed FONSI/Negative Declaration, and the comments received in response thereto, there is no substantial evidence that the project will have a significant effect on the environment. (14 Cal. Code Regs. 15074(b))

5. A Mitigation Monitoring Plan has been prepared in conformance with the provisions of the CEQA. (Section 21081.6, P.R.C.)

APPROVALS OBTAINED:

None.

FURTHER APPROVALS REQUIRED:

State Lands Commission; US Army Corps of Engineers, San Francisco Bay Conservation and Development Commission and Regional Water Quality Control Board.

EXHIBITS:

A. Land Description
B. Location Map
C. Proposed Pier
D. Proposed FONSI/Negative Declaration

IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT THE GENERAL ANCHORAGE IS EXEMPT FROM THE REQUIREMENTS OF THE CEQA PURSUANT TO 14 CAL. CODE REGS. AS A STATUTORILY EXEMPT PROJECT PURSUANT TO P.R.C. 21169 AND 14 CAL. CODE REGS. 15261, AN ACTIVITY INVOLVING AN ONGOING PROJECT.

2. CERTIFY THAT A PROPOSED FONSI/NEGATIVE DECLARATION, ND 669, STATE CLEARINGHOUSE NO. 95052022, WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE NEPA AND THE CEQA AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN AND THE COMMENTS RECEIVED IN RESPONSE THERETO.

3. ADOPT THE FONSI/NEGATIVE DECLARATION AND DETERMINE THAT THE PROJECT AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

4. ADOPT THE MITIGATION MONITORING PLAN, AS CONTAINED IN EXHIBIT "C", ATTACHED HERETO.

5. FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED FOR THE LAND PURSUANT TO P.R.C. 6370, ET SEQ.

6. AUTHORIZE ISSUANCE TO THE U. S. DEPARTMENT OF TRANSPORTATION, MARITIME ADMINISTRATION, OF A TWENTY FIVE-YEAR GENERAL LEASE-PUBLIC AGENCY USE BEGINNING JUNE 15, 1995; IN CONSIDERATION OF THE PUBLIC USE AND BENEFIT, WITH THE STATE RESERVING THE RIGHT AT ANY TIME TO SET A MONETARY RENTAL IF THE COMMISSION FINDS SUCH ACTION TO BE IN THE STATE'S BEST INTEREST; FOR EXISTING GENERAL ANCHORAGE AND DEMOLITION AND RECONSTRUCTION OF PILE SUPPORTED PIER ON THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED AND BY REFERENCE MADE A PART HEREOF.

EXHIBIT "A"
LAND DESCRIPTION

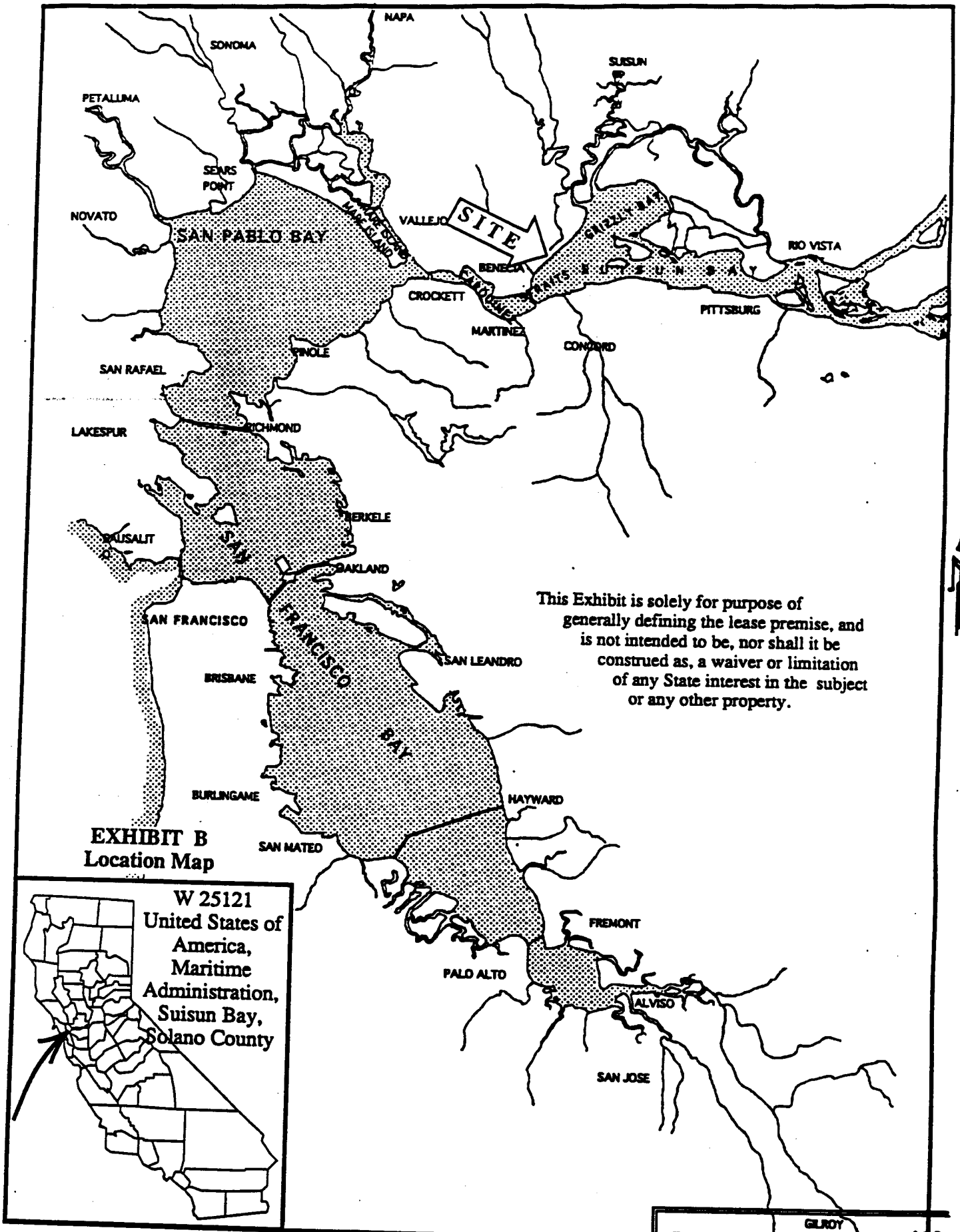
W 25121

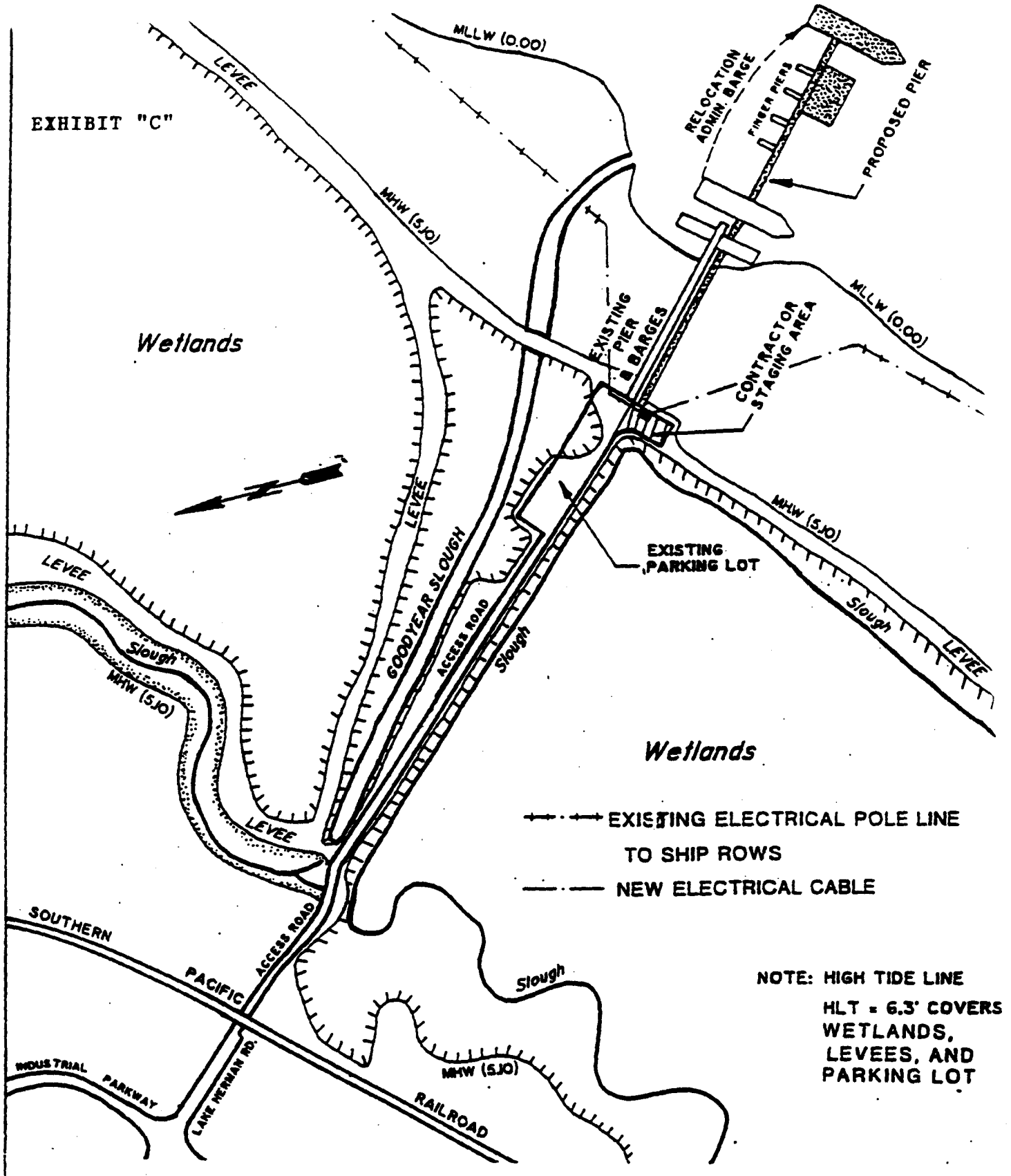
A parcel of land situated northeasterly of the City of Benicia, in Solano County, State of California, more particularly described as follows:

Anchorage No. 26. On the west side of Suisun Bay, adjacent to and northeast of the city of Benicia within the following boundaries; BEGINNING on the shore northeast of Army Point at 38° 02' 54" N., 122° 07' 37" W.; thence south-southeasterly along the Southern Pacific bridge to 38° 02' 38" N., 122° 07' 24" W.; thence easterly to 38° 02' 42" N., 122° 07' 07.5 W.; thence northeasterly to 38° 05' 42" N., 122° 04' 06" W.; thence northwesterly to the shore at 38° 05' 58" N., 122° 04' 28" W.; thence along the shore to the point of beginning.

END OF DESCRIPTION

Prepared by or under the direction of
Rand La Force, Senior Boundary Determination Officer
California State Lands Commission
May 22, 1995


NAPA
SONOMA
SUISUN
PETALUMA
SEARS POINT
NOVATO
SAN PABLO BAY
MARE ISLAND
VALLEJO
SITE
GRIZZLY BAY
RIO VISTA
BENICIA
CARQUINEZ STRAITS
SUISUN BAY
CROCKETT
PITTSBURG
MARTINEZ
CONCORD
PINOLE
SAN RAFAEL
RICHMOND
LAKESPUR
BERKELE
SAUSALIT
OAKLAND
SAN FRANCISCO
SAN LEANDRO
BRISBANE
BURLINGAME
HAYWARD
SAN MATEO
FREMONT
PALO ALTO
ALVISO
SAN JOSE
GILROY
This Exhibit is solely for purpose of generally defining the lease premise, and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.
EXHIBIT B
Location Map
W 25121
United States of America, Maritime Administration, Suisun Bay, Solano County



PURPOSE: ALLEVIATE SHOALING PROBLEM, PREVENT VESSEL GROUNDING

DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. STATE LANDS COMMISSION
2. FLEETSIDE DUCK CLUB
3. CA. DEPT OF FISH & GAME

PLAN VIEW

SCALE 1" = 400'

NORTH SIDE OF SUISUN BAY
SOLANO COUNTY, CA

PROPOSED MARITIME ADMINISTRATION PIER

IN: SUISIN BAY
AT: FOOT OF LAKE HERMAN RD.
COUNTY OF: SOLANO STATE: C
APPLICATION BY: U.S. MARITIME ADMINISTRATION

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Figure 3

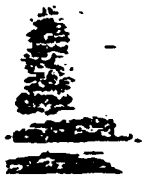
EXHIBIT "D"

STATE OF CALIFORNIA

PETE WILSON, Gov

CALIFORNIA STATE
LANDS COMMISSION

GRAY DAVIS, *Lieutenant Governor*
KATHLEEN CONNELL, *Controller*
RUSSELL S. GOULD, *Director of Finance*



EXECUTIVE OFFIC
100 Howe Avenue, Suite 100-Sou
Sacramento, CA 95[illegible] 82

ROBERT C. HIGHT, *Executive Offic*
(916) 574-1800 Fax (916) 574-18
California Relay Service from TDD Phone 1-800-735-29
from Voice Phone 1-800-735-29

May 9, 1995
File : W 25121
ND 669
SCH: 95052022

NOTICE OF PUBLIC REVIEW
OF A PROPOSED FINDING OF NO SIGNIFICANT IMPACT
IN PLACE OF A NEGATIVE DECLARATION
(Section 15073 CCR)

An Environmental Assessment and proposed Finding of No Significant Impact (FONSI) in place of a Negative Declaration (ND) have been prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et seq., Public R esources Code), the State CEQA Guidelines (Section 150000 et seq., Title 14, California Code of Regulations), and the State Lands Commission Regulations (Section 2901 et seq., Title 2, California Code Regulations) for a project currently being processed by the staff of the State Lands Commission.

An environmental assessment was circulated to State Resource Agencies and federal government agencies by the United States Army Corps of Engineers. The revised environmental assessment and Mitigation Plan is attached for your review. Army Corps staff anticipate issuance of a Finding of No Significant Impact upon conclusion of the CEQA process. Comments should be addressed to the State Lands Commission office shown above with attention to the undersigned. All comments must be received by June 9, 1995.

The Negative Declaration will be considered for adoption at a meeting of the State Lands Commission no earlier than June 9, 1995. You will be notified of the date and location at least 10 days prior to the meeting.

Should you have any questions or need additional information, please call the undersigned at (916) 574-1868.

Judy Brown

JUDY BROWN
Division of Environmental Planning and Management

Attachment

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STATE OF CALIFORNIA

CALIFORNIA STATE
LANDS COMMISSION

GRAY DAVIS, *Lieutenant Governor*
KATHLEEN CONNELL, *Controller*
RUSSELL S. GOULD, *Director of Finance*

EXECUTIVE OFFIC
100 Howe Avenue, Suite 100-Sout
Sacramento, CA 95825-82C

ROBERT C. HIGHT, *Executive Officer*
(916) 574-1800 Fax (916) 574-181
California Relay Service from TDD Phone 1-800-735-292
from Voice Phone 1-800-735-292

PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) IN PLACE OF A NEGATIVE DECLARATION (ND)

File: W 25121
ND 669

Project Title:	Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier Project
Project Proponent:	The Maritime Administration United States Department of Transportation
Project Location:	Suisun Bay, West of the City of Benicia, at the foot of Lake Herman Road, Solano County
Project Description:	Remove an existing wooden pier and floating causeway; reconstruct a 1400' fixed, concrete-pile-supported pier with fingers; add water, electrical and sewer service to the pier; and relocate an existing electrical substation.
Contact Person:	Judy Brown Telephone: (916) 574-1868

This document is prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et seq., Public Resources Code), the State CEQA Guidelines (Section 15000 et seq., Title 14, California Code Regulations), and the State Lands Commission regulations (Section 2901 et seq., California Code Regulations).

Based upon the attached Initial Study, it has been found that:

/ X / mitigation measures included in the project will avoid potentially significant effects.

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ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST - PART II
Form 13.20 (7/82)

File Ref. W 25121
ND 669

I. BACKGROUND INFORMATION

A. Applicant: THE MARITIME ADMINISTRATION
UNITED STATES DEPARTMENT OF TRANSPORTATION
MAR - 743, ROOM 212, 400 7TH ST SW
WASHINGTON DC 20590

B. Checklist Date: 05 / 03 / 95

C. Contact Person: JUDY BROWN

Telephone: (916) 574 - 1868

D. Purpose: TO RECONSTRUCT, EXPAND AND EXTEND AN EXISTING PIER AT THE NORTH SIDE OF SUISUN I
AT THE FOOT OF LAKE HERMAN ROAD.

E. Location: SUISUN BAY AT THE FOOT OF LAKE HERMAN ROAD

F. Description: REMOVE AN EXISTING WOODEN PIER AND FLOATING CAUSEWAY AND CONSTRUCT A 1400' FIX
CONCRETE PILE SUPPORTED PIER WITH FINGERS INTO THE BAY. WATER AND SEWER LINES WOULD BE IN
ON THE PIER. AN ELECTRICAL SUBSTATION ON THE UPLAND WOULD BE RELOCATED.

G. Persons Contacted:

GEOFF CHATFIELD
USACE, SAN FRANCISCO DISTRICT
211 MAIN ST, ROOM 905 B
SAN FRANCISCO CA 94105-1905

BOB BATHA
BCDC
30 VAN NESS AVE, SUITE 2011
SAN FRANCISCO CA 94102

KITTY HAMMER
CITY OF BENICIA PLANNING
250 EAST L ST
BENICIA CA 94510

DAN BUFORD
US FISH AND WILDLIFE SERVICE - WCB
2800 COTTAGE WAY, ROOM E 1803
SACRAMENTO CA 95825

KAITLIN BEAN WCB
CA DEPARTMENT OF FISH AND GAME
PO BOX 47
YOUNTVILLE CA 94599

II. ENVIRONMENTAL IMPACTS. *(Explain all "yes" and "maybe" answers)*

A. Earth. Will the proposal result in:	Yes	Maybe
1. Unstable earth conditions or changes in geologic substructures?	—	—
2. Disruptions, displacements, compaction, or overcovering of the soil? . . . . . CONCRETE PILINGS	X	—
3. Change in topography or ground surface relief features?	—	—
4. The destruction, covering, or modification of any unique geologic or physical features?	—	—
5. Any increase in wind or water erosion of soils, either on or off the site?	—	—
6. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake? (DECREASE IN ACCRETI	X	—
7. Exposure of all people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards? . . .(DUE TO PROJECT'S LOCATION IN BAY AREA)	—	X

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	Yes	Maybe
B. Air. Will the proposal result in:		
1. Substantial air emissions or deterioration of ambient air quality?	—	—
2. The creation of objectional odors?	—	—
3. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	—	—
C. Water. Will the proposal result in:		IMPROVED
1. Changes in the currents, or the course or direction of water movements, in either marine or fresh waters?	—	X
2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	—	—
3. Alterations to the course or flow of flood waters?	—	—
4. Change in the amount of surface water in any water body?	—	—
5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? MINIMAL.	—	X
6. Alteration of the direct on or rate of flow of ground waters?	—	—
7. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	—	—
8. Substantial reduction in the amount of water otherwise available for public water supplies?	—	—
9. Exposure of people or property to water-related hazards such as flooding or tidal waves?	—	—
10. Significant changes in the temperature, flow or chemical content of surface thermal springs?	—	—
D. Plant Life. Will the proposal result in:		
1. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)? INCIDENTAL TO BE MINIMIZED	—	X
2. Reduction of the numbers of any unique, rare or endangered species of plants?	—	X
3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	—	—
4. Reduction in acreage of any agricultural crop?	—	—
E. Animal Life. Will the proposal result in:		
1. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)? TEMP. DISTURB. NET BENEFIT	—	X
2. Reduction of the numbers of any unique, rare or endangered species of animals?	—	X
3. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	—	—
4. Deterioration to existing fish or wildlife habitat? TEMPORARY	—	X
F. Noise. Will the proposal result in:		
1. Increase in existing noise levels?	—	—
2. Exposure of people to severe noise levels?	—	—
G. Light and Glare. Will the proposal result in:		
1. The production of new light or glare?	—	—
H. Land Use. Will the proposal result in:		
1. A substantial alteration of the present or planned land use of an area?	—	—
I. Natural Resources. Will the proposal result in:		
1. Increase in the rate of use of any natural resources?	—	—
2. Substantial depletion of any nonrenewable resources?	—	—

	Yes	Maybe
J. **Risk of Upset.** Does the proposal result in:		
1. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?	—	—
2. Possible interference with emergency response plan or an emergency evacuation plan?	—	—
K. **Population.** Will the proposal result in:		
1. The alteration, distribution, density, or growth rate of the human population of the area?	—	—
L. **Housing.** Will the proposal result in:		
1. Affecting existing housing, or create a demand for additional housing?	—	—
M. **Transportation/Circulation.** Will the proposal result in:		
1. Generation of substantial additional vehicular movement?	—	—
2. Affecting existing parking facilities, or create a demand for new parking?	—	—
3. Substantial impact upon existing transportation systems?	—	—
4. Alterations to present patterns of circulation or movement of people and/or goods?	—	—
5. Alterations to waterborne, rail, or air traffic?	—	—
6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	—	—
N. **Public Services.** Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:		
1. Fire protection?	—	—
2. Police protection?	—	—
3. Schools?	—	—
4. Parks and other recreational facilities?	—	—
5. Maintenance of public facilities, including roads?	—	—
6. Other governmental services?	—	—
O. **Energy.** Will the proposal result in:		
1. Use of substantial amounts of fuel or energy?	—	—
2. Substantial increase in demand upon existing sources of energy, or require the development of new sources?	—	—
P. **Utilities.** Will the proposal result in a need for new systems, or substantial alterations to the following utilities:		
1. Power or natural gas?	—	—
2. Communication systems?	—	—
3. Water? CONNECTING LINES.	X	—
4. Sewer or septic tanks? CONNECTING LINES	X	—
5. Storm water drainage?	—	—
6. Solid waste and disposal?	—	—
Q. **Human Health.** Will the proposal result in:		
1. Creation of any health hazard or potential health hazard (excluding mental health)?	—	—
2. Exposure of people to potential heath hazards?	—	—
R. **Aesthetics.** Will the proposal result in:		
1. The obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	—	—

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	Yes	Maybe
S. **Recreation.** Will the proposal result in:		
1. An impact upon the quality or quantity of existing recreational opportunities?	—	—
T. **Cultural Resources**		
1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site?	—	—
2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	—	—
3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	—	—
4. Will the proposal restrict existing religious or sacred uses within the potential impact area?	—	—
U. **Mandatory Findings of Significance.**		
1. Does the project have the potential to degrade the quality of the environment, reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	—	—
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	—	—
3. Does the project have impacts which are individually limited, but cumulatively considerable?	—	—
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	—	—

III. DISCUSSION OF ENVIRONMENTAL EVALUATION *(See Comments Attached)*

PLEASE REFER TO THE ATTACHED ENVIRONMENTAL ASSESSMENT AND ATTACHMENTS THERETO.

IV. PRELIMINARY DETERMINATION

On the basis of this initial evaluation:

— I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION wil prepared.

_X I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGAT DECLARATION will be prepared.

— I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPOR required.

Date: 05 / 08 / 95

Judy Brown

For the State Lands Commission
JUDY BROWN

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REVISED DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED MODIFICATIONS TO THE MARITIME ADMINISTRATION'S SUISUN BAY RESERVE FLEET MAINTENANCE FACILITY PIER SOLONO COUNTY, CALIFORNIA

Prepared For:

The Maritime Administration
United States Department of Transportation
MAR-743, Room 212
400 7th Street, SW
Washington, D.C. 20590

Prepared By:

United States Army Corps of Engineers
San Francisco District
211 Main Street
San Francisco, California 94105-1905

1.0 INTRODUCTION

Pursuant to the National Environmental Policy Act (NEPA) of 1969, this revised Environmental Assessment (EA) has been prepared by the United States Army Corps of Engineers (COE) San Francisco District. The EA identifies any possible direct, indirect, and/or cumulative significant impacts to the quality of the human environment resulting from the construction of a proposed pier for the Suisun Bay National Defense Reserve Fleet (Reserve Fleet). The facility is maintained by the United States Maritime Administration and is located at General Anchorage Number 26 in northwest Suisun Bay, northeast of the city of Benicia in Solano County (Figures 1 and 2).

Established following World War II, the 60 to 70 vessels, sometimes referred to as the "Mothball Fleet", are maintained in a state of readiness by the Maritime Administration (MA) in the event of a national emergency or other national requirement. The existing facility consists of a parking lot and floating causeway with attached maintenance barges and an administrative vessel (APL) located at the east end of Lake Herman Road.

The project site is bordered to the west and north by the privately-owned wetlands of Suisun Marsh, which are managed for waterfowl hunting. Suisun Marsh is the largest contiguous marsh in the San Francisco Bay Estuary, and is managed for its recreational and wildlife habitat resources. To the northeast, and adjacent to the Reserve Fleet site, the California Department of Water Resources (DWR) owns and operates a water management outlet structure that releases water from the adjacent Goodyear Slough.

Suisun Bay, as an estuary, receives freshets from the Sacramento and San Joaquin Rivers to the east; Montezuma Slough, Suisun Slough, and Goodyear Slough to the north; Sulfur Springs Creek and Pacheco Creek to the east. Seawater enters the estuary through Carquinez Strait to the west.

BioSystems Analysis, Inc., under contract to the U.S. Army Corps of Engineers (COE), produced an EA analyzing and investigating the potential effects which would result should the proposal be implemented.

The information from the above EA was assimilated into An Environmental Assessment of the Proposed Modifications to the Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier, February 1994 by the COE and is incorporated by reference into this revised EA. Due to subsequent project design modifications which reduced the impacts associated with the proposed project (i.e., reducing the length of the pier to the minimum length required based on shoaling and sedimentation rates), it became necessary to change the project description and revise

the environmental impact analysis. Therefore, the purpose for this revised EA is to incorporate and analyze these changes.

The salient topics identified during the scoping phase for this proposal and discussed within this revised EA that have the possibility of affecting the human environment are: Habitat Resources and Endangered/Threatened Species.

2.0 PROJECT DESCRIPTION AND ALTERNATIVES

2.1 Reasons for Proposed Action

Shoaling has been a problem at the Reserve Fleet facility since its establishment. Besides interfering with fleet operations (i.e., grounding, engine fouling), shoaling is costly to control. The siltation has been extensive to the point that safe access to and berthing of the Reserve Fleet's tugs, crane barge and service craft are is difficult at best.

In order to alleviate problems due to continuing sedimentation, facilities have been moved. At its inception, the Reserve Fleet maintained several hundred vessels rafted together close to shore. In 1949, half of each row of vessels was moved off shore to deeper water because of increasing shoreline accretion. By placing the Reserve Fleet closer to the middle of the natural channel, the effects of shoaling on the fleet vessels have been reduced or eliminated.

In addition to the Reserve Fleet vessels, a large barge (APL) is also located at the site from which the administration and maintenance activities for the fleet are directed. This facility houses administrative offices and provides docking facilities for the work vessels used to maintain and repair the Reserve Fleet vessels. During the early years of the Fleet, the APL was connected to the shoreline by a walkway on wooden piers. In 1961, the wooden walkway was replaced by a floating causeway to accommodate the semi-tractor trailers that deliver supplies and parts to the Reserve Fleet. The barge itself was moved to deeper water in 1976 and again in 1980.

In addition to moving the barge away from the shoreline as a method of alleviating the effects of shoaling between the barge and the shoreline, dredging has also been employed to maintain the necessary operating depths. The first maintenance dredging performed at the Reserve Fleet site removed 50,000 cubic yards in 1973. More recently, dredging of 83,000 cubic yards was required in 1986.

In their Letter of Agreement for Consistency Determination No. CN 8-85, the San Francisco Bay Conservation and Development Commission (BCDC) advised the Maritime Administration (MA) to investigate other alternatives to dredging that would not result in a continuous disturbance of habitat (i.e., brackish marsh and mud flat). The Commission believed that hydrological studies of the site should be conducted by the MA to determine the best long-range solution to the siltation problem. This letter also stated that the Commission would need to consider the results of the aforesaid study and that the MA's efforts to implement that study's recommendations would be an important factor in the Commission's findings for future consistency determinations.

Responding to the Commission's requests, the MA, through the Corps, produced two reports studying and developing approaches to lessen sedimentation impacts on the facility.

The first study conducted by Robert C. MacArthur, Ph.D. entitled, Investigation of Sediment Accumulation Problems at the Suisun Bay National Defense Reserve Fleet Administration Barge, dated February 27, 1987, identified and studied five engineering alternatives to alleviate or reduce the shoaling problem: periodic dredging; a training wall which would extend out from the shoreline accompanied with reduced periodic dredging; retaining walls parallel to the shoreline and accompanied with limited periodic dredging; an enclosed marina-like basin accompanied with periodic dredging; and a pile-supported pier which would not require dredging. Of the five alternatives, the pier was the most environmentally sound and most cost effective.

A second study was commissioned entitled, Review of Reports on Sedimentation at the Federal Maritime Administration Facility in Suisun Bay and Recommendations for Further Work, dated January 20, 1992 by Ray B. Krone and Associates. This study documented a three to six foot accumulation of sediment along the northwest shore of the Suisun Bay between 1956 and 1990. Krone attributed this change in deposition primarily to the migration of the mixing zone into Suisun Bay, resulting from reduced delta outflow and recent drought.

2.2 The Proposed Action

The proposed project has the following major features (Figures 3, 4, and 5):

(1) a concrete pile-supported pier with a concrete pile-supported pier head;
(2) two mooring dolphins (pile clusters) for the APL vessel;
(3) a series of five floating finger docks connected by a floating pier;
(4) utility lines for water and sewer;

(5) construction of a new electrical substation and associated electrical system
(6) demolition of the existing dilapidated wooden pier, causeway and electrical substation and associated power poles.

The new pier would extend 1,400 feet into Suisun Bay from the existing parking lot. This would locate the APL and associated work vessels closer to the Reserve Fleet and at a point in the channel where higher velocities and greater depth eliminate the effects of shoaling. The pier would be off the water surface, unlike the existing floating causeway which, the studies show, contributes to sediment accretion. Using precast concrete piles and caps with a concrete deck, the pier and associated finger docks are designed to support heavy loads as well as new water, sewer, and electrical lines. The APL would be moored at the end of the pier and the supporting work vessels would be berthed at floating finger docks extending from the sides of the pier.

The floating docks would be prefabricated units, floated into position and anchored with pilings. Near the completion of the project, the APL would be transferred to new mooring dolphins installed outboard of the permanent pier, and the existing dolphins anchoring the APL would be removed. Associated work vessels, including three tug boats, one crane barge, and one drydock barge, would be relocated to the finger docks and adjacent to the APL.

Under the proposed plan, water and sewage lines will be installed along the facility access road. These lines will be extended 3,530 feet (1,400 feet on the pier and 2,130 feet on land) and will connect the APL barge with existing stubs at Lake Herman Road. To maintain utility separation as required by the city of Benicia, the sewer line will run along the east side and the water line will run along the west side. Lines will be buried within the existing right-of-way at a minimum depth of 2 feet. Currently, water and sewage are stored on barges and on- and off-loaded at Mare Island Naval Station. The proposed project would modernize the water and waste water infrastructure of the facility.

A new platform will be built on the existing parking lot to accommodate the electrical substation. The existing power lines will be installed underground from the security gate at the parking lot entrance to the new electrical platform. From the platform to the APL, the lines will be removed from existing poles and placed in the utility conduit running parallel to the water and sewer lines on the new pier. For distributing power to the ship rows, three one-inch cables would be wrapped together into one conduit, and laid on the brackish marsh, and connected to existing power poles located east and west of the new substation, approximately 600 feet.

Construction operations for the new pier will be staged both on land and on water. Two pile-driving rigs will be used. One will be positioned in the parking lot, while the second, along with supply barges, will be floated into the site. After the pier is built, the existing causeway will be demolished.

2.3 Alternatives

Other than the proposed action, three alternatives have been evaluated: the no project alternative (dredging); an enclosed marina; and land-based operations.

No Project (Dredging) - The no action alternative would involve leaving the APL, the existing pier, the dilapidated electrical substation and walkway, and existing utility lines unchanged. If the proposed actions are not taken, sediment accretion and shoaling will continue to hamper fleet maintenance, and on- and off- loading of water and sewage to the APL will continue to not only be inefficient but also create the possibility of future accidental effluent spillage into the bay and potentially creating water quality problems. Furthermore, continuous cyclical dredging, with its attendant disposal problems, will be required every few years. The long-term impacts associated with dredging and disposal would be greater than the implementation of a structural solution. Also, it was determined to be politically infeasible considering the BCDC's request to explore alternative solutions to dredging as outlined in their Letter of Agreement CN 8-85.

Enclosure- Creating a marina which would surround the existing barge and causeway was examined in detail. However, it was rendered politically and environmentally infeasible since it would create additional direct impacts to the surrounding wetlands, mudflats and open water habitats via increased fill; incur greater construction and maintenance costs; and require continuous dredging.

Land-Based Operations- Another option that was analyzed was to remove all water based operations and relocate the facility into a nearby industrial park along Lake Herman Road. However, this alternative would decentralize a water dependant operation onto land which would result in increased travel costs to maintain the ships. The Maritime Administration needs to have direct access in order to operate efficiently as one cohesive unit.

Since the above alternatives would create greater environmental impacts upon the human environment and/or require continuous dredging, the pier solution was chosen as the proposed action because it represents the least damaging alternative to the human environment and is most effective toward alleviating shoaling impacts.

3.0 IMPACT ON HABITAT RESOURCES

3.1 Setting. Two types of jurisdictional wetlands, as defined in the 404(b)(1) Guidelines of the Clean Water Act, surround the project site: northern coastal salt marsh and coastal brackish marsh. Because the area exists above the high tide line, the Corps has determined that the ruderal/disturbed habitat landward or upgradient of northern coastal salt marsh is not considered jurisdictional wetland habitat. Although this area supports some wetland indicator plant species such as saltgrass, Parish's glasswort, marsh gumplant, prickly lettuce, and poverty weed, it is largely dominated by weedy, non-native upland plants (see Section 3.2.5.3). Site soils have been mapped as Altamont clay, 2-9 percent slopes (USDA, SCS 1977), a non-hydric soil mapping unit (USDA, SCS 1992).

Tables A and B indicate the approximate site coverage for each project component for the existing condition and the proposed project, respectively. The proposed project would directly affect four distinct habitats. These are ruderal, brackish marsh, mud flat and open-shallow water habitats.

TABLE A EXISTING CONDITIONS (FT^2)

PROJECT FEATURE	RUDERAL	BRACKISH MARSH	MUD FLAT	OPEN BAY	TOTAL
CAUSEWAY	0	8,487	3,887	1,758	14,132
APL	0	0	0	12,689	12,689
MOORING DOLPHINS	0	60	60	455	575
FLOATING DOCKS AND BARGES	0	0	0	16,500	16,500
UTILITY LINES	0	0	0	0	0
ELECTRICAL SUBSTATION	0	3,615	0	0	3,615
TOTAL	0	11,162	3,947	31,402	46,511

TABLE B PROPOSED PROJECT (FT^2)

PROJECT FEATURE	RUDERAL	BRACKISH MARSH	MUD FLAT	OPEN BAY	TOTAL
PIER	0	7,011	3,211	22,878	33,100
APL	0	0	0	12,689	12,689
MOORING DOLPHINS	0	0	0	148	148
FLOATING DOCKS AND BARGES	0	0	0	6,680	6,680
UTILITY LINES	10,920	304	0	0	11,224
ELECTRICAL SUBSTATION	0	0	0	0	0
TOTAL	10,920	7,315	3,211	42,395	63,841

3.1 Impact. Impacts can be divided into two separate categories: Long-term and temporary short-term. Tables C and D compare the net differences for habitat coverage/disturbance and the temporary construction related impacts, respectfully.

In Table C, increased aerial coverage is represented with a plus (+) symbol; decreased coverage with a minus (-); and no net changes are shaded in gray. For example, since the APL barge component does not change under the without and with project conditions, its area is not added to the net change. However, when the other project components are considered, there is a net increase of 10,993 square feet within the open water habitat and a net increase of 10,920 square feet of ruderal habitat which would be disturbed from placement of the utility lines. However, there is a net decrease of existing structures within the brackish marsh and mud flat habitats of approximately 3,847 square feet and 736 square feet, respectively. This would constitute a beneficial impact by gaining an increase in area for these habitat types.

Table D approximates the area of temporary disturbance caused by removing the existing causeway from the new pier to be 13,578 square feet (this assumes that the width required for demolition purposes to be approximately 31 feet). There would be approximately 8,339 square feet and 5,239 square feet of brackish marsh and mud flat adversely affected, respectively. This impact would be short-term and temporary since natural revegetation would most likely occur within a few years.

The new pier will be constructed over the existing walkway, which runs parallel to the existing causeway. Construction operations will be conducted from both the parking lot and from a floating barge, with construction staging placed on the parking lot. Therefore, the construction operation is not expected to cause any additional, incidental discharges of dredged or fill material into jurisdiction waters.

Relocation of the electrical substation is not expected to impact any wetlands or navigable waters since the substation will be relocated onto the pier or the parking lot. Therefore, impacts effecting the above habitats will be avoided.

TABLE C NET AREA OF IMPACT (FT^2)

PROJECT FEATURE	RUDERAL	BRACKISH MARSH	MUD FLAT	OPEN BAY	NET CHANGE
PIER/ CAUSEWAY	0	-1,476	-646	+21,120	+18,968
APL	0	0	0	12,689	0
MOORING DOLPHINS	0	-60	-60	-307	-427
FLOATING DOCKS AND BARGES	0	0	0	-9,820	-9,820
UTILITY LINES	10,920	304	0	0	+11,224
ELECTRICAL SUBSTATION	0	-2,615	0	0	-2,615
TOTAL	10,920	-3,847	-736	+10,993	+17,330

*Gray shading indicates no change.

TABLE D TEMPORARY CONSTRUCTION IMPACT AREA (FT^2)

PROJECT FEATURE	RUDERAL	BRACKISH MARSH	MUD FLATS	OPEN BAY	TOTAL
CONSTRUCTION PATHWAY	0	8,339	5,239	0	13,578

**Disturbance width (50 feet -19 feet= 31 feet).

4.0 ENDANGERED/THREATENED SPECIES COORDINATION

4.1 Setting. In March 1994, the Maritime Administration entered into formal consultation (Section 7 of the Endangered Species Act) with both the United States Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) regarding to the endangered California clapper rail (Rallus longirostris obsoletus), the threatened Delta smelt (Hypomesus transpacificus), the proposed for listing Sacramento splittail (Pogonichthys macrolepidotus); and the endangered Winter run chinook salmon (Oncorhynchus tshawytscha), respectively.

The NMFS, in their letter dated April 25, 1994, indicated Section 7 formal consultation is concluded with no jeopardy since the activities are limited to the installation of concrete pilings and that a new pier should reduce the long-term impacts to the salmon since the need for periodic dredging would be eliminated.

As for the Delta smelt, Sacramento splittail, and California clapper rail, all managed by the FWS, Section 7 Formal Consultation has been completed and the COE received the Service's Biological Opinion on August 17, 1994. The COE submitted the Biological Assessment to the Service for the Maritime Administration on March 1, 1994.

The FWS's Biological Opinion concluded with a non-jeopardy opinion for the clapper rail, delta smelt and Sacramento splittail. Critical habitat for the clapper rail and Sacramento splittail has not been designated; therefore, none will be adversely modified or destroyed. Critical habitat for the delta smelt has been proposed but it is not likely to be adversely modified or destroyed.

The FWS established the following reasonable and prudent measures to minimize the impact of incidental take. The measures below are non-discretionary and must be implemented by the Maritime Administration:

1. The potential for harassment, harm (including habitat modification), or mortality to California clapper rails shall be minimized.

2. Measures shall be taken to offset the temporary loss of California clapper rail and delta smelt/Sacramento splittail habitat.

3. Measures shall be taken to minimize mobilization of sediments within and outside the project area.

To be exempt from the prohibitions of Section 9 of the Endangered Species Act, the following terms and conditions, which implement the reasonable and prudent measures described above, must

be complied with, and included as special conditions in any permit granted by the Department of the Army for this project:

1. Pier construction and demolition activities on the landward side of the Administration Barge (at its current location) shall not occur during the period from February through August within any given year to avoid possible disruption of nesting activities by rails.

2.a. The applicant shall prepare and implement a detailed California clapper rail habitat restoration plan which compensates for the temporary loss of rail habitat associated with the proposed action. The plan shall describe all measures to be taken to restore rail habitat conditions within the footprint of the old pier. Suitable compensatory mitigation for the temporal loss of this habitat (12,450 square feet) shall be incorporated into the plan. The plan shall be submitted to the Service and Corps for review and approval within six months of commencement of the construction work. An approved rail habitat restoration plan shall be implemented by December 31, 1995.

2.b. The applicant shall survey for delta smelt and Sacramento splittail spawning and rearing habitat and replace losses at a 3:1 in-kind ratio and maintained in perpetuity. The 3:1 replacement ratio results from lack of full restoration of lost habitat for a number of years and with replaced habitat potentially having lesser value than that lost. A plan for this replacement and maintenance shall be submitted to the Service and Corps for review and approval prior to construction or demolition work. The time frame for replacement shall be the same as that contained within the rail plan for approval by the Service within 6 months of commencement of pier construction work.

3. A plan shall be submitted to the Service before construction or demolition activities begin that details practices that will be used to minimize mobilization of sediments within or outside of the construction area.

4.2 Impact. The construction period is proposed to start in March and will last approximately ten months, into December. Although the majority of high impact construction will have been completed beyond the APL or between September and February on the landward side of the APL, (the time both the Delta smelt and the Sacramento splittail, as well as the California clapper rail would be present at the site), there will be unavoidable impacts on these species. Placement of the pilings landward of the APL will occur in the September to January window to minimize turbidity related

impacts to the fish. Placement of the pilings outboard of the APL will implement the mitigation plan developed to meet F&WS condition No. 3 to minimize turbidity related impacts to fish.

As one of the last steps in the construction process, the existing causeway which will be used as a staging area for constructing the new pier, will be removed.

Approximately 8,339 square feet of brackish marsh and 5,239 square feet of mudflat will be temporarily and unavoidably impacted (See Table D, Temporary Construction Impact Area). The turbidity impact created within the mud flat and brackish marsh can be avoided if the land-based equipment removes that portion of the causeway during low tides.

The brackish marsh vegetation would be temporarily disturbed. However, this area would revegetate naturally over a period of a few years. It may become necessary to install floating aprons around the causeway removal area in order to impound resuspended sediments between the months of February through June to protect the fish species. As far as the California clapper rail is concerned, this would be an unavoidable short-term adverse impact.

The California clapper rail (Rallus longirostris obsoletus) is listed as endangered both federally and by the state.

To avoid the potential for incidental "take" of this endangered species ("take" includes not only direct harm but indirect impacts such as disturbance to nesting habitat), the USFWS recommends that all construction take place completely outside the nesting season of February 1 to August 31. Rails sometimes have two nesting cycles per year (called double-clutching) and birds from the second clutch may fledge as late as mid-September (G. Tekekawa, USFWS, pers. comm. 1993).

Pier construction has the potential to directly effect nesting and foraging California clapper rails. Sewer and water line construction could temporarily disturb rails using the diked salt marsh and upper marsh sloughs for foraging or escape cover during high tides. These birds are not highly mobile; they do not often fly far and rely on cover for escape from threats more than flight.

Pier construction and installation of utility lines will temporarily disturb wildlife because of increased human presence and noise. These impacts will be greatest during breeding periods. Human impact is minimal along Lake Herman Road but moderately high around the existing facility. In some areas, rails habituate to moderate amounts of disturbance (USFWS 1984), yet their reaction to specific decibel levels from construction equipment and human activity is still regarded as an unknown (Jules Evans, Avocet Research Associates, pers. comm. May 1994).

Increased vehicular traffic may result in the death of endangered species from collisions, but this impact will return to existing levels once the project is completed. Because utility lines alongside the entrance road will be installed in previously-disturbed ruderal habitat, this activity is not expected to result in a significant habitat loss. Revegetating the disturbed areas of Lake Herman Road with native halophytic plants (e.g., pickleweed) will ensure that habitat loss is temporary.

The two 600 foot cables to be placed over the brackish marsh habitat would create a temporary insignificant impact since this will be performed using minimally invasive techniques to lay the cable. Each of the three inch diameter cables will be attached to a rope which would be snaked through the marsh to a boat. By hauling in the smaller line the cable will be fed through the marsh, disrupting a negligible amount of the area.

It should be noted that the adverse impacts to the California clapper rail are primarily short-term due to the 10-month construction period and the temporary loss of 8,339 square feet of brackish marsh for a period of about two years.

The long-term impacts to the California clapper rail would most likely constitute an overall beneficial impact. This would be accomplished by opening up an additional 3,847 square feet within their primary habitat, the brackish marsh (See Table C, Net Area Of Impact) by removing the dilapidated electrical substation and its walkway, as well as the existing causeway. Also, the existing causeway is stuck in the mud and presents a barrier for the birds migration. Since the pier would be elevated, California clapper rails could not only migrate easier but also could seek cover under the pier to avoid predation.

5.0 IMPACTS AND MITIGATION MEASURES

Summarized below are the mitigation measures which are relevant to each of the environmental factors considered in the preceding sections.

5.1 Factors Requiring Mitigation

Habitat Resources: Temporary disturbance caused by removing the existing causeway from the new pier is approximately 13,578 square feet. This represents approximately 8,339 square feet and 5,239 square feet of brackish marsh and mud flat adversely affected, respectively. This impact would be short-term and temporary since revegetation would most likely occur within a few years naturally. However, endemic wetland plant species could either be seeded or plugged within these areas in order to hasten recovery.

Endangered/Threatened Species: The FWS established the following reasonable and prudent measures to minimize the impact of incidental take. The measures below are non-discretionary and must be implemented by the Maritime Administration:

1. The potential for harassment, harm (including habitat modification), or mortality to California clapper rails shall be minimized. This has been incorporated into the design phase for the proposed project and the proposal already requests the minimal area needed for construction/operations.

2. Measures shall be taken to offset the temporary loss of California clapper rail and delta smelt/Sacramento splittail habitat. A predator program could be devised and implemented for this portion of the Suisun Bay such as the one that exists for the San Francisco Bay Wildlife Refuge for the clapper rail. In addition, construction activity will occur between September and February in order to avoid the clapper rail nesting season and will refrain from waterborne construction activity between the months of mid-December to July in order to avoid delta smelt and Sacramento splittail spawning season.

3. Measures shall be taken to minimize mobilization of sediments within and outside the project area. Fish windows will be observed and if necessary sediment curtains could be implemented in order to contain short-term temporary turbidity.

6.0 COORDINATION

The following coordination is being pursued in connection with this project:

6.1 Consistency Determination with the San Francisco Bay Plan

Pursuant to the federal Coastal Zone Management Act, the San Francisco Bay Conservation and Development Commission (BCDC) has jurisdiction over matters affecting the on and off shore areas within the Suisun Bay. A consistency determination is being prepared for BCDC requesting their concurrence. The proposed project must be consistent to the maximum extent practicable with the State's approved management program, in this case the San Francisco Bay Plan, the Suisun Marsh Protection Plan, the Suisun Marsh Protection Program and the Solono County Policies and Regulations Governing the Suisun Marsh.

6.2 Section 10 of the Rivers and Harbors Act and Section 404(b)(1) of the Clean Water Act with the Corps of Engineers

Pursuant to both the Rivers and Harbors Act and the Clean Water Act, the Maritime Administration has applied for a permit from the United States Army Corps of Engineers, Regulatory Branch, which has the responsibility for the implementation of the provisions promulgated within these laws. This revised EA will be submitted, with the application, to the Corp's San Francisco District Regulatory Branch for the Maritime Administration and incorporated into a public notice for public review, after which a Finding of no Significant Impact (FONSI) will be signed by the District Engineer depending on public response.

6.3 Involved Agencies

Preparation of this revised Environmental Assessment has considered views from the Unites States Fish and Wildlife and National Marine Fisheries Services, the San Francisco District Regulatory Branch United States Army Corps of Engineers, California Department of Fish and Game, California Department of Water Resources, the San Francisco Bay Conservation and Development Commission, the San Francisco Bay Regional Water Quality Control Board, the Suisun Bay Reserve Fleet, the Maritime Administration United States Department of Transportation, the County of Solono, the City of Benicia, interested individuals, and the public. Concerns and comments from government agencies, groups or individuals have been incorporated during the coordination process and will be included from Corps Regulatory Branch public review.

7.0 CONCLUSION

Since the other water-based alternatives would all require maintenance dredging every few years, they would disturb more bottom sediments over a longer time period, creating greater impacts than the pier expansion alternative. The alternative land-based operation would still require water access, of which there is none readily available in close proximity to the fleet. Once the pier is completed, its cover and shading effects are expected to be beneficial to fish (see discussion concerning the incremental loss of open water habitat under Section 4.0) and the California clapper rail.

Based upon the findings and mitigation requirements identified in this revised EA, it is concluded that there will not be a significant effect on the quality of the human environment and an Environmental Impact Statement (EIS) will not need to be prepared. Therefore, a Finding of No Significant Impact (FONSI) will be prepared. However, prior to construction, it will be necessary to:

1. Obtain a permit from the San Francisco Army Corps of Engineers Regulatory Branch in order to comply with the regulations promulgated in Section 10 of the Rivers and Harbors Act and Section 404(b)(1) of the Clean Water Act;

2. Obtain concurrence with the San Francisco Bay Conservation and Development Commission pursuant to the regulations promulgated within the Coastal Zone Management Act; and

3. Obtain approval from the United States Department of Interior Fish and Wildlife Service for the mitigation plan for the California clapper rail, Sacramento splittail and delta smelt pursuant to the regulations promulgated within the Endangered Species Act.

8.0 INFORMATION SOURCES

8.1 References

1. United States Army Corps of Engineers, An Environmental Assessment of the Proposed Modifications to the Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier, February 1994.

2. BioSystems, Inc., An Environmental assessment of the Proposed Modifications to the Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier, January 1994.

3. San Francisco Bay Conservation and Development Commission, Letter of Agreement for Consistency Determination No. CN 8-85, dated December 1985.

4. Robert C. MacArthur, Ph.D., Investigation of Sediment Accumulation Problems at the Suisun Bay National Defense Reserve Fleet Administration Barge, dated February 27, 1987.

5. Ray B. Krone and Associates, Review of Reports on Sedimentation at the Federal Maritime Administration Facility in Suisun Bay and Recommendations for Further Work, dated January 20, 1992.

6. San Francisco Bay Conservation and Development Commission, The Suisun Marsh Management Program, dated September 1980.

7. San Francisco Bay Conservation and Development Commission, The Suisun Marsh Local Protection Program, dated March 1980.

8. Solono County Planning Department, Solono County Policies and Regulations Governing the Suisun Marsh, dated December 1982.

9. United States Department of the Interior, Fish and Wildlife Service, Endangered Species Formal Consultation on the Proposed Modifications to the Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier, dated August 17, 1994.

10. United States Department of the Interior, Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge, San Francisco Bay National Wildlife Refuge Predator Management Plan and Final Environmental Assessment, dated March 1991.

11. Ogden Environmental and Energy Services, Aquatic Vegetation Survey, Maritime Administration, Suisun Bay, dated August 1994.

8.2 Agencies, Organizations and Persons Contacted

12. Brenda Grewell, California Department of Water Resources.

13. Joe Pecoraro, Suisun Bay Reserve Fleet, Maritime Administration, United States Department of Transportation.

14. Dennis Becker, Grizzly Island Wildlife Preserve, California Department of Fish and Game.

15. Chris Mobley, National Marine Fisheries Service, United States Department of Commerce.

16. Gary Matlock, National Marine Fisheries Service, United States Department of Commerce.

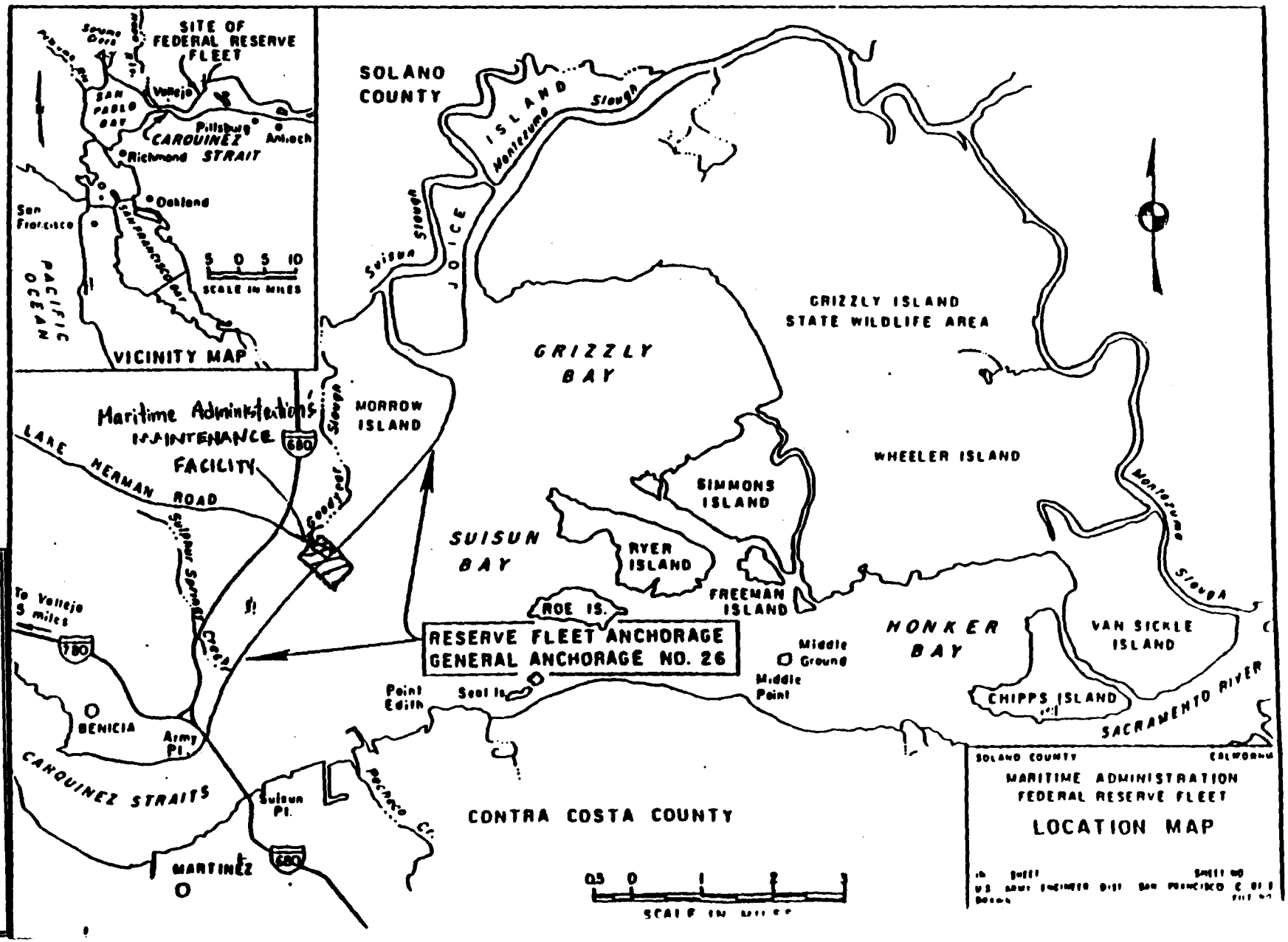
17. Jules Evens Ph.D., Avovet Research Associates.

18. Dave Ammerman, Army Corps of Engineers, San Francisco District Regulatory Branch, United States Department of Defense.

19. Karen Miller, Fish and Wildlife Service, United States Department of the Interior.

20. Bob Pine, Fish and Wildlife Service, United States Department of the Interior.

21. Joy Albertson, Fish and Wildlife Service, United States Department of the Interior..



MINUTE PAGE 13316

CALENDAR PAGE 437

USGS
QUAD:
Fort Chicago

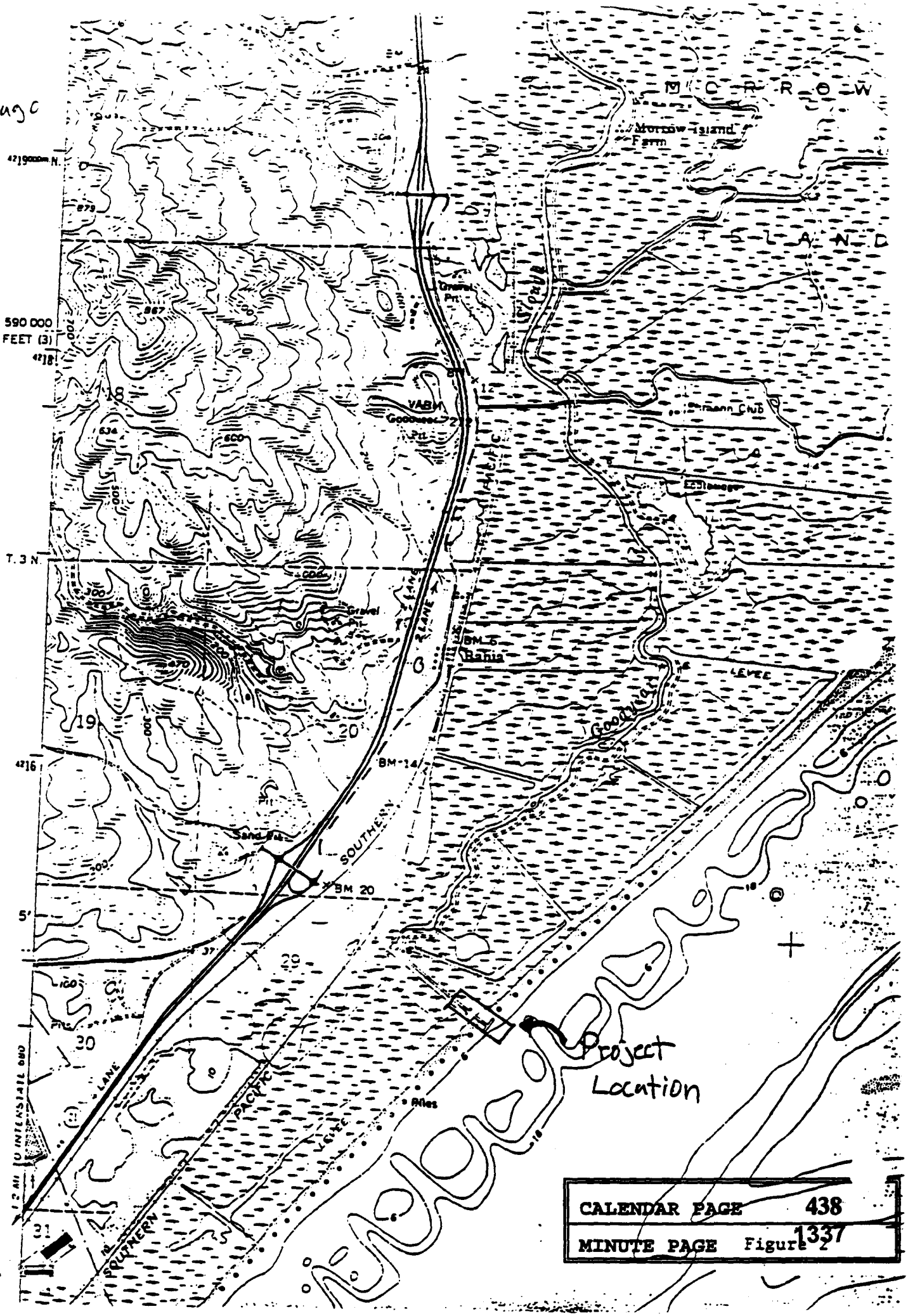


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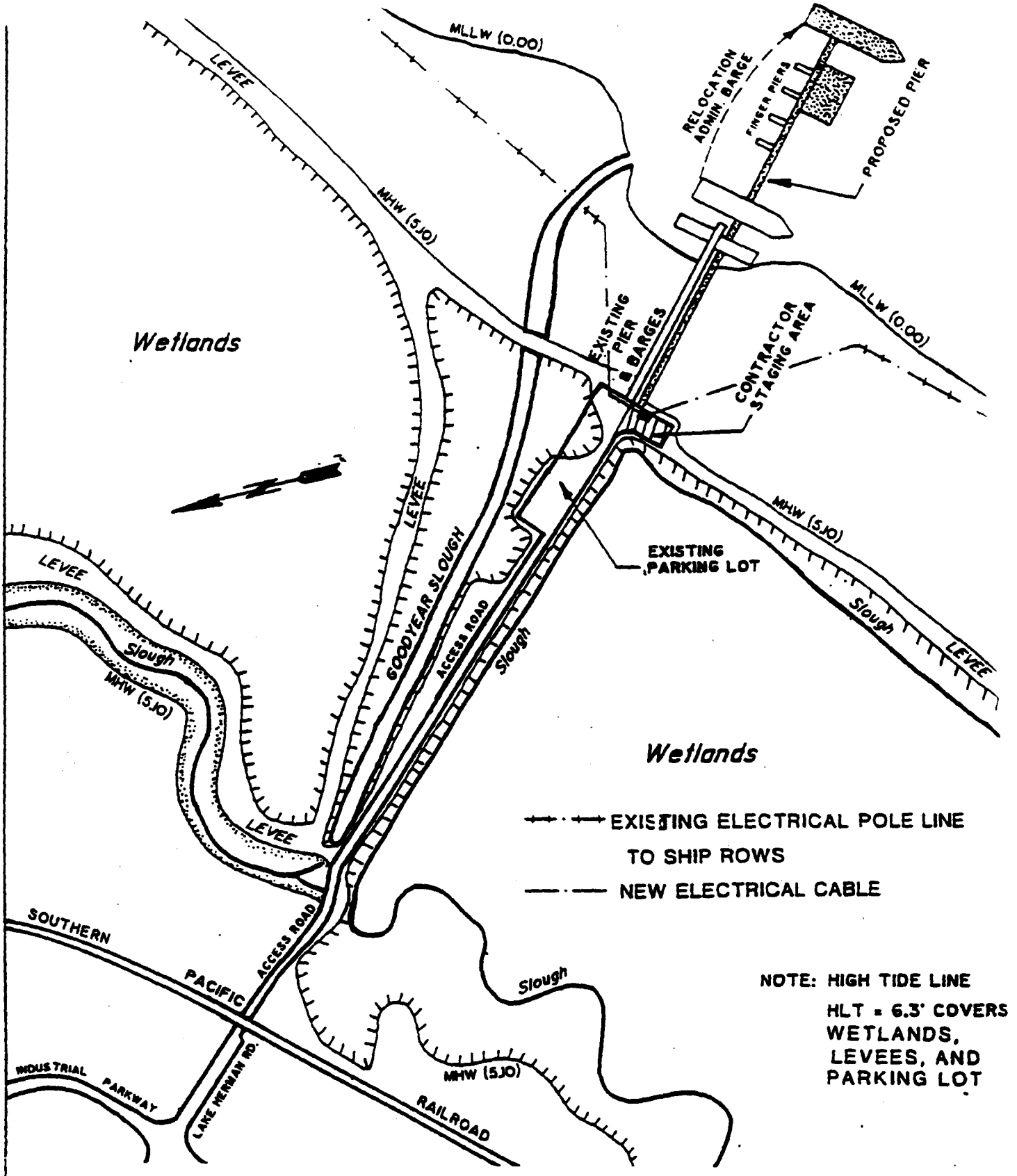
Figure 2



PURPOSE: ALLEVIATE SHOALING PROBLEM, PREVENT VESSEL GROUNDING

DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. STATE LANDS COMMISSION
2. FLEETSIDE DUCK CLUB
3. CA. DEPT OF FISH & GAME

PLAN VIEW

SCALE 1" = 400'

NORTH SIDE OF SUISUN BAY
SOLANO COUNTY, CA

PROPOSED MARITIME ADMINISTRATION PIER

IN: SUISIN BAY

AT: FOOT OF LAKE HERMAN RD.

COUNTY OF SOLANO STATE

APPLICATION BY: U.S. MARITIME ADMINISTRATION

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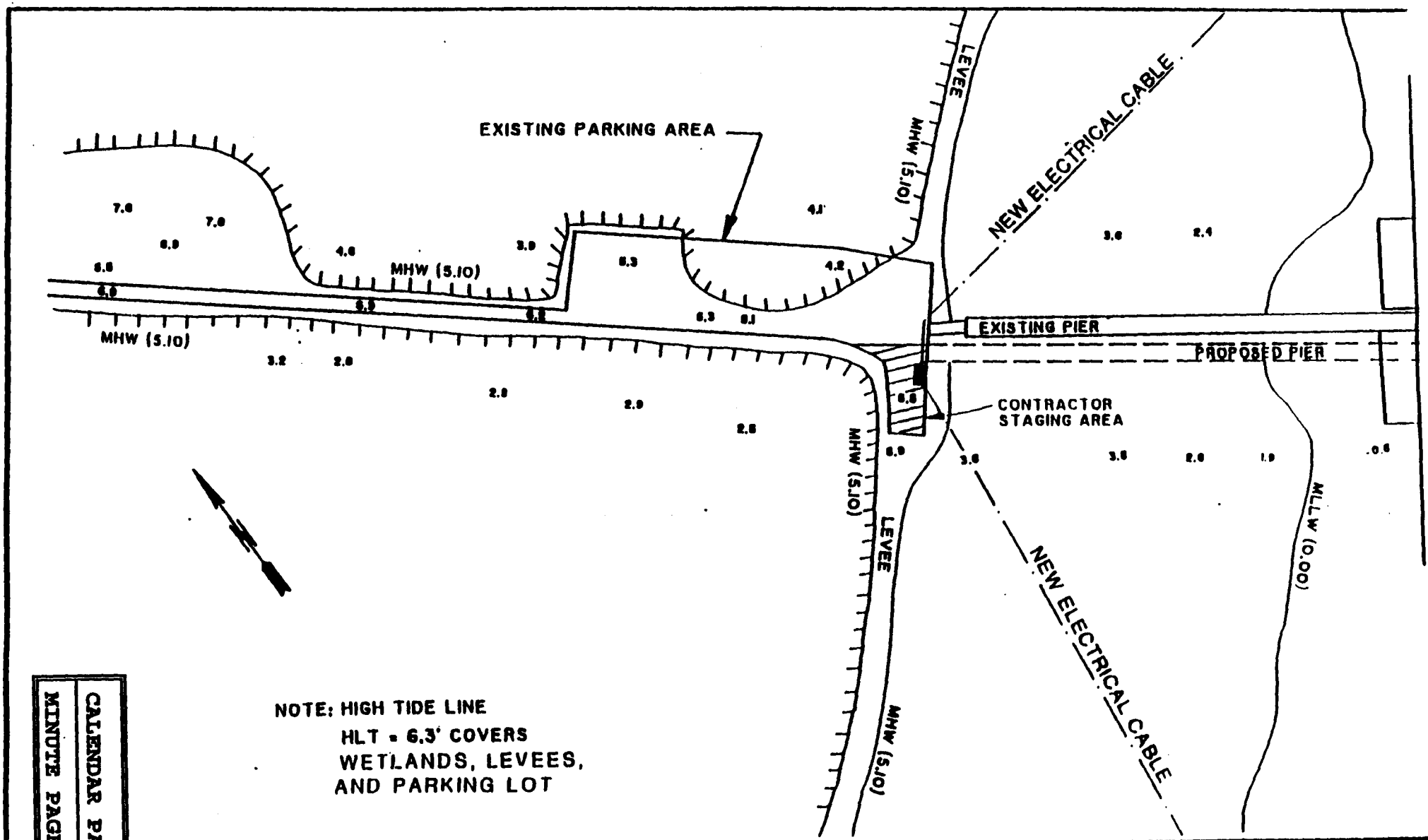
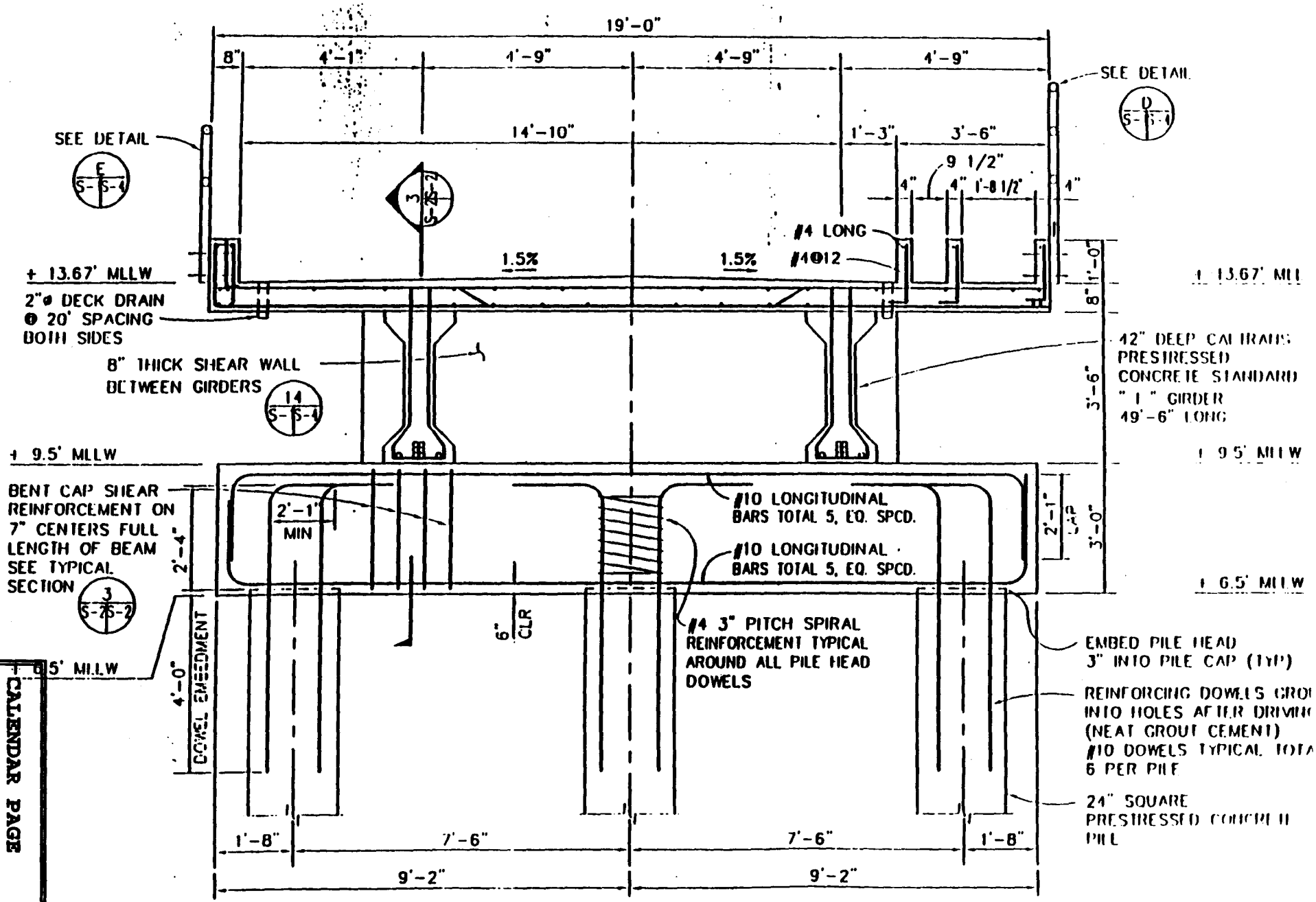
Figure 3



NOTE: HIGH TIDE LINE
HLT = 6.3' COVERS
WETLANDS, LEVEES,
AND PARKING LOT

PURPOSE: ALLEVIATE SHOALING PROBLEM, PREVENT VESSEL GROUNDING DATUM: MLLW ADJACENT PROPERTY OWNERS: 1. STATE LANDS COMMISSION 2. FLEETSIDE DUCK CLUB 3. CA. DEPT OF FISH & GAME	PLAN VIEW SCALE 1" = 160' NORTH SIDE OF SUISUN BAY SOLANO COUNTY, CA	PROPOSED MARITIME ADMINISTRATION PIER IN SUISUN BAY AT FOOT OF LAKE HERMAN RD COUNTY OF SOLANO STATE CA APPLICATION BY U MARITIME ADMINISTRATION

CALENDAR PAGE 440
MINUTE PAGE 1339
Figure 4



TYPICAL BENT

Mitigation Plan
for

Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier Project

10 April 1995

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I. PROJECT DESCRIPTION

Area Description

The Suisun Bay National Defense Reserve Fleet (Reserve Fleet) is located at General Anchorage Number 26, in west central California, northeast of San Francisco Bay, in Solano County (fig.1). Northeast of the City of Benicia, California, the Reserve Fleet site is situated in northwest Suisun Bay just north of Army Point and Carquinez Strait. The study site is bordered to the west and north by parcels owned by California Fish and Game and the Mothball Fleet Duck Club. These wetlands of Suisun Marsh are managed for the purpose of recreational hunting (Suisun Marsh is the largest unfilled marsh in the San Francisco Bay area protected for its recreational and wildlife habitat resources).

Suisun Bay receives freshwater discharges from the Sacramento and San Joaquin rivers to the east, Montezuma Slough, Suisun Slough, and Goodyear Slough to the north, and Sulfur Springs Creek and Pacheco Creek to the south. Suisun Bay is adjoined by Grizzly Bay in the north, Honkers Bay in the east, and Carquinez Strait in the west.

To the northeast, and adjacent to the Reserve Fleet site, the California Department of Water Resources owns and operates a water management outlet structure which releases water from Goodyear Slough. Historically, Goodyear Slough meandered to its termination within the adjacent wetlands. In addition to the Goodyear Slough outfall, the Department of Water Resources also has several ongoing projects in the Suisun Bay. Tidal reference for this area is MHW-NGVD (+2.44) and HTL-NGVD (+4.20).

Site History

Established following World War II, the Reserve Fleet, was one of eleven fleets of U.S. ships, maintained by the Maritime Administration. The ships range from commercial freighters to Navy cruisers and are maintained in various states of readiness for 10-day 20-day and 30-day deployment, for spare parts, and for scrap. Anchor time for any ship may range months to years prior to redeployment or scrapping. Ships from the Reserve Fleet have been activated as recently as 1989 for Operation Desert Shield, when several were used to transport supplies to the Middle East. From the time of its establishment at the Suisun site, fleet size has fluctuated drastically, beginning after World War II with over 300 ships to its current size of 70-80 ships. Today only two other Maritime Administration Reserve Fleets exist, one on the east coast, another in the Gulf of Mexico.

Since the 1940's, the Reserve Fleet has experienced increasing sediment accretion in Suisun Bay which not only interferes with fleet operations but requires increasingly expensive remedies that provide only temporary solutions. An investigation was conducted of sedimentation effects being experienced at the site and solutions developed that would lessen the impacts associated with the continuing accretion at the site. The continuing sediment accretion at the site has been alleviated in the past years by a

variety of techniques to insure the continued operation and maintenance of the Reserve Fleet.

In 1949, due to the accumulation of sediments along the shoreline, it became necessary to reposition one-half of each row of vessels outboard to maintain sufficient water depth for vessel draft requirements. This repositioning located the Reserve Fleet closer to the centerline of the natural channel. The higher velocities and greater depths occurring at this location have reduced or halted the effects of shoaling on the fleet vessels.

In 1961, an existing wooden walkway was replaced by a floating causeway for access to the APL, a large barge from which administration and maintenance activities for the fleet are directed. The causeway has sufficient capacity to accommodate semi-tractor trailers that deliver supplies and parts to the Reserve Fleet. The APL acts as a docking facility for the various work vessels which are utilized in the maintenance and repair of the Reserve Fleet vessels.

To provide for the draft of the APL (approximately nine feet) and the continued mobility of the work boats which are moored to and dispatched from it, the barge has been moved outboard and causeway sections added on two different occasions. In 1976, accretion between the shoreline and the APL necessitated moving the barge 227 feet away from the shoreline. Once again, in 1980, the barge was moved, this time 250 feet further offshore.

In addition to moving the barge away from the shoreline as a method of alleviating the effects of shoaling between the APL and the shoreline, dredging has also been employed to maintain the necessary operating depths. The first maintenance dredging performed at the Reserve Fleet site removed fifty thousand cubic yards in 1973. This dredging was necessary to maintain the operating depth required to accommodate the work vessels which operate from the APL. More recently dredging was required in 1986 to remove eighty thousand cubic yards. It was the 1986 dredging episode which prompted the Bay Conservation and Development Commission to mandate that alternative solutions to the shoaling problem be examined (Appendix). The Maritime Administration approached the Corps of Engineers for help in developing that solution in 1988.

Project Description

The proposed permanent solution developed by the Corps for the Maritime Administration is for a pier to be constructed 1400 feet into the bay from the existing parking lot of the facility (fig.2). The APL and associated work vessels would be closer to the Reserve Fleet and at a point in the channel where higher velocities and greater depth eliminate the effects of shoaling. The pier would be off the water surface instead of floating on it, which was found to contribute to sediment accretion. Using precast concrete piles and a cast-in-place concrete deck, the pier and associated finger docks would support heavy traffic, as well as provide suitable support for water, sewer, and electrical lines. Presently only electrical lines are supported. The electrical lines will need to be upgraded

and the electrical substation relocated from the existing platform to a new substation on the parking lot. The APL would be moored off the end of the pier with supporting work vessels berthed at floating finger docks extending from the sides of the pier (fig.2).

The desire to bring water and sewer lines to the facility is longstanding. Currently, water and sewer are stored on barges, and loading and offloading is accomplished onsite and at Concord Naval Weapons Station - a tedious, expensive, and inefficient process.

Construction Description

1. Establish Staging Areas: LAND - A portion of the parking lot will be designated for contractor use, current parking configuration will be changed to accommodate contractor. Space is needed for a piledriving rig and construction materials and supplies. WATER - A piledriving barge and supply barge will be floated into the site for driving the remainder of the piles which the land-based rig cannot reach. Supplies will be barged into the site for construction on the water.

2. Utility Lines: Water and sewer lines will be extended 3530' (1400' on pier, 2130' on land) from existing stubs at Lake Herman Road to the new pier and connected to the APL barge. The lines will run under and beside the access road while maintaining utility separation as required by the city of Benicia. At the security gate, the sewer line will cross the parking lot diagonally and come alongside the waterline at the beginning of the new pier. The two lines will continue up the pier ramp and to the APL in a utility conduit under the walkway on the south side of the pier. Sewage will be stored on the APL in a bilge tank and transferred from that tank to the sewer line by a pump system also on board the APL. The sewer line has been designed to be Schedule 80 PVC with a minimum diameter of 4". The water line has also been designed by Pal Consultants to be ductile iron encased in polyethylene with a minimum diameter of 3". One pipeline will be buried under the access road taking advantage of the access road subgrade material for adequate bearing capacity. The other will be buried within the fencelines denoting the existing right-of-way for the access road and avoid existing wetlands. The utilities will be buried with a minimum 2' cover material.

The upgrade of the electrical lines will begin with a "riser" pole at the security gate which will tranfer the electric and phone lines to an underground conduit extending the length of the parking lot. The lines will surface next to the utility conduit of the new pier and adjacent to the water and sewer lines. A new substation replacing the older piling platform in the wetlands will be built on the parking lot on a 26x23 foot steel platform and control power to the entire facility. Electrical lines to the ship rows east and west of the APL will be laid ~600 feet on the wetlands from the new substation to the existing power pole lines. The electrical and phone lines for the APL will be laid in the utility trench with the water and sewer lines. During construction of the new pier, the APL electrical and phone lines will be laid along the old causeway

to the APL.

3. Pier Alignment and Electrical Substation Relocations: The pier alignment is designed as an extension of the facility access road. This alignment currently does not overlap with the existing causeway at the parking lot meaning that no portion of the existing causeway will need to be relocated in order for construction to finish. However, because the proposed pier alignment occurs on the location of the electrical utility, that substation will be relocated to the parking lot and a new structure will be built to accomodate it before construction can proceed in that area. The electrical lines powering the ship rows will be laid from the new substation to the existing polelines across the wetlands. Additionally, the APL barge itself will be relocated east of the causeway prior to driving piles to allow construction of the pier in that area. Existing boats and barges on the south side of the existing causeway will be relocated to the outboard side of the temporary location of the APL barge or anchored with the reserve fleet as space is needed for the pier construction.

4. Construction Period: Construction is projected to begin in July, 1995, and depends on obtaining the needed regulatory permits. The project should be completed around December, 1995. Demolition of the existing causeway will begin September, 1995, and be completed before February, 1996.

5. Construction Method: Pile driving for the first few bents of the pier closest to shore will be accomplished using land equipment, i.e., crane and piledriver sited on the parking lot. The electrical line and substation relocation from wetlands to the parking lot will remove aerial obstacles for the pile driver. Pile bents which cannot be reached by land will be driven from a piledriving barge which will be pushed by tugboat into position over marsh and mudflat during hightide in the footprint of the new pier, and grounded if necessary.

Construction will be sequential, in that pile bents will be driven and pilecaps formed around the bents before the concrete girders and deck can be placed. Intrusion into the wetland due to construction other than the piledriving barge will be limited to foot traffic. The barge will be positioned to follow the footprint of the new pier in order to minimize habitat disturbance. Contract specifications will be written such that neither vehicular traffic nor matting will be used in the wetlands. The girders supporting the bridge deck will be precast and lifted into place. The concrete deck will be cast-in-place on a pre-formed steel deck. Again, both land and water-based operations will be needed with an emphasis on water-based construction because of limited land staging area and restricted access to the site. The utilities and lighting will be installed on the pier after the structural work is substantially completed.

Utility lines will be installed along Lake Herman Road, under and beside the access road, and through the parking lot with adequate compaction and repairs to insure stability for the lines, the roads, and the parking lot. During utility line construction, temporary fill on the shoulders of the access road may be required to allow continuous access to the facility for operational purposes. On the pier, the utility lines will be placed in the utility conduit and connected to flexible hoses extending from the pier to the APL barge. Under the railroad, the associated petroleum pipe, and a storm drain, the lines will be pushed or hand-excavated and filled according to City of Benicia and Southern Pacific Railroad specifications.

The floating docks will be prefabricated units. Dock sections will be floated into position and anchored with pilings as shown in the design drawings.

Near completion of the project, the APL will be transferred to new dolphins (pile clusters) installed outboard of the permanent pier. Existing dolphins anchoring the APL will be removed during temporary relocation and final relocation. Associated work vessels including three tug boats, one crane barge, and one drydock barge will be relocated to the finger docks, outboard of the APL, or to the Reserve Fleet. On completion and operability of the new pier, the old causeway will be removed from the area in sections. Floating sections will be salvaged and towed from the site. Damaged sections will be demolished and removed.

6. Site Operations during Construction: The facility will remain in operation during construction by shifting barges and boats, covering open trenches when not under construction, and utilizing partnering concepts among concerned agencies, facility personnel, the construction contractor, and Corps construction representatives.

II. GOAL OF MITIGATION

The goal of the mitigation is to provide replacement habitat for the habitat impacts caused by the project and the temporary disturbance to wildlife species due to construction which cannot be avoided or minimized. Through the planning process the project was developed to avoid adverse affects to the environment. The project design has been reviewed several times with modifications incorporated to minimize the pier size, footprint, and effects on the surrounding area while maintaining the mission of the maintenance facility.

Project Habitat Impacts

The construction of the pier and demolition of the existing causeway have the following impacts on the environment (table C). 3847 square feet of brackish marsh and 736 square feet of mud flat will be uncovered and enhanced by the project. 10,993 square feet of open bay will be covered by the pier. The project as a whole will have a net additional coverage of 6410 square feet (10,993 - 3847 - 736) compared to the existing causeway.

Mitigation Requirements by Regulating/Commenting Agencies

The U.S. Fish and Wildlife Service in their August, 1994, Biological Opinion (Appendix) noted temporary impacts to the endangered California Clapper Rail, the threatened Delta Smelt and the proposed-for-listing Sacramento splittail. Reasonable and prudent measures (R&P) for minimizing incidental take for the above species were listed:

1. The potential for harassment, harm (including habitat modification), or mortality to California clapper rails shall be minimized.

2. Measures shall be taken to offset the temporary loss of California clapper rail and delta smelt/Sacramento splittail habitat. Replacement ratio of 1:1 for clapper rail habitat and 3:1 for smelt habitat.

3. Measures shall be taken to minimize mobilization of sediments within and outside the project area.

The Bay Conservation and Development Commission (BCDC) has indicated that mitigation for net bay fill due to the project as well as an allowance for enhancing public access to the area will be required prior to issuing a Consistency Determination for the project.

Quantifying/Qualifying Mitigation for Project Impacts

For R&P 1, project construction landward of the APL will occur only between September 1 and February 1 to not disturb clapper rail nesting. This includes utility construction, a portion of the new pier, and demolition of the causeway.

For R&P 2, mitigation for temporary loss of habitat for species will create or enhance at least 12,450 square feet of tidal marsh/mud flat habitat for clapper rails and 18,237 square feet of sub-aquatic/tidal marsh habitat for smelt and splittail.

For R&P 3, a silt curtain will be deployed around the causeway during demolition to prevent mobilization of silt during the operation.

Per BCDC, mitigation for 6,410 square feet of net bay fill will be provided for the project.

Per BCDC, signage showing the history of the Reserve Fleet, the resources of Suisun Marsh, and a map of Suisun Bay will be provided at two vista points (three signs per site) for enhancing public access to Suisun Bay.

III. FINAL SUCCESS CRITERIA

Success for the signage will be completion and posting of signage as described in Section II.

Success for the time frame requirement is completion of all work on the shoreside of the APL within the window stated above.

Success for bayfill mitigation and construction on the mitigation site will be confirmed by Corps construction inspector with certification of as-built drawings and daily reports that plans & specifications have been met.

Habitat mitigation success for clapper rail will be demonstrated by an increase in the amount of accessible vegetation appropriate for rail habitat which occurs over a range of elevations from tidal wetlands to high marsh similar to that found by the pier project.

Mitigation success for Delta smelt/ Sacramento splittail will be the increase in shallow waters in intertidal and tidal wetlands appropriate for the target species after the levee is breached.

Also see table of Summary of Effects in Appendix.

IV. MITIGATION SITE SCREENING PROCESS

In order to identify mitigation meeting the above criteria and satisfactory to environmental agencies and the Maritime Administration, a list of prospective mitigation alternatives was prepared with input from concerned parties which considered proximity to project site, amount of mitigation for target species, and amount of mitigation for bayfill. Seven alternatives were described in concept and distributed to California Fish and Game, U.S. Fish and Wildlife, BCDC, Corps Regulatory Branch, Brenda Grewell at DWR, Josh Collins at SF Estuary Institute, and Jules Evans at Avocet Research. The last three are individuals who have extensive knowledge of clapper rails and of characteristic rail habitat in the area.

Comments and recommendations were solicited from the above parties with the recommendations reaching a consensus that mitigation requirements could be satisfied with the following site.

V. PROPOSED BAY FILL & HABITAT MITIGATION

Description of Existing Site Prior to Mitigation

The site is bordered by Suisun Bay on the south, import auto fleet parking to the west, Southern Pacific Railroad to the North, and an adjacent Department of Fish and Game(DFG)-managed diked tidal wetland fed by Goodyear Slough to the east.

It measures roughly 60 acres and encompasses a diked pond which was once a part of a duck club parcel. It has two tide gates, partially blocked, that access narrow channels connected to Suisun Bay. The site is now owned and monitored by the California Department of Fish and Game (DFG). Habitat on the site is a brackish diked tidal wetland. Roughly 70% of the site, the area closer to Suisun Bay, is below MHW. The levees surrounding the pond are above HTL.

The site's elevation and the lack of sufficient flooding from the neighboring DFG-managed pond do not allow DFG to maintain the quality and volume of water required for preferred waterfowl vegetation such as fat hen and brassbuttons. Thick grasses and pepperweed encroaching from the upland portion of the pond and levees are engulfing intertidal and diked tidal vegetation because of the lack of sufficient flooding. Historic perimeter and interior channels are becoming clogged with bulrushes as sediment is trapped in the pond. The tidal gates carry in sediment that is deposited in the channels and ebb velocities are insufficient to scour the channels. Currently, channels and ponds on the site total about two acres with the remainder of the bayward portion being diked tidal marsh.

Dominant plant species in the site include *Lepidium latifolium* (pepperweed), *Scirpus californicus* and *Scirpus acutus* (tules), *Scirpus robustus* (alkali bulrush), and *Typha angustifolia* (cattail), with sub-dominiants *Distichlis spicata* (salt grass), *Salicornica virginica* (pickleweed), *Juncus balticus* (Baltic rush), *Baccharis donglassi*, and *Cotula coronopifolia* (brass buttons). Cattails and tules are most abundant along the banks of channels and ditches. Alkali bulrush is abundent around depressions and near channels. Other species occupy the diked high marsh plain, which is being invaded by pepperweed. Shallow open water is becoming crowded by tules, cattails, and bulrush. The vegetation mirrors that of the adjacent tidal marsh on the shoreline of Suisun Bay.

VI. IMPLEMENTATION PLAN

Restoration Effort

For habitat and net bay fill mitigation directed at providing increased habitat for endangered species, tidal restoration of the site is proposed (fig.3). Implementation of this plan will occur during the clapper rail window, September 1 to February 1 as the site is adjacent to clapper rail territory. The restoration effort will breach the outboard levee at the two tide gates, creating openings equal to the width of the outer channels. The breaches will be cut with 1:3 sideslopes (fig.4). The contractor will attempt to salvage vegetation at levee toes for replanting at the toe of the cut. The material from the breaches would be placed at a low section on top of the levee separating the neighboring pond managed with Goodyear Slough from the mitigation site to minimize overtopping now occuring between the ponds and provide increased refuge habitat during high water events. A dump truck and backhoe will create the breach and move the excess soil to the adjacent levee. No irrigation or planting is required for the breaches as the site is fully vegetated and the breaches will adjust to tidal flow, eroding or accreting to adjust to flow conditions.

Tidal data for the site vicinity are MHHW = 2.97 ft.NGVD and MHW = 2.44 ft.NGVD. The average site elevation is 2.10 ft.NGVD, only 0.34 ft below MHW. Existing pickleweed-dominated vegetation onsite occurs at elevations predominantly above MHW and also above MHHW. Therefore levee breaching is not likely to cause significant submergence or conversion of pickleweed-dominated vegetation (potential salt marsh harvest mouse habitat) to other vegetation types. Increased tidal circulation would probably alter the distribution and abundance of other vegetation types on the site, but would not cause the loss of any existing vegetation types present. The tidal restoration would cause the site's vegetation to approximate that of the outboard tidal marshes.

Past Examples

Similar projects have succeeded on the south side of Suisun Bay in the diked area between Hastings Slough and Tosco Refinery according to Department of Fish and Game (DFG) and conversations with Department of Water Resources. DFG has breached bayside levees at tide gates and achieved beneficial effects due to increased tidal action in previously-diked ponds.

VII. MAINTENANCE DURING MONITORING PERIOD

No maintenance is planned as the site is expected to develop naturally.

VIII. MONITORING PLAN

Monitoring will consist of random sampling in habitat zones on the site as well as along defined transects of channels in the site. Zones, transects, and the scale of sampling will be determined empirically in the field during baseline monitoring. In each of the habitat zones, annual monitoring will consist of random sampling of dominant vegetation types, the extent each type covers a zone, and observations of physical changes in topography in each zone especially channel creation or development.

Monitoring at chosen existing and developing channels along transects crossing the channels at 500 ft intervals will record wetted surface, width, depth, and perimeter vegetation types. In most cases only one transect will be required per channel because of channel length.

Surveys will occur initially to set baseline condition prior to construction and annually thereafter until the site shows development corresponding to the final success criteria.

IX. REPORTING

A report will be prepared after each survey documenting site progress. Photos of the site at each visit shall be included in the report reflecting material discussed in the report. Reports on mitigation progress will be submitted annually in March after monitoring visits in January until approval of mitigation success is received from the Corps Regulatory Branch (See section IX). Other agencies receiving copies of the report will include BCDC, California Fish & Game, U.S. Fish & Wildlife Service.

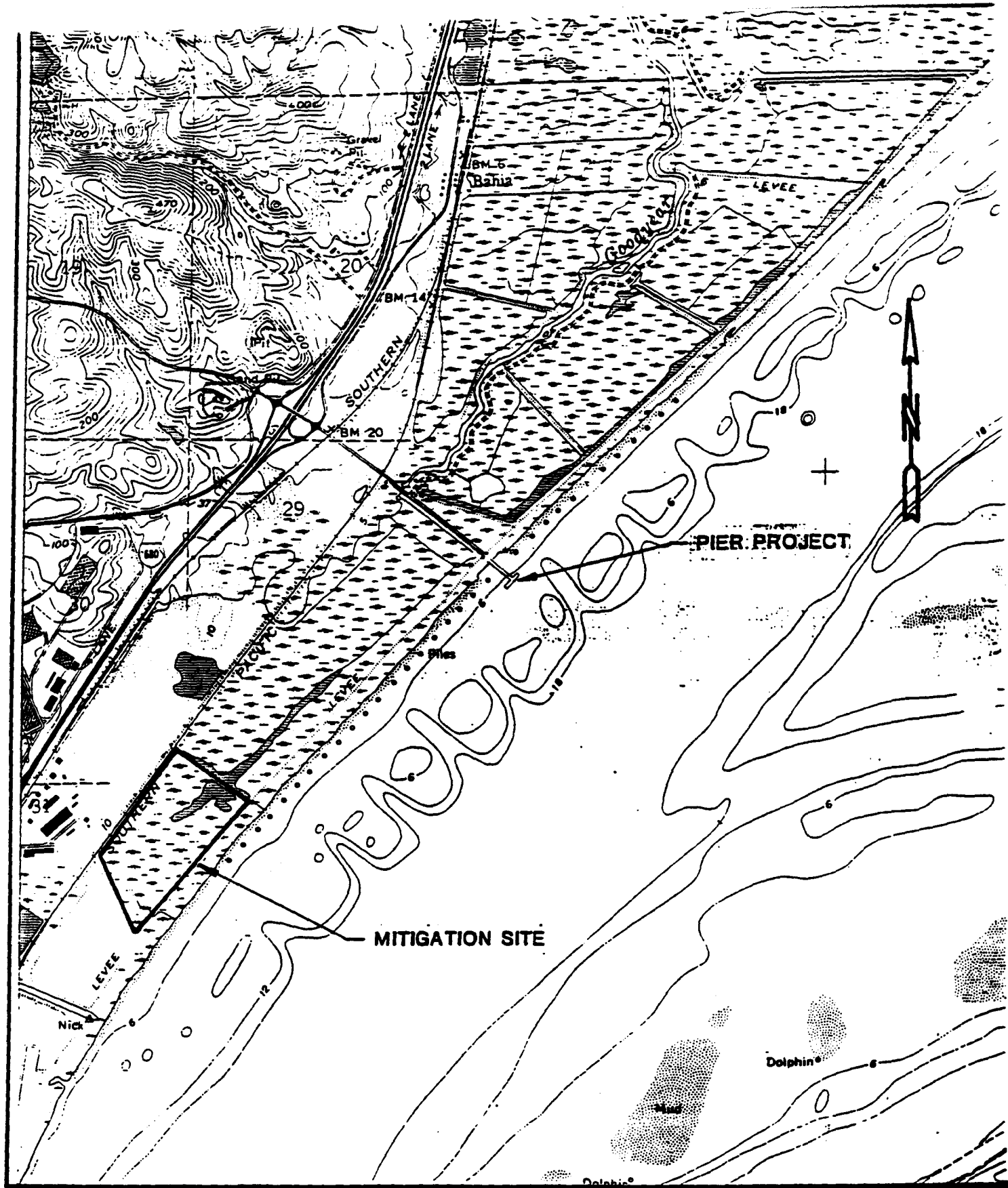
X. COMPLETION OF MITIGATION

When the monitoring contractor believes that the mitigation success criteria have been met as listed in the special conditions in the regulatory permit, the contractor shall notify Corps Regulatory Branch for confirmation of that assessment.

XI. CONTINGENCY MEASURES

In the event that the special conditions concerning habitat mitigation are not met by judgement of the Corps Regulatory Branch, the site will be evaluated for remedial action to resolve the issue. Remedial action could consist of enlarging the breaches or creating channels inside the site to increase tidal influence, or other actions such as non-native plant control, planting native vegetation depending on the degree of mitigation success.

Appendix



PURPOSE: ALLEVIATE SHOALING PROBLEM, PREVENT VESSEL GROUNDING

ADJACENT PROPERTY OWNERS:
1. STATE LANDS COMMISSION
2. FLEETSIDE DUCK CLUB
3. CA. DEPT OF FISH & GAME

PLAN VIEW

SCALE: 1" = 2000'

NORTH SIDE OF SUISUN BAY
SOLANO COUNTY, CA

PROPOSED MARITIME ADMINISTRATION PIER
VICINITY MAP
IN: SUISIN BAY
AT: FOOT OF LAKE HERMAN RD.
CITY OF: BENICIA COUNTY OF: SOLANO DATE: C
APPLICATION BY: U.S. MARITIME ADMINISTRATION

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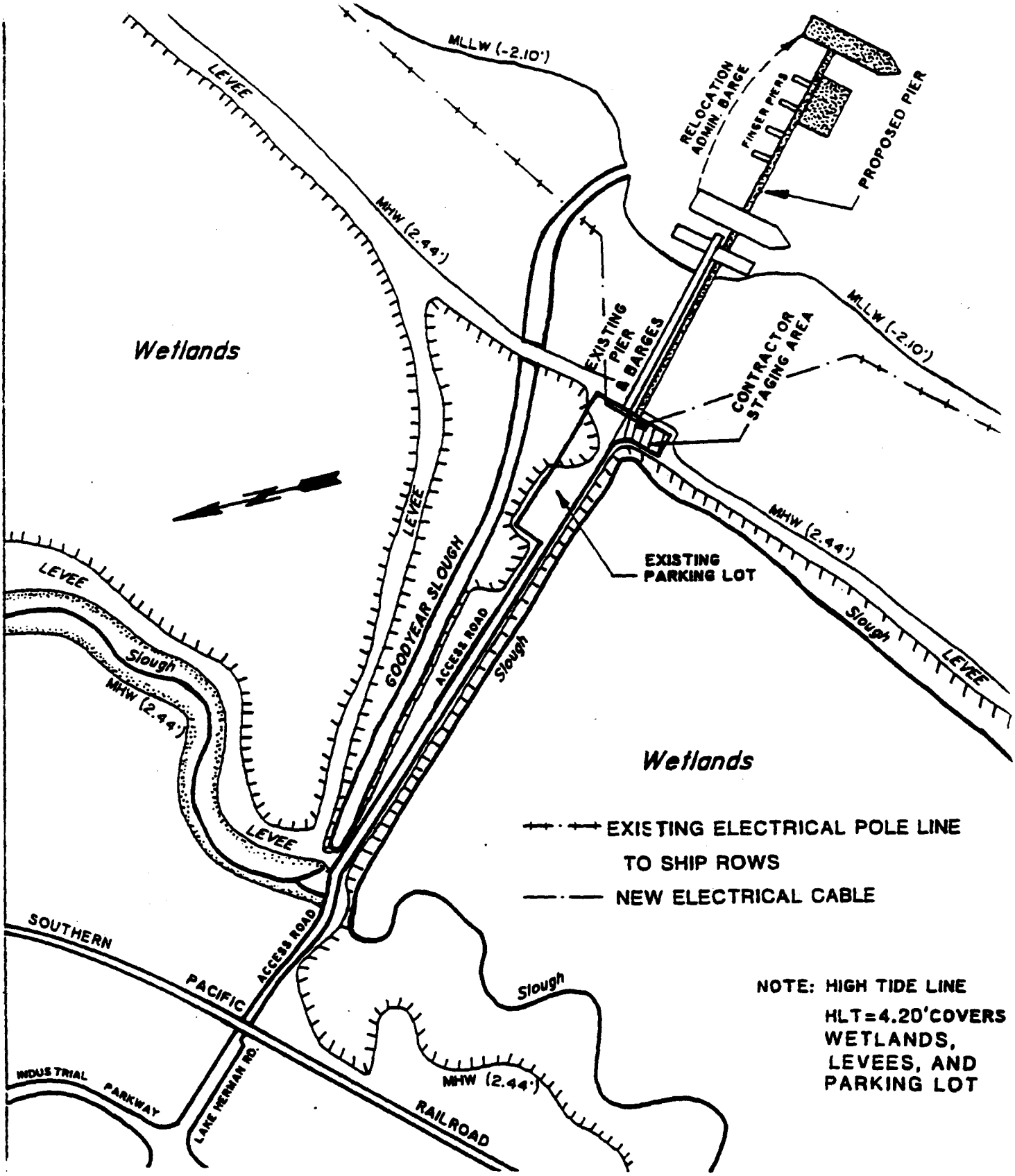
SHEET 1 OF 4



PURPOSE: ALLEVIATE SHOALING PROBLEM, PREVENT VESSEL GROUNDING

DATUM: NGVD

ADJACENT PROPERTY OWNERS:
1. STATE LANDS COMMISSION
2. FLEETSIDE DUCK CLUB
3. CA. DEPT OF FISH & GAME

PLAN VIEW

SCALE 1" = 400'

NORTH SIDE OF SUISUN BAY
SOLANO COUNTY, CA

PROPOSED MARITIME ADMINISTRATION PIER

IN: SUISIN BAY

AT: FOOT OF LAKE HERMAN RD.

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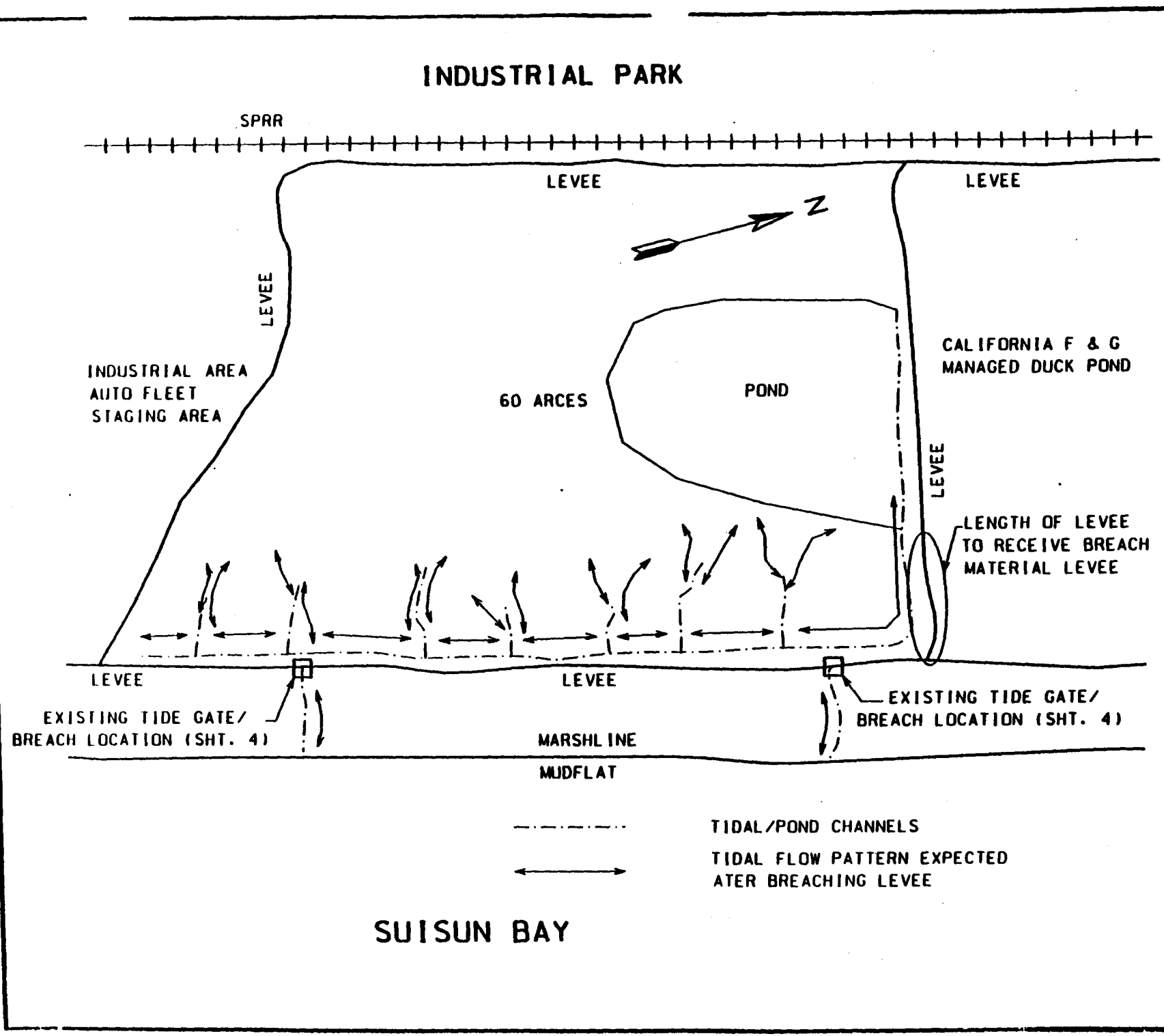
APPLICATION BY: U.S. MARITIME ADMINISTRATION

STATE: CA

SHEET 2 OF 4



PROPOSED MARITIME
ADMINISTRATION PIER
MITIGATION SITE
IN: SUISUN BAY
AT FOOT OF LAKE HERMAN RD.
COUNTY OF SOLANO STATE CA

SHEET 3 OF 4

PLAN VIEW

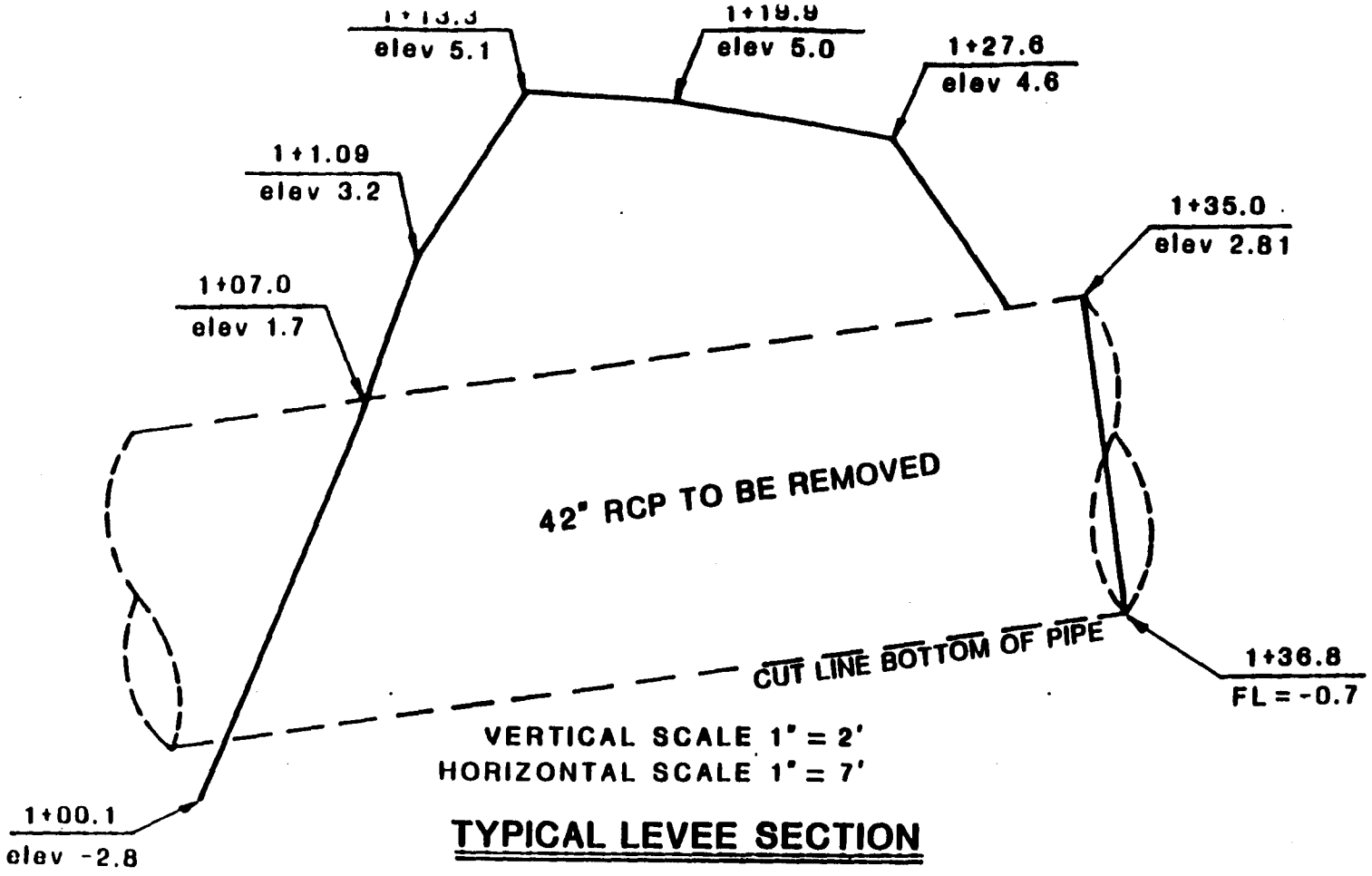
SCALE: 1" = 600'

NORTH SIDE OF SUISUN BAY
SOLANO COUNTY, CA

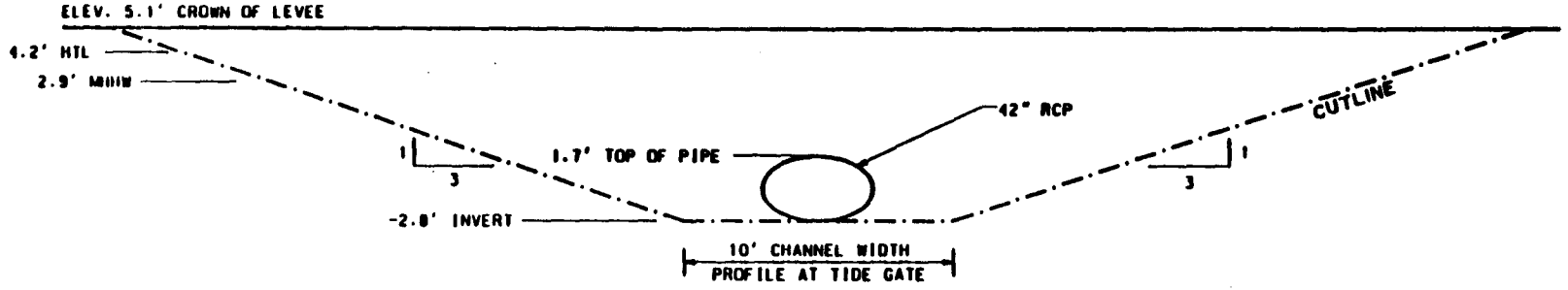
PURPOSE: ALLEVIATE SHOALING
PROBLEM, PREVENT VESSEL
GROUNDING

DATUM:

ADJACENT PROPERTY OWNERS:
1. STATE LANDS COMMISSION
2. FLEETSIDE DUCK CLUB
3. CA. DEPT OF FISH & GAME



TYPICAL LEVEE SECTION



SCALE 1" = 7'

TYPICAL LEVEE PROFILE

PROPOSED MARITIME
ADMINISTRATION PIER
MITIGATION SITE
IN: SUISUN BAY

PLAN VIEW
EXISTING TIDEGATE
AND BREACH LOCATION

NORTH SIDE OF SUISUN BAY
SOLANO COUNTY, CA

PURPOSE: ALLEVIATE SHOALING
PROBLEM, PREVENT VESSEL
GROUNDING

DATUM: NGVD

ADJACENT PROPERTY OWNERS:
1. STATE LANDS COMMISSION
2. FLEETSIDE DUCK CLUB
3. CA. DEPT OF FISH & GAME

AT: POST OF LAKE HERMAN RD.
CALENDAR PAGE 459
MINUTE PAGE 1358
ADMINISTRATION BY: U.S. MARITIME ADMINISTRATION

SHEET 4 OF 4

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN Go

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
THIRTY VAN NESS AVENUE, SUITE 2011
SAN FRANCISCO, CA 94102-6080
PHONE: (415) 557-3686

LETTER OF AGREEMENT FOR CONSISTENCY
DETERMINATION NO. CN 8-85

December 9, 1985

U. S. Department of Transportation
Maritime Administration, Western Region
211 Main Street, Room 1112
San Francisco, California 94105

ATTENTION: S. W. Galstan
Western Region Director

Gentlemen:

I. Agreement

A. The San Francisco Bay Conservation and Development Commission agrees with the determination of the U. S. Department of Transportation, Maritime Administration, Western Region, that the following project is consistent with the Commission's Amended Coastal Zone Management Program for San Francisco Bay:

Location: In the Bay, at the Suisun Bay Reserve Fleet (the "mothball fleet") on the north shore of Suisun Bay, Solano County.

Description: Dredge approximately 83,000 cubic yards of sediment from the "mothball fleet" area with disposal of the dredge spoils at the federally-approved Carquinez Disposal Site.

B. This agreement is given based on the information submitted by or on behalf of the U. S. Department of Transportation, Maritime Administration, Western Region, in its consistency determination dated September 23, 1985, as revised by its letter dated November 19, 1985.

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II. Findings and Declarations

On behalf of the Commission, I find and declare that:

A. On September 23, 1985, the U. S. Department of Transportation, Maritime Administration, Western Region, submitted a description of the project and requested that the Commission concur that the proposed project is consistent with its Amended Coastal Zone Management Program for San Francisco Bay. On November 19, 1985, the Maritime Administration revised their consistency determination slightly to reduce the amount of dredging and the size of the area to be dredged. Based on the information contained in those revised materials, the Commission finds the proposed project to be consistent with the provisions of the McAteer-Petris Act and the policies of the San Francisco Bay Plan in that the spoils from the project site will be deposited at a federally-approved disposal site within the Bay so the maximum amount of deposited dredged spoils will be carried out of the Bay.

The project will result in the destruction of some tidal marsh and mudflat. The Commission's policies clearly state that marshes and mudflats should be maintained to the fullest possible extent. The staff has worked with the Maritime Administration to reduce the area of marsh to be destroyed to the maximum extent. However, the Maritime Administration has indicated this is an area of high siltation and colonization of marsh plants and that future dredging may be required which will require the distruction of marsh. The Commission advises the Maritime Administration that the Maritime Administration should investigate alternatives to the dredging that would not result in the loss of such habitat. The Commission believes that hydrological studies of the site should be conducted by the Maritime Administration to determine the best long-range solution to the siltation problem at the pier. The Commission finds that the results of such a study and the Maritime's efforts to implement the study's recommendations will be important factors in the Commission's findings of consistency with regard to future dredging proposals at this site.

B. The proposed project is categorically exempt from the requirement to prepare an environmental impact report, pursuant to Regulation Section 10910, because the project is equivalent to a "minor repair or improvement," as defined in Regulation Section 10122(a)(1), which authorizes "all routine maintenance dredging of whatever amount," amd Regulation Section 10122(a)(3), which authorizes "the deposit of dredged spoils in a dumping grounds in the amounts and manner and at the times set in the specific policy adopted by the U. S. Army District Engineer, San Francisco District, and by the Regional Water Quality Control Board, San Francisco Region."placing utility cables on or under the bottom of the Bay.

C. The Commission, pursuant to the Coastal Zone Managment Act of 1972, as amended (16 USC Section 1451), and the implementing Federal Regulations in 15 CFR Part 930, is required to review Federal projects within San Francisco Bay and agree or disagree with the Federal agency's determination that the project is consistent with the Commission's Amended Coastal Zone Management Program for San Francisco Bay. This letter constitutes such review and comment.

D. This project was listed with the Commission on November 7, 1985, at which time no Commissioner or other party objected to this project.

Executed in San Francisco, California, on behalf of the San Francisco Bay Comservation and Development Commission on the date first above written.

Alan R. Pendleton

ALAN R. PENDLETON
Executive Director

ARP/LP/mm

cc: U. S. Army Corps of Engineers, Attn: Regulatory Functions Branch
San Francisco Bay Regional Water Quality Control Board,
Attn: Certification Section

TABLE C NET AREA OF IMPACT (FT^2)

PROJECT FEATURE	RUDERAL	BRACKISH MARSH	MUD FLAT	OPEN BAY	NET CHANGE
PIER/ CAUSEWAY	0	-1,476	-646	+21,120	+18,968
APL	0	0	0	12,689	0
MOORING DOLPHINS	0	-60	-60	-307	-427
FLOATING DOCKS AND BARGES	0	0	0	-9,820	-9,820
UTILITY LINES	10,920	304	0	0	+11,224
ELECTRICAL SUBSTATION	0	-2,615	0	0	-2,615
TOTAL	10,920	-3,847	-736	+10,993	+17,330

*Gray shading indicates no change.

TABLE D TEMPORARY CONSTRUCTION IMPACT AREA (FT^2)

PROJECT FEATURE	RUDERAL	BRACKISH MARSH	MUD FLATS	OPEN BAY	TOTAL
CONSTRUCTION PATHWAY	0	8,339	5,239	0	13,578

**Disturbance width (50 feet -19 feet= 31 feet).

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1823
Sacramento, California 95825-1846

In Reply Refer To:
1-1-94-F-19

August 17, 1994

Lt. Colonel Michael J. Walsh
U.S. Army Corps of Engineers
Regulatory Branch (Attn: Mark Bartholomew)
211 Main Street
San Francisco, California 94105-1905

Subject: Endangered Species Formal Consultation on the Proposed Modifications to the Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier

Dear Lt. Colonel Walsh:

This responds to your request for formal consultation on issuance of a permit to the U.S. Department of Transportation, Maritime Administration to construct a new pier and remove the existing pier at the Reserve Fleet maintenance facility in Suisun Bay. The U.S. Army Corps of Engineers (Corps) submitted a biological assessment with this request on March 1, 1994. Your request for formal consultation and conferencing was received by the U.S. Fish and Wildlife Service (Service) on March 3, 1994.

This biological opinion addresses the effects of pier and associated facilities construction and pier removal on the endangered California clapper rail (*Rallus longirostris obsoletus*), threatened delta smelt (*Hypomesus transpacificus*), and proposed threatened Sacramento splittail (*Pogonichthys macrolepidotus*).

This biological opinion is based on (1) An Environmental Assessment of the Proposed Modifications to the Maritime Administration Suisun Bay Reserve Fleet Maintenance Facility Pier, dated February 1994, (2) the Maritime Administration Maintenance Facility Project Description, dated April 8, 1994, (3) information in Service files; and (4) additional communications between the Corps, the Maritime Administration, and the Service.

Biological Opinion

It is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the endangered California clapper rail, threatened delta smelt, or proposed threatened Sacramento splittail. Critical habitat for the California clapper rail and Sacramento splittail has not been

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designated: therefore, none will be adversely modified or destroyed. Critical habitat has been proposed for delta smelt but is not likely to be adversely modified or destroyed.

Description of the Proposed Action

The Suisun Bay National Defense Reserve Fleet is located in northwestern Suisun Bay just north of the Carquinez Strait in Solano County, California. Maintenance of the Reserve Fleet is accomplished from an Administration Barge which is anchored about 475 feet offshore. The Barge acts as a docking facility for the various work vessels that maintain and repair the Reserve Fleet vessels. A floating causeway connects the Administration Barge to the shore.

Over the years shoaling between the shoreline and the Administration Barge has created operational problems for the Fleet. Dredging was performed in 1973 and 1986. As an alternative to costly maintenance dredging, the Maritime Administration now proposes to construct a 1,400 foot elevated pier into Suisun Bay. The Administration Barge would be located at the bayward end of the pier. Work vessels associated with the Barge would be berthed at floating finger docks extending from the sides of the pier. The pier would be constructed out of precast concrete piers and a cast-in-place concrete deck. Vehicle traffic as well as water, sewer, and electrical lines would be supported by the pier.

The new pier would be constructed next to the existing floating causeway. Once the new pier is completed, the old causeway would be removed in sections. Floating sections would be salvaged and towed from the site. Damaged sections would be demolished and removed. The existing electrical substation, which is located in the tidal marsh, would be removed and a new substation constructed in the parking lot of the facility.

Construction supplies and materials would be stored in the parking lot adjacent to the tidal marsh. A land-based piledriving rig would be used to drive piles close to shore. For those piles that the land-based rig could not reach, a pile-driving barge would be floated into the site. Electrical lines to the ship rows east and west of the Administration Barge would be laid 600 feet on the wetlands from the new substation to the existing power pole lines. Utilities and lighting would be installed on the pier after the structural work is substantially completed. During construction activities, intrusion into the wetland would be limited to foot traffic.

Construction is projected to begin in August, 1994, with project completion within about 8 months or March, 1995.

Species Account/Environmental Baseline

California Clapper Rail

Please refer to U.S. Fish and Wildlife Service (1984) for biological information on the California clapper rail. Additional information is taken from a previous biological opinion prepared by the Service, dated August 3

1990, on Department of the Army permit application no. 15283E49. however, certain sections on the distribution, abundance, and status of the rail contained in that opinion are updated below to reflect current information.

Of the 193,800 acres of tidal marsh that bordered San Francisco Bay in 1850, about 30,100 acres currently remain (Dedrick 1993). This represents an 84 percent reduction from historical conditions. In Suisun Marsh alone, about 56,300 acres of tidal marsh occurred historically. Only 6,900 acres or 12 percent remain today. A number of factors influencing remaining tidal marshes limit habitat values for clapper rails. In Suisun Marsh as well as other portions of the Bay, habitat suitability of many marshes for clapper rails is limited or precluded by small size, fragmentation, and lack of tidal channel systems and other microhabitat features. Of the 6,900 acres of tidal marsh in Suisun Marsh, only about 3,000 acres or 43 percent provide what would be considered suitable habitat for nesting clapper rails. Remaining tidal marsh habitat is comprised of narrow strips adjacent to levees. Although unsuitable for nesting, these narrow strips of marsh provide movement corridors for rails dispersing from existing nesting areas. In addition, the majority of tidal marsh in the eastern portions of Suisun Marsh is comprised of primarily freshwater vegetation which is unsuitable for the clapper rail. In other portions of the Bay, marsh erosion and conversion to freshwater habitat are eliminating or limiting available habitat for clapper rails. These limitations render much of the remaining tidal marsh acreage in San Francisco Bay unsuitable or of low value for the species.

Throughout the Bay, the remaining California clapper rail population is besieged by a suite of mammalian and avian predators. At least twelve native and three non-native predator species are known to prey on various life stages of the rail in the south Bay (Albertson et al., in prep.). Albertson et al. (in prep.) reported nest predation as high as 64 percent in some south Bay marshes. Red fox, Norway rats, and various raptors are the most common predators of clapper rails in the south Bay. Suisun Marsh provides habitat for a wide range of potential clapper rail predators (California Department of Fish and Game (CDFG) 1975), but no studies have been done in the Marsh on the effects of predators on clapper rails. Populations of Norway rats and red fox are probably lower in Suisun Marsh than in other portions of the Bay because urban centers are more remote and because the Marsh supports coyotes, a natural predator of foxes.

Mercury accumulation in eggs is perhaps the most significant contaminant affecting clapper rails in San Francisco Bay, with the south Bay containing the highest mercury levels. Mercury is extremely embryo toxic and has a long biological half-life. The Service collected data from 1991 and 1992 on mercury concentrations in rail eggs in the southern portion of the estuary and found that the current accumulation of mercury in rail eggs occurs at potentially harmful levels. The percentage of non-viable eggs ranged from 24 to 38 percent (mean = 29 percent). No similar studies of contaminants and their effects on clapper rails have been done in Suisun Marsh.

Gill (1979) estimated the total California clapper rail population in San Francisco Bay in the mid-1970's at 4,200 to 6,000 birds. Surveys conducted by the CDFG and the Service estimated that the clapper rail population approximated 1,500 birds in the mid-1980s (Harvey 1988). In Suisun Marsh, Harvey (1988) estimated a population of only 25 clapper rails. In 1988, the total San Francisco Bay clapper rail population was estimated to be 700 individuals with 200-300 rails in the north Bay and Suisun Marsh (Foerster 1989). The total rail population reached an estimated all-time historical low of about 500 birds in 1991 with the greatest recorded declines occurring in the south Bay (USFWS unpubl. data; E. Harding-Smith, pers. comm., 1993). In response to predator management, the south Bay rail population has since rebounded and is now estimated to be approximately 600 individuals (USFWS unpubl. data). A preliminary estimate of the north Bay and Suisun Marsh population is 195-422 pairs (Evens and Collins 1992).

Recent clapper rail surveys conducted exclusively in Suisun Marsh by the California Department of Water Resources (CDWR) since 1991 estimate a population of about 50 rails in the Marsh (B. Grewell, pers. comm., 1994). Nesting clapper rails occur in four locations in the Marsh: (1) Hill Slough, (2) Cutoff Slough or Rush Ranch, (3) tidal marshes fronting Suisun Bay at the mouth of Suisun Slough, and (4) Goodyear Slough adjacent to the Mothball Fleet. Nesting rails in Suisun Marsh are associated with large stands of bulrush. In the north and south Bay, clapper rails nests are most commonly observed in pickleweed, cordgrass, and gumplant. An estimated 6 pairs of clapper rails nest in tidal marshes in the Goodyear Slough area (B. Grewell, pers. comm., 1993). The existing pier at the Maritime Administration Facility is apparently within a clapper rail nesting territory. Clapper rails have been heard vocalizing from underneath the pier during the breeding season (B. Grewell, pers. comm., 1993).

In a north Bay marsh, Evens and Page (1983) concluded that the breeding season, including pair bonding and nest construction, may begin as early as February. Field observations in south Bay marshes suggest that pair formation also may occur in February in some areas (J. Takekawa, pers. comm., 1993). Similar observations have been made in Suisun Marsh (B. Grewell, pers. comm., 1993). The end of the breeding season is typically defined as the end of August, which corresponds with the time when eggs laid during renesting attempts have hatched and young are mobile. Young may fledge as late as mid September (J. Takekawa, pers. comm., 1993).

Delta Smelt

Please refer to the final rule to list the delta smelt as a threatened species (58 FR 12854), and the May 26, 1993, CVP-OCAP biological opinion for delta smelt (Case No. 1-1-93-F-32) and the draft Biological Assessment 1993, for additional information on the biology and ecology of this species.

Historically, the delta smelt is thought to have occurred from Suisun Bay upstream to the city of Sacramento on the Sacramento Riv[illegible] on the

San Joaquin River (Moyle et al. 1992). The delta smelt is an euryhaline species (tolerant of a wide salinity range) that spawns in fresh water and has been collected from estuarine waters up to 14 grams per liter (parts per thousand, ppt) salinity (Moyle et al. 1992). For a large part of its annual life span, this species is associated with the freshwater edge of the entrapment zone (mixing zone at the saltwater-freshwater interface), where the salinity is approximately 2 ppt (Ganssle 1966, Moyle et al. 1992, Sweetnam and Stevens 1993).

The delta smelt is adapted to living in the highly productive Sacramento-San Joaquin River Estuary where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Despite this tremendously variable environment, the historical Estuary probably offered relatively constant suitable habitat conditions to delta smelt, which could move upstream or downstream with the entrapment zone (P. Moyle, pers. comm., 1993). The final rule to list the delta smelt as a threatened species (58 FR 12854) describes in detail the factors that have lead to this species' decline.

Shortly before spawning, adult delta smelt migrate upstream from the highly productive brackish-water habitat associated with the entrapment zone to disperse widely into river channels and tidally-influenced backwater sloughs (Moyle 1976, Radtke 1966, Wang 1991). Migrating adults with nearly mature eggs have been taken at the Central Valley Project's Tracy Pumping Plant from late December 1990 to April 1991 (Wang 1991).

Delta smelt spawn in shallow, fresh or slightly brackish water upstream of the entrapment zone (Wang 1991). Most spawning occurs in tidally-influenced backwater sloughs and channel edgewaters (Moyle 1976; Moyle et al. 1992; Wang 1986, 1991). Although delta smelt spawning behavior has not been observed (Moyle et al. 1992), the adhesive, demersal eggs are thought to attach to substrates such as cattails and tules, tree roots, and submerged branches (Moyle 1976, Wang 1991). In the Delta, spawning is known to occur in the Sacramento River, Barker Slough, Lindsey Slough, Cache Slough, Georgiana Slough, Prospect Slough, Beaver Slough, Hog Slough, and Sycamore Slough (D. Sweetnam, pers. comm. 1993; Wang 1991). Delta smelt also spawn north of Suisun Bay in Montezuma and Suisun sloughs and their tributaries (L. Meng, pers. comm. 1993, D. Sweetnam pers. comm. 1993).

The spawning season varies from year to year and may occur from late winter (December) to early summer (July). Moyle (1976) collected gravid adults from December to April, although ripe delta smelt were most common in February and March. In 1989 and 1990, Wang (1991) estimated that spawning had taken place from mid-February to late June or early July, with the peak spawning period occurring in late April and early May.

Based on data for a closely related species, delta smelt eggs probably hatch in 12-14 days (Moyle et al. 1992). After hatching, larvae are transported downstream toward the entrapment zone where they are retained by the vertical circulation of fresh and salt waters (Stevens et al. 1990). The [illegible]

larvae and juveniles feed on zooplankton. When the entrapment zone is located in a broad geographic area with extensive shallow-water habitat within the euphotic zone (depths less than four meters), high densities of phytoplankton and zooplankton are produced (Arthur and Ball 1978, 1979, 1980), and larval and juvenile fish, including delta smelt grow rapidly (Moyle et al. 1992, Sweetnam and Stevens 1993). In general, estuaries are among the most productive ecosystems in the world (Goldman and Horne 1993). Estuarine environments produce an abundance of fish as a result of plentiful food and shallow, protective habitat for young.

When the entrapment zone is contained within Suisun Bay, young delta smelt are dispersed widely throughout a large expanse of shallow-water and marsh habitat. Dispersion in areas downstream from the State and Federal water pumps and in-Delta agricultural diversions protects young smelt from entrainment and distributes them among the extensive, protective, and highly productive shoal regions of Suisun Bay. In contrast, when located upstream, the entrapment zone becomes confined in the deep river channels, which are smaller in total surface area, contain fewer shoal areas, have swifter, more turbulent water currents, and lack high zooplankton productivity.

In studies by the CDFG, CDWR, and Bureau of Reclamation, larval and juvenile delta smelt were collected from Roe Island in Suisun Bay north to the confluence of the Sacramento and Feather Rivers and east to Medford Island on the San Joaquin River (Wang 1991). These studies were conducted during the months of April through mid-July in 1989 and 1990. Through these distribution surveys, Wang (1991) was able to document the movement of juvenile delta smelt from the Delta to Suisun Bay in late-June to early July. In 1990, young delta smelt were taken at the Tracy Pumping Plant at the end of February (Wang 1991).

The existing environmental baseline includes CVP/SWP operations modified by D-1485, the February 12, 1993, winter-run chinook salmon biological opinion, and the Service's February 4, 1994, delta smelt biological opinion. The Service's 1994 opinion addressed effects of CVP/SWP project operations from February 4, 1994 to February 15, 1995.

The delta smelt is adapted to living in the highly productive Sacramento-San Joaquin River estuary where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Despite this tremendously variable environment, the historical estuary probably offered relatively constant suitable habitat conditions to delta smelt, which could move upstream or downstream with the entrapment zone (P. Moyle, pers. comm., 1993). Since the 1850's, however, the amount and extent of suitable habitat for the delta smelt has declined dramatically. The advent in 1853, of hydraulic mining in the Sacramento and San Joaquin Rivers, lead to increased siltation and alteration of the circulation patterns of the Estuary (Nichols et al. 1986, Monroe and Kelly 1992). The reclamation of Merritt Island for agricultural purposes, in the same year, marked the beginning of the present-day cumulative loss of 94 percent of the estuary's tidal marshes (Nichols et al. 1986, Monroe and Kelly 1992).

In addition to this degradation and loss of estuarine habitat, the delta smelt has been increasingly subject to entrainment, upstream or reverse flows of waters in the Delta and San Joaquin River, and constriction of low salinity habitat in the less productive, deep-water river channels of the Delta (Moyle et al. 1992). These adverse conditions are primarily a result of the steadily increasing proportion of water diverted from the Delta by the Federal and State water projects (Monroe and Kelly 1992). Water delivery through the Federal Central Valley Project began in 1940. The State Water Project began delivering water in 1968. However, the proportion of fresh water being diverted has increased since 1983, and has remained at extremely high levels ever since (Moyle et al. 1992). The high proportion of fresh water exported has exacerbated the already harsh environmental conditions experienced by the delta smelt during the last six drought years. As a result of the 1993 above-normal water year and implementation of the 1993 delta smelt biological opinion mitigation requirements, low salinity habitat was pushed westward of Roe Island at the beginning of the year and gradually has been pulled eastward to its present position in the western Delta as inflow has decreased and water exports have increased. As a result, of this more favorable placement of low salinity habitat in 1993, the fall midwater trawl index shows that adult delta smelt abundance has increased.

Several monitoring studies conducted by CDFG and the University of California, Davis (Moyle and Herbold 1989, Stevens et al. 1990, Moyle et al. 1992) have demonstrated that from 1983 to 1992, the delta smelt population had remained at consistently low levels. Seven abundance indices used to record trends in the status of the delta smelt showed that this species had not previously suffered as consistently low population levels as those experienced in the last ten years (Stevens et al. 1990). These same indices also show a pronounced decline from historical levels of abundance. The summer tow net abundance index is thought to be one of the more representative indices since data has been collected over a wide geographic area (from San Pablo Bay upstream through most of the Delta) for the longest period of time (since 1959). Figure 1 shows the distribution of summer tow net sampling sites. The summer tow net abundance index measures the abundance and distribution of larval delta smelt and provides data on the recruitment potential of the species. Except for one year (1986), this index has remained at low levels since 1983 (Figure 2).

The second longest running study (since 1967), the fall midwater trawl abundance index, measures the abundance and distribution of adult delta smelt in a large geographic area (San Pablo Bay upstream to Rio Vista on the Sacramento River and Stockton on the San Joaquin River, Figure 3) and provides an indication of their survivorship to the later months of their one-year life span. Figure 4 shows that until recently, this index has dropped over the past 20 years.

Figure 5 summarizes the results of seven surveys currently done by the Interagency Ecological Study Program (IESP) that illustrate the dramatic declines in delta smelt that can be attributed to existing baseline conditions. Existing baseline conditions do not pr

outflows (6,800 cfs to 12,000 cfs) from February 1 through June 30 to transport larval and juvenile delta smelt to Suisun Bay or provide them low salinity, productive rearing habitat in this area (B. Herbold, pers. comm., 1993). Transport to the shallow reaches of Suisun Bay also allows delta smelt to disperse in a wide geographic area, thus increasing their chances for survival to adulthood.

Sacramento splittail

The Sacramento splittail, (*Pogonichthys macrolepidotus*), is a large cyprinid that can reach greater than 12 inches in length (Moyle 1976). Adults are characterized by an elongated body, distinct nuchal hump, and a small blunt head with barbels usually present at the corners of the slightly subterminal mouth. This species can be distinguished from other minnows in the Central Valley of California by the enlarged dorsal lobe of the caudal fin. Splittail are a dull, silvery-gold on the sides and olive-grey dorsally. During the spawning season, the pectoral, pelvic and caudal fins are tinged with an orange-red color. Male develop small white nuptial tubercles on the head.

Splittail are endemic to California's Central Valley where they were once widely distributed (Moyle 1976). Historically, splittail were found as far north as Redding on the Sacramento River and as far south as the site of Friant Dam on the San Joaquin River (Rutter 1908). Rutter (1908) also found splittail as far upstream as the current Oroville Dam site on the Feather River and Folsom Dam site on the American River. Anglers in Sacramento reported catches of 50 or more splittail per day prior to damming of these rivers (Caywood 1974).

In recent times, dams and diversions have increasingly prevented upstream access to large rivers and the species is restricted to a small portion of its former range (Moyle and Yoshiyama 1992). Splittail enter the lower reaches of the Feather (Jones and Stokes 1993) and American Rivers (Charles Hanson, State Water Contractors, in litt., 1993) on occasion, but the species now largely is confined to the Delta, Suisun Bay, Suisun Marsh, and Napa Marsh.

Splittail are long lived, frequently reaching five to seven years of age. Females are highly fecund and each produces over 100,000 eggs. Populations fluctuate annually depending on spawning success. Spawning success is highly correlated with fresh water outflow and the availability of shallow-water habitat with submerged vegetation (Daniels and Moyle 1983). Splittail usually reach sexual maturity by the end of their second year. There is some variability in the reproductive period since older fish reproduce before younger individuals (Caywood 1974). The onset of spawning is associated with rising temperature and peaks from the months of March through May, although there are records of spawning from late January to early July (Wang 1986). Spawning occurs over flooded vegetation in tidal freshwater and euryhaline habitats of estuarine marshes and sloughs and slow-moving reaches of large rivers. Larvae remain in shallow, weedy areas close to spawning sites and move into deeper water as they mature (Wang 1986).

Splittail are benthic foragers that feed on opossum shrimp, although detrital material makes up a large percentage of their stomach contents (Daniels and Moyle 1983). Earthworms, clams, insect larvae, and other invertebrates are also found in the diet. Predators include striped bass and other piscivores. Splittail are sometimes used as bait for striped bass. Although this occurs it is not a common practice.

Splittail can tolerate salinities as high as 10-18 parts per thousand (Moyle 1976, Moyle and Yoshiyama 1992). Splittail are found throughout the Delta, Suisun Bay and the Suisun and Napa marshes. They migrate upstream from the brackish areas to spawn in freshwater.Because they require flooded vegetation for spawning and rearing, splittail are frequently found in areas subject to flooding.

The 1983-1992 decline in splittail abundance is concurrent with hydrologic changes to the Sacramento-San Joaquin Estuary. These changes include increases in water diversions during the spawning period of January through July and dams that limit upstream migration. Diversions, dams and reduced outflow, coupled with severe drought years, introduced aquatic species such as Asiatic clam (Nichols et al. 1990), and loss of wetlands and shallow-water habitat (CDFG 1992) appear to have reduced the species' capacity to reverse its decline.

Effects of the Action

Disturbance to Clapper Rail Breeding Territories

According to the Biological Assessment, the proposed pier construction and demolition could disrupt clapper rails breeding within the vicinity of the pier. The degree of this disturbance likely would depend upon the proximity of individual rails and nests and the timing within the breeding season, and could result in increased competitive interactions, territory boundary shifts, or territory abandonment.

During a recent telemetry study of clapper rails in south San Francisco Bay, researchers observed an individual rail leaving an established territory in the Laumeister Marsh during the breeding season when apparently disturbed by a PG&E work crew in April 1992. The rail disturbed in Laumeister Marsh left a small, well-defined territory and subsequently moved throughout a large 37-acre area within the marsh and was unable to establish a new territory within the breeding period (USFWS, unpubl. data). As a result of this territorial abandonment, the opportunity for successful reproduction during the breeding season was eliminated (J. Takekawa, pers. comm., 1993). Data from this telemetered rail suggest that increased human activity and associated noise within a rail's established territory can significantly alter the normal behavioral patterns of rails during the breeding season, possibly resulting in extensive movements, lack of reproductive success, or territory abandonment.

Disturbance to rails inhabiting territories adjacent to the pier could be significant if pier construction or demolition occurs during the clapper rail breeding season. The level of disturbance to the additional breeding pairs located within the tidal marsh at Goodyear Slough may be buffered to some extent by distance.

Approximately 108 acres of tidal marsh habitat suitable for rails lies in the vicinity of the Reserve Fleet Maintenance Facility at Goodyear Slough. Based on past breeding season call counts by the CDWR, 6 pairs of rails may inhabit this marsh area (B. Grewell, pers. comm., 1994). Preliminary analysis of data from telemetry work conducted by San Francisco Bay Refuge staff show the average size of rail breeding territories monitored in the south Bay to be 15.7 acres (USFWS, unpubl. data). Based on this information and the observation of rails calling from underneath the pier during the breeding season, it is likely that the pier lies within a territory of one pair of clapper rails and may lie near several additional rail territories.

Construction and demolition of the pier during the breeding season could cause rails to shift or abandon their territories. The ability of rails to reestablish new breeding territories could be severely hampered by limited habitat available in the vicinity of the pier to establish a new territory and the fact that rails tenaciously defend established breeding territories from intrusions by other rails. Furthermore, suitable tidal marsh habitat along remaining portions of Goodyear Slough also is limited and disturbed rails could be forced to move considerable distances across marginal habitat in search of suitable unoccupied habitat. Such movement by a pair of rails from its established territory could significantly increase the risk of predation and mortality. Survival of displaced rails likely would be less than survival of rails that remain in established territories. In a telemetry study of light-footed clapper rails in southern California, Zembal and Massey (1988) found that three out of six telemetered rails that moved extensively were preyed upon within a relatively short period of time. By comparison, seven other rails that remained sedentary within established territories were not preyed upon during the telemetry period. Loss of one female rail also would constitute the loss of potential progeny to the Suisun Marsh population into the future.

Loss of Marsh Habitat

According to the Maritime Administration Maintenance Facility Project Description, dated April 1994, construction of the new pier and associated facilities would directly impact or disturb about 9,100 square feet (0.21 acre) of tidal marsh. This habitat provides foraging and possibly nesting habitat for clapper rails currently occupying a territory at this location. Demolition of the existing pier would temporarily expose an area of 12,450 square feet (0.29 acre). This footprint area would be expected to revegetate naturally within an estimated 2 to 4 years. Thus, once revegetation occurred, there would be a net increase of 3,350 square feet (0.08 acre) of tidal marsh at the project site.

Before the old pier footprint revegetates, however, this area would be unsuitable habitat for clapper rails. Any rail attempting to cross the unvegetated pier footprint would be subject to an increased risk of predation until revegetation occurred, further adding to predation threats to rails described above. There would also be a temporary deficit of 0.21 acre of available foraging and possibly nesting habitat within the territory. The loss of 0.21 acre of habitat within an established rail territory and the temporary exposure of 0.29 acre of mudflat in the territory could compromise the territory's overall value in the year that these impacts occurred. These impacts could result in temporary (2-4 years) or permanent abandonment of the territory by the current occupants.

Loss/Disturbance of Subtidal, Shallow-water Habitat

How will it destroy?

Construction of the new pier will destroy an undetermined a shallow-water habitat which may be used by delta smelt and S splittail for spawning, rearing, and refugial habitat. Remo existing pier would also result in an undetermined amount of destruction.

Construction of the new pier and removal of the old pier woul .. result in sediment mobilization which would interfere with fish movement, result in losses of deposited eggs, cover submersed aquatic plants and other substrates that provide spawning and refugial habitat, and mobilize contaminants that would have acute and chronic effects on various life-stages of delta smelt and Sacramento splittail. Food organisms of delta smelt and Sacramento splittail would also be effected by mobilized sediments. These sediments would move due to tidal, wind and current action, and effect habitat, fish, and food organisms outside of the immediate project area.

Summary

1) Disturbances from construction and demolition activities during the breeding season from February through August create the likelihood for rails to abandon one to two breeding territories within the tidal marsh surrounding the Facilities Maintenance pier. The Service assumes this could result in the loss of reproductive success during the breeding season, and/or possible mortality of displaced individual birds. Any combination of the above would result in a net reduction in the long-term reproductive contribution to the population.

2) Construction of the new pier would result in the loss of about 0.21 acre of tidal marsh habitat currently available to clapper rails for foraging and possibly nesting. Demolition of the existing pier would result in a temporary exposure of 0.29 acres of unvegetated mudflat that would be unsuitable clapper rail habitat and expose any rails remaining in the pier area to an increased risk of predation until revegetation occurred.

3) Construction of the new pier and removal of the old pier would result in an undetermined loss of spawning, rearing, and refugial habitat for delta smelt and Sacramento splittail.

4) Construction of the new pier and removal of the old pier would result in mobilization of sediments that would effect fish, food organisms, and habitat within and outside of the project area.

Based on our analyses above, the increased probability of adverse effects to a low number of individuals, including progeny, and temporary loss of a small area of habitat, the proposed project would not appreciably reduce the likelihood of survival and recovery of the endangered California clapper rail, delta smelt, or Sacramento splittail in the wild.

Cumulative Effects

Cumulative effects are those impacts of future non-Federal actions affecting listed species that are reasonably certain to occur in the action area. Future Federal actions are subject to the consultation requirements under section 7 of the Act and, therefore, are not considered cumulative to the proposed action.

Cumulative effects on the clapper rail include ongoing habitat conversion from salt to brackish conditions by fresh water effluent from the San Jose/Santa Clara Water Pollution Control Plant. The San Francisco Bay Regional Water Quality Control Board routinely renews discharge permits that allow marsh conversion to continue. Although the most recent permit renewal contained a mitigation measure to replace about 275 acres of former salt marsh that has converted to largely unsuitable brackish marsh conditions, it has yet to be implemented. Other cumulative effects include chemical contamination from point and non-point discharges that may adversely affect survival rates and reproductive success.

Cumulative effects on the delta smelt and Sacramento splittail include any future diversions of water that may entrain adult, juvenile or larval fish or that may decrease outflows incrementally, thus shifting the position of the delta smelt's preferred habitat, identified as the "entrapment zone." Water diversions through intakes serving numerous small, private agricultural and duck clubs in the Delta, upstream of the Delta, and in Suisun Bay contribute to these cumulative effects. These diversions also include municipal and industrial uses, as well as providing water for power plants. State or local levee maintenance and channel dredging activities would also contribute to cumulative effects.

Associated with decreased Delta outflow is increased salt water intrusion, which facilitates incursion of and an increase in the range and population of competing organisms, such as the asian clam. These organisms compete with the delta smelt for food microorganisms.

Cumulative effects include point and non-point source chemical contaminant discharges. These contaminants include selenium and numerous pesticides and herbicides associated with discharges related to agricultural and urban activities. Implicated as potential sources of mortality or sublethal effects in delta smelt, these contaminants may adversely affect smelt reproductive success and survival rates.

Cumulative effects also include destruction of habitat and mobilization of sediments through dredging and pile driving as part of channel maintenance, levee maintenance, and marina construction.

Cumulative effects, operating together with those of the proposed action, are not likely to appreciably reduce the likelihood of survival and recovery of the California clapper rail, delta smelt, or Sacramento splittail.

Incidental Take Statement

Sections 4(d) and 9 of the Act, as amended, prohibit taking (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Under the terms of §7(b)(4) and §7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. The measures described below are nondiscretionary, and must be undertaken by the agency so that they become binding conditions of any authorization granted to the applicant for the exemption under §7(o)(2) to apply.

The Federal agency has a continuing duty to regulate the activity that is covered by this incidental take statement. If the agency fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the authorization, the protective coverage of §7(o)(2) may lapse.

For the California clapper rail, we anticipate that harassment and/or harm of one to two pairs of rails would result from the proposed action. Reduced availability of refugial habitat would subject rails to increased risk of predation. Territorial abandonment by rails could result in harassment and/or harm of individual rails and breeding failure. Construction activities would directly impact about 0.21 acre of rail foraging and possibly nesting habitat. Demolition activities would result in the temporary exposure of 0.29 acres of

mudflat within an occupied rail territory, thereby increasing the risk of predation to rails in this area.

For delta smelt and Sacramento splittail, we anticipate the loss, harassment, and/or harm of an undetermined number of egg, larval, juvenile, and adult fish from the proposed action. Reduced availability of refugial habitat would subject delta smelt and Sacramento splittail to increased risk of predation. Construction and pier removal activities would destroy an undetermined amount of spawning and rearing habitat for these fish. Construction and pier removal activities would result in sediment mobilization that would result in loss, harassment, and/or harm of an undetermined number of egg, larval, juvenile, and adult delta smelt and Sacramento splittail.

The Service establishes the following reasonable and prudent measures to minimize the impact of incidental take. The measures described below are nondiscretionary, and must be implemented by the Department of the Army.

1) The potential for harassment, harm (including habitat modification), or mortality to California clapper rails shall be minimized.

2) Measures shall be taken to offset the temporary loss of California clapper rail and delta smelt/Sacramento splittail habitat.

3) Measures shall be taken to minimize mobilization of sediments within and outside the project area.

To be exempt from the prohibitions of Section 9 of the Act, the following terms and conditions, which implement the reasonable and prudent measures described above, must be complied with, and included as special conditions in any permit granted by the Department of the Army for this project.

The following term and condition implements reasonable and prudent measure #1:

> Pier construction and demolition activities on the landward side of the Administration Barge (at its current location) shall not occur during the period from February through August within any given year to avoid possible disruption of breeding activities by rails.

The following terms and conditions implement reasonable and prudent measure #2:

a) The applicant shall prepare and implement a detailed California clapper rail habitat restoration plan which compensates for the temporary loss of rail habitat associated with the proposed action. The plan shall describe all measures to be taken to restore rail habitat conditions within the footprint of the old pier. Suitable [illegible] mitigation

for the temporal loss of this habitat (12,450 square feet) shall be incorporated into the plan. The plan shall be submitted to the Service and Corps for review and approval within six months of commencement of pier construction work. An approved rail habitat restoration plan shall be implemented by December 31, 1995.

b) The applicant shall survey for delta smelt and Sacramento splittail spawning and rearing habitat and replace losses at a 3:1 in-kind ratio and maintained in perpetuity. The 3:1 replacement ratio results from lack of full restoration of lost habitat for a number of years and with replaced habitat potentially having lesser value than that lost. A plan for this replacement and maintenance shall be submitted to the Service and Corps for review and approval prior to construction or demolition work. The timeframe for replacement shall be the same as that contained within the rail plan of approval by the Service within 6 months of commencement of pier construction work.

The following term and condition implements reasonable and prudent measure #3:

A plan shall be submitted to the Service before construction or demolition activities begin that details practices that will be used to minimize mobilization of sediments within or outside of the construction area.

If, while constructing the new pier and related facilities or demolishing the old pier, the amount or extent of incidental take of the California clapper rail or delta smelt is exceeded, the causative action shall cease and consultation shall be reinitiated immediately.

The Service shall be notified within twenty-four (24) hours of the finding of any injured or dead California clapper rail or their eggs, or delta smelt, or any unanticipated damage to clapper rail or delta smelt habitat associated with project construction. Notification must include the date, time, and precise location of the specimen/incident, and any other pertinent information. The Service contact persons are Karen Miller or Bob Pine (916/978-4866). Any dead or injured specimens shall be reposited with the Service's Division of Law Enforcement, 2800 Cottage Way, Sacramento, California 95825-1846 (916/978-4860).

This concludes formal consultation on the proposed work described above. Reinitiation of formal consultation is required if (1) the amount or extent of incidental take is exceeded, as previously described; (2) new information reveals effects of the actions that may affect listed species or critical habitat in a manner that was not considered in this opinion; (3) if the project is substantially modified in a manner that causes an effect to listed

species that was not considered in this opinion; and/or (4) if a new species is listed or critical habitat is designated that may be affected by the action. If you have any questions regarding this opinion, please contact Karen Miller or Bob Pine of my staff at (916) 978-5408.

Jim B[illegible] REPLACED KAREN

Sincerely,

Joel A. Medlin

Joel A. Medlin
Field Supervisor

Enclosures

cc: RD (ARD-ES), Portland, OR
DHC, Washington, D.C.
CDFG, Region III, Yountville, CA
CDFG, Environmental Services, Sacramento, CA

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Personal Communications

Grewell, B., California Department of Water Resources, 3251 S Street, Sacramento, California 95816.

Harding-Smith, E., U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge, P. O. Box 524, Newark, California 94560.

Herbold, B., Environmental Protection Agency, 1235 Mission Street, San Francisco, CA 94103.

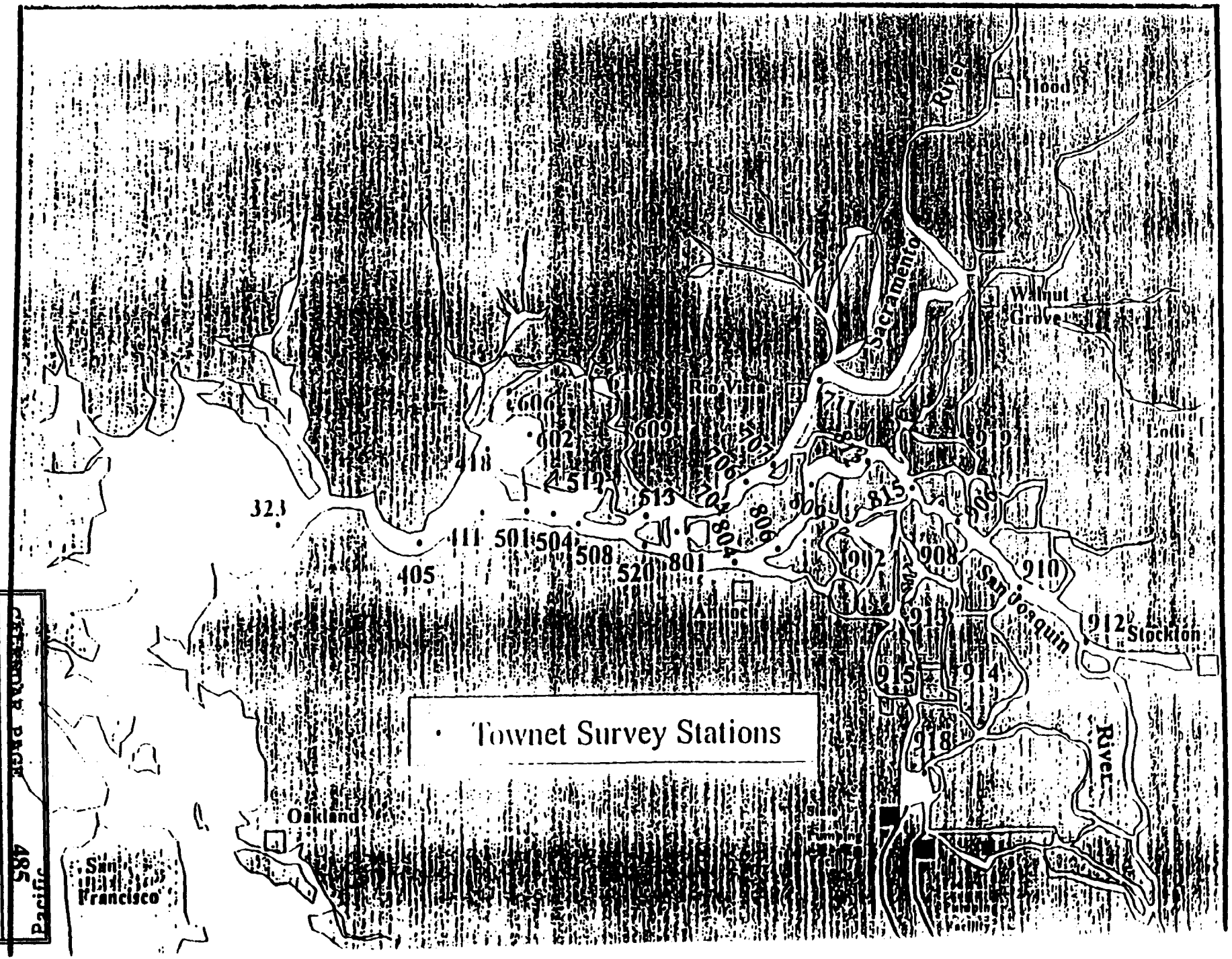
Meng, L., U.S. Fish and Wildlife Service, 2800 Cottage Way, Sacramento, California 95825.

Moyle, P., University of California, Davis, California 95616.

Sweetnam, D., California Department of Fish and Game, Bay-Delta and Special Water Projects Division, 4001 N. Wilson Way, Stockton, CA 95205-2424.

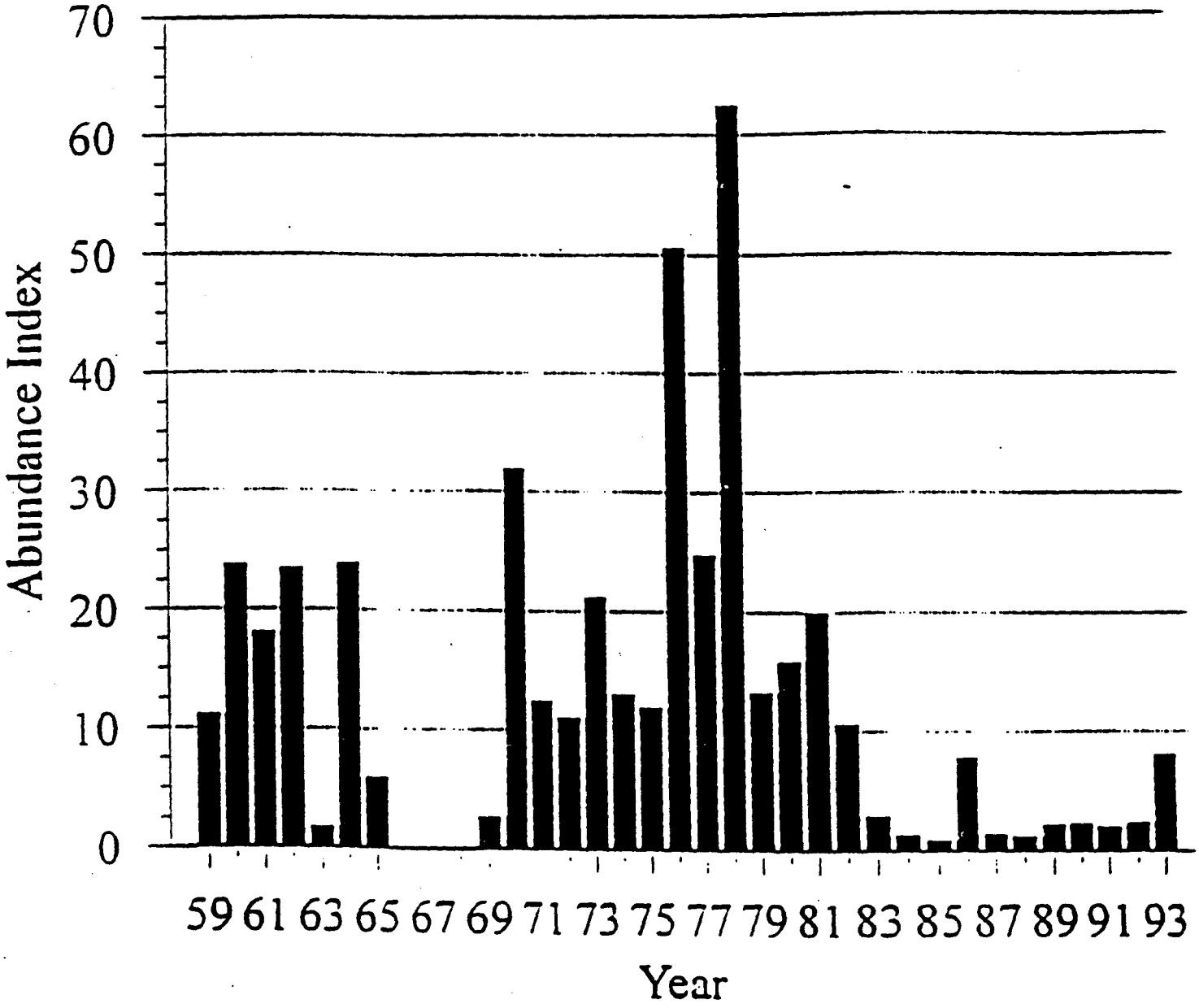
Takekawa, J., U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge, P. O. Box 524, Newark, California 94560.

Figure 1. Summer townet survey stations.



Summer Townet Abundance Inde:

Delta Smelt



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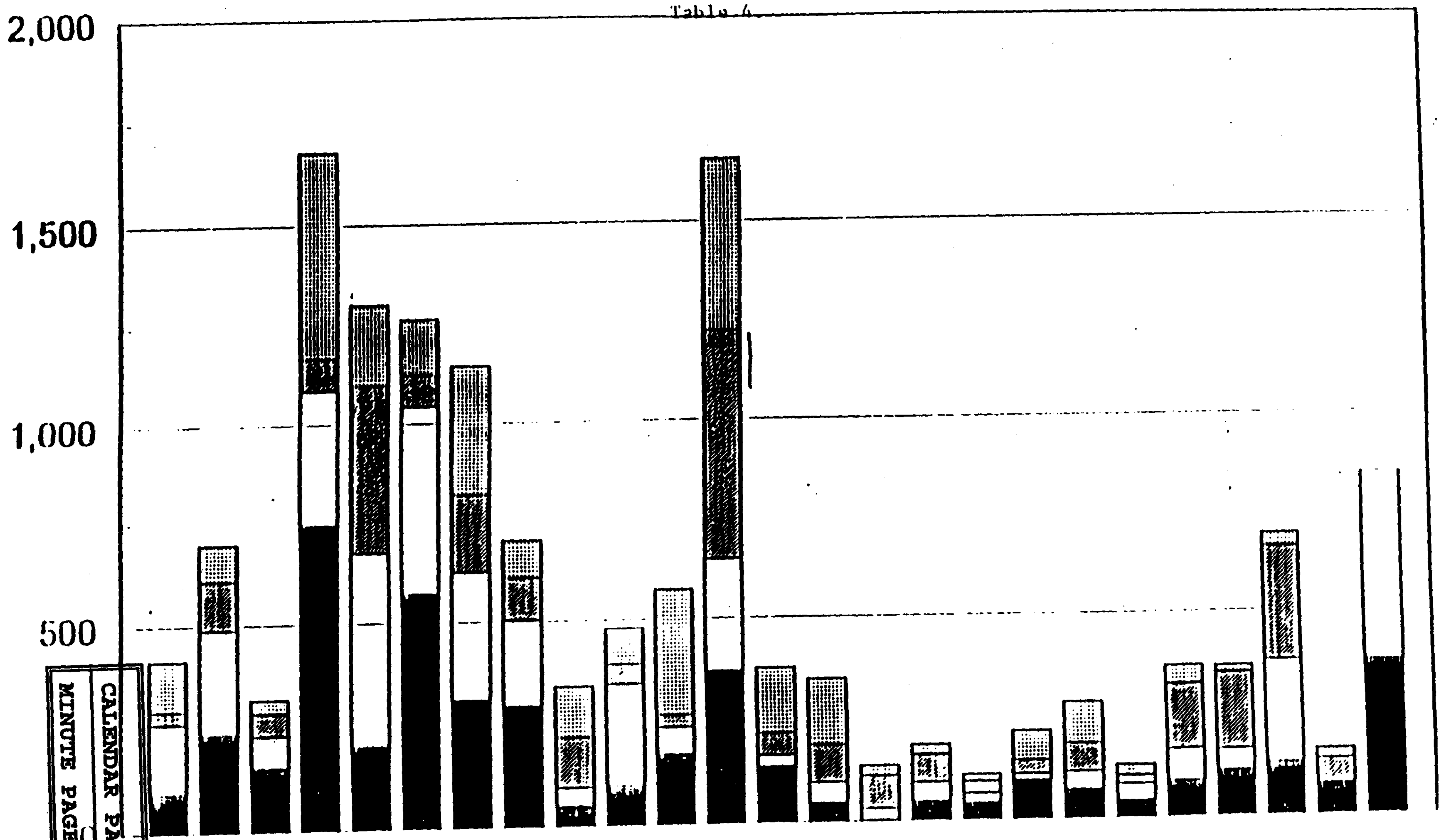
Delta Smelt Fall Midwater Trawl Abundance Index

Table 4



Year	67	68	69	70	71	72	73	75	76	77	78	80	81	82	83	84	85	86	87	88	89	90	91	92	93
[illegible]	93.4	234.7	149.8	741.6	197.4	571.6	307.9	290.5	49.8	97.5	166.9	368.6	132.4	44.8	2.1	47.0	40.7	92.1	71.0	41.6	88.1	109.5	125.9	71.5	374.6
Oct	165.2	253.4	76.8	343.0	473.1	472.0	312.4	213.7	42.2	242.5	64.7	273.7	27.3	47.4	28.0	43.7	23.6	15.1	39.6	40.7	74.7	49.7	249.2	3.5	470.0
Nov	31.1	110.0	55.3	83.1	427.7	81.1	198.2	102.3	120.9	51.7	31.1	586.2	54.2	91.8	77.9	66.6	28.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

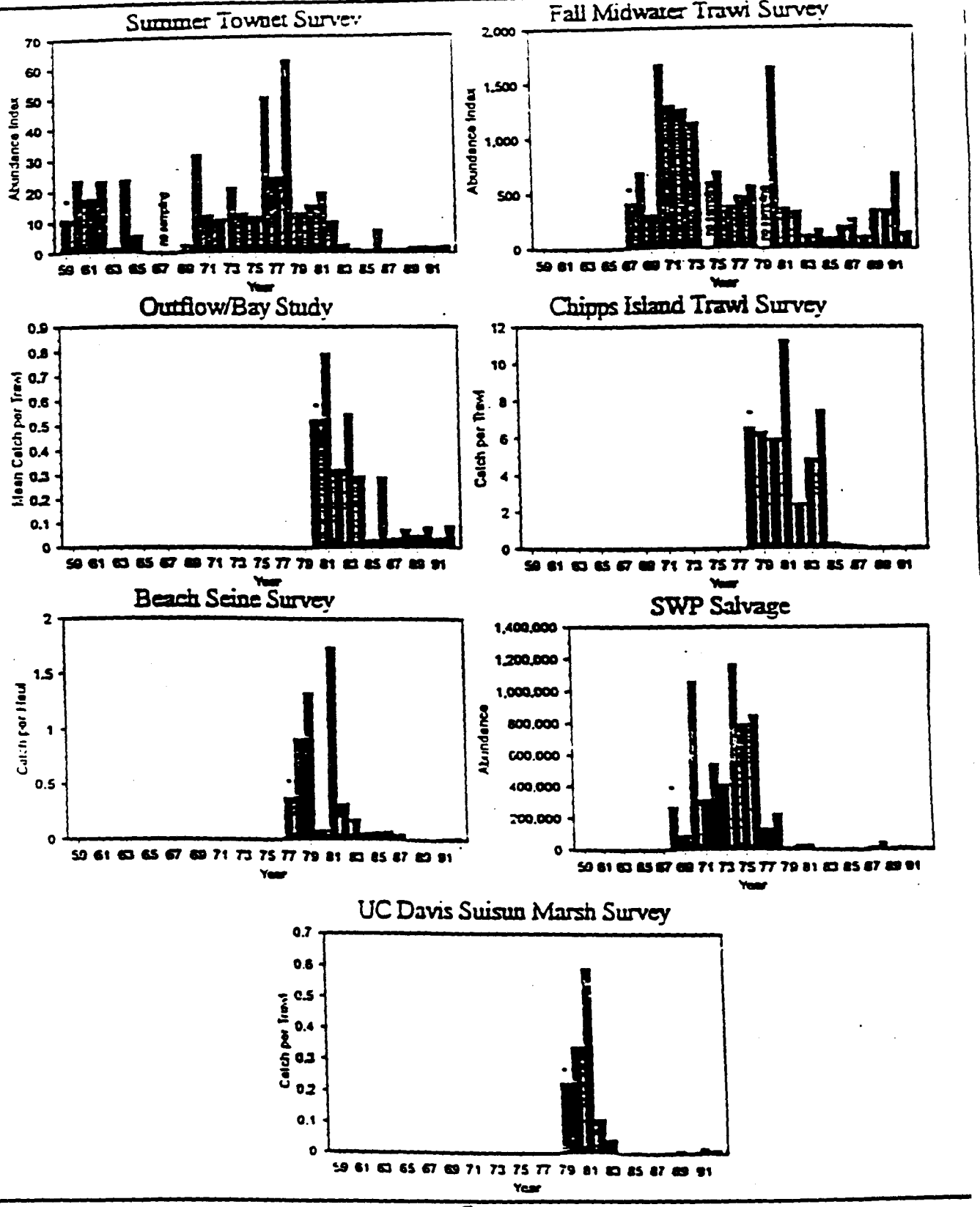


Figure 5.
TRENDS IN DELTA SMELT POPULATIONS, AS INDEXED BY SEVEN INDEPENDENT SURVEYS
Note that not all surveys were conducted in all years shown.
Source: Sweetnam and Stevens 1993, updated from Stevens et al 1990

Summary of Effects due to Mitigation

Short term/ immediate effects

increase in tidal circulation

drown minimal lower marsh vegetation

increase current velocities

increase nutrient exchange

reduce sedimentation rate

increase tidal inundation of higher marsh

Long term effects

create availability for rail, smelt, other estuarine fish species

increase marsh productivity

not affect composition of marsh vegetation, but alter distribution and abundance

probably reduce mosquito production in marsh

probably slow or reverse invasion of marsh by exotic Pepperweed

State of California

Memorandum

To : Ms. Judy Brown
State Lands Commission
Division of Environmental
Planning and Management

Date : April 25, 1995

From : Department of Fish and Game

Subject : State Lands File Ref: W251121

Attached is the Department of Fish and Game's informal consultation for the Maritime Administration's proposed project at the Reserve Fleet, Solano County. This project is further referenced as U.S. Army Corps of Engineers (Corps) Public Notice 20525E10.

Included as part of the Department's informal consultation is the January 1995 mitigation plan for the project. This plan was developed by Corps staff.

If you have any questions regarding this consultation, please contact Mr. Dennis Becker, Senior Wildlife Biologist, at (707) 425-3828.

John Turner, Chief
Environmental Services Division

Attachment

cc: Mr. David Ammerman
U.S. Army Corps of Engineers
San Francisco

Mr. Dennis Becker
Department of Fish and Game
Yountville

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CALIFORNIA ENDANGERED SPECIES ACT (CESA)
BIOLOGICAL OPINION FOR

CALIFORNIA STATE LANDS COMMISSION

Maritime Administration Pier Project, Solano County

SUMMARY

Pursuant to Section 2090 of the California Endangered Species Act (CESA) the California State Lands Commission (hereinafter "commission") has requested consultation with the California Department of Fish and Game (hereinafter Department) to determine if the Maritime Administration (MARAD) project to demolish an existing wooden pier and causeway; to construct a new 1,400 foot long pile supported pier, and other related facilities at the Suisun Bay National Defense Reserve fleet (hereinafter "Project") would jeopardize the continued existence of any State-listed rare, threatened, or endangered species or result in the destruction and adverse modification of habitat essential to the continued existence of any listed species. The State (and Federally)-listed endangered California clapper rail (Rallus longirostris obsoletus), the threatened Delta smelt (Hypomesus transpacificus), the proposed for listing Sacramento splittail (Pogonichthys macrolepidotus); and the endangered Winter run chinook salmon (Oncorhynchus tshawytscha) occur in the project area. It is the Department's determination that the project would not likely jeopardize the continued existence of any listed or sensitive species, provided the conditions to avoid jeopardy and minimize take identified in this Biological Opinion are fully implemented and adhered to. The protection, enhancement, and long-term management of habitat for the California clapper rail, Delta smelt, and Sacramento splittail at a location described in the attached mitigation plan which is acceptable to the Department will offset the project impacts and will result in preserving core areas for the species in order to achieve sustainable populations. For the winter run salmon the National Marine Fisheries Service (NMFS), in their letter dated April 25, 1994, indicated Section 7 formal consultation is concluded with no jeopardy since the activities are limited to the installation of concrete pilings and that a new pier should reduce the long-term impacts to the salmon since the need for periodic dredging would be eliminated. The Department concurs with this determination.

PROJECT DESCRIPTION

The project consists of the following major features: (1) a 1,400 foot long concrete pile-supported pier with a concrete pile-supported pier head; (2) two mooring dolphins (pile clusters) for

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the APL vessel; (3) a series of five floating finger docks connected by a floating pier; (4) utility lines for water and sewer; (5) construction of a new electrical substation and associated electrical system; and (6) to demolish an existing wooden pier, causeway, electrical substation and associated power poles.

The Suisun Bay National Defense Fleet (Reserve Fleet) is located in northwest Suisun Bay, Solano County. It is north of Army Point and the Carquinez Strait.

The vegetative community on and adjacent to the site consists of northern coastal salt marsh and coastal brackish marsh. Ruderal or disturbed habitat landward of the site has saltgrass, gumplant, and prickly lettuce, but is largely dominated by non-native plants.

The project will result in temporary construction impacts to 8,339 square feet of brackish marsh and 5,239 square feet of mudflats. Long-term impacts are to: 10,920 square feet of ruderal habitat with utility lines; decreased net impacts to brackish marsh of 3,847 square feet by removing the pier/causeway, dolphins, and substation and adding utility lines; decreased impact to mudflats by removing the pier/causeway and, dolphins; and increased net impact to open water of 10,993 square feet by the new pier/ causeway, and removing dolphins and floating docks and barges.

The above temporary and long-term habitat impacts may affect California clapper rail, Delta smelt and Sacramento splittail.

LISTED SPECIES

Based on biological studies of the project site and adjacent areas, the following State-listed threatened and/or endangered and/or candidate species, more specifically, the California clapper rail, Delta smelt and Sacramento splittail may use the project area. A summary of the life history information for each species follows:

California Clapper Rail

The California clapper rail is a State and Federally listed endangered species. Habitat is tidal salt marshes around San Francisco, Suisun, San Pablo, and Southhampton Bays and Elkhorn Slough. Surveys in the Suisun Marsh have shown limited populations in both numbers and distribution.

In the Suisun Marsh, Cut-Off Slough, Hill Slough, Goodyear Slough and Suisun Bay, and tidal marshes in the southwest Suisun Bay are breeding and nesting areas for California clapper rail.

Generally, it forages in higher marsh vegetation, along the mud flat and vegetation interface. It eats clams, mussels, crabs,

snails, insects, spiders and worms. It prefers mature stands of cattails and tules along the bays and tidal sloughs.

In general, the rail breeds from mid-March through July with peaks in May and June. Breeding activity has been recorded as late as the end of August and in February.

Delta Smelt

The following information was consolidated from the U.S. Fish and Wildlife Service Biological Opinion to the U.S. Corps of Engineers on PN R20066-E98, August 29, 1994.

Historically, the delta smelt is thought to have occurred from Suisun Bay upstream to the City of Sacramento on the Sacramento River and Mossdale on the San Joaquin River. The delta smelt is a euryhaline species (tolerant of a wide salinity range) that spawns in fresh water and has been collected from estuarine waters up to 14 parts per thousand (ppt) salinity. For a part of its annual life span, the distribution of juvenile smelt tends to be centered near the freshwater edge of the entrapment zone (EZ) (mixing zone at the saltwater-freshwater interface), where the salinity is approximately 2 ppt.

The Delta smelt is adapted to living in the highly productive Sacramento-San Joaquin River Estuary (Estuary) where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Shortly before spawning, adult Delta smelt migrate upstream from the brackish-water habitat associated with the entrapment zone to disperse widely into river channels and tidally influenced backwater sloughs. Delta smelt spawn in shallow, fresh or slightly brackish water and most spawning occurs in tidally influenced backwater sloughs and channel edgewaters. The adhesive, demersal eggs are thought to attach to substrates such as cattails and tules, tree roots, and submerged rocks and branches.

Delta smelt may spawn north of Suisun Bay in Montezuma and Suisun sloughs and their tributaries as well as many sloughs and channels in the Delta.

The spawning varies from year to year and may occur from late winter (December) to early summer (July) Gravid adults have been collected from December to April, although ripe Delta smelt were most common in February and March. It was estimated that spawning had taken place from mid-February to late June or early July, with the peak spawning period occurring in late April and early May in 1989 and 1990.

Delta smelt eggs hatched in 9-14 days at temperatures from 13-16°C during laboratory observations. After hatching, larvae and juveniles are transported downstream toward the entrapment zone

where they tend to be retained by the vertical circulation of fresh and salt waters. The pelagic larvae and juveniles feed on zooplankton. When the entrapment zone is located in a broad geographic area with extensive shallow-water habitat within the euphotic zone (depths less than four meters), high densities of phytoplankton and zooplankton accumulate.

Sacramento Splittail

The following information was consolidated from the U.S. Fish and Wildlife Service Biological Opinion the U.S. Corps of Engineers on PN R20066-E98, August 29, 1994.

The Sacramento splittail is a large cyprinid that can reach greater than 12 inches in length. Adults are characterized by an elongated body, distinct nuchal hump, and a small blunt head with barbels usually present at the corners of the slightly subterminal mouth.

Splittail are endemic to California's Central Valley where they were once widely distributed. In recent times, dams and diversions have increasingly prevented upstream access to large rivers and the species is restricted to a small portion of its former range. Splittail enter the lower reaches of the Feather and the American Rivers on occasion, but the species now largely is confined to the Delta, Suisun Bay, Suisun Marsh, and Napa Marsh.

Splittail are long lived, frequently reaching five to seven years of age. Spawning success is highly correlated with fresh water outflow and the availability of shallow-water habitat with submerged vegetation. Splittail migrate upstream to spawn, similar to delta and longfin smelt. The onset of spawning is associated with rising temperature and peaks from the months of March through May, although there are records of spawning from late January to early July. Spawning occurs over flooded vegetation in tidal freshwater and euryhaline habitats of estuarine marshes and sloughs and slow-moving reaches of large rivers. Larvae remain in shallow, weedy areas close to spawning sites and move into deeper water as they mature.

Splittail are benthic foragers that feed on opossum shrimp, although detrital material makes up a large percentage of their stomach contents. Earthworms, clams, insect larvae, and other invertebrates are also found in the diet. Predators include striped bass and other piscivores. Splittail are sometimes used as bait for striped bass. Although this occurs it is not a common practice.

EFFECTS ON LISTED SPECIES

The California clapper rail, Delta smelt, and Sacramento splittail may be subject to direct and indirect adverse impacts and potential take associated with the construction of Maritime Administration

pier project. The project area where impacts to these species may occur encompasses about two acres.

Following is a more detailed discussion of potential impacts:

1. Pier construction and demolition activities landward of the existing Administration Barge may temporarily impact habitat of the California clapper rail. Noise during these activities may interfere with breeding activities.

2. Piling placement may cause turbidity which may impact fish species and spawning habitat.

3. Removal of the existing causeway will impact brackish marsh and mudflat. Turbidity may impact fish species. Vegetation will be disturbed.

4. All construction and human presence has the potential to disturb rails using adjacent brackish marsh.

CONDITIONS TO AVOID JEOPARDY AND MINIMIZE INCIDENTAL TAKE

Fish and Game Code Section 2091 requires the Department to determine and specify to the State lead agency reasonable and prudent alternatives consistent with conserving the species which would avoid jeopardizing the continued existence of the species. Section 2091 also requires the Department to specify reasonable and prudent measures to minimize the adverse impacts of taking which occurs incidental to the project. The following provisions constitute our conditions pursuant to CESA, and if fully implemented, the project is unlikely to jeopardize the continued existence of the listed (and sensitive) species identified above, and the adverse impacts from incidental take of the species will be minimized.

REASONABLE AND PRUDENT MEASURES

1. Implement the Mitigation Plan for this project (see attached).

2. Pier construction and demolition activities landward of the Administration Barge shall not take place from February through August to avoid impacting nesting activities of rails.

3. Placement of pilings should be accomplished with the placement of sediment curtains to minimize movement of sediments. This activity should not occur between the months of mid-December to July in order to avoid spawning season of the Delta smelt and Sacramento splittail.

INCIDENTAL TAKE STATEMENT

Pursuant to Section 2090 of CESA, the Department determines that the potential to take California clapper rail, Delta smelt, and Sacramento splittail incidental to the project does exist. Loss of individuals may occur as result of project construction and operation. Section 2091 of CESA requires the Department to determine and specify to the State lead agency "reasonable and prudent measures that are necessary and appropriate to minimize the adverse impacts of the incidental taking." The department has determined that if the project conditions identified in this Biological Opinion are fully implemented and adhered to, then the adverse impacts of any incidental take will be minimized.

DEPARTMENT FINDINGS

If the above-written conditions of this CESA Biological Opinion are implemented in a timely manner, as provided herein, the Department finds that the construction of the project will not result in jeopardy to the continued existence of the listed and candidate species and may, through the acquisition of habitat lands, protect the species from further degradation.

CALIFORNIA DEPARTMENT
OF FISH AND GAME

BY:_____

TITLE:_____

DATED:_____

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

APR 25 1994 F/SW022:CTM

Mr. William C. Angeloni
Chief, Planning/Engineering Division
San Francisco District
Corps of Engineers
211 Main Street
San Francisco, California 94105

Dear Mr. Angeloni:

This letter responds to your request for the National Marine Fisheries Service's (NMFS) concurrence that the construction of a new maintenance facility pier for the Suisun Bay Fleet will not adversely affect the Federally endangered winter-run chinook salmon or its critical habitat.

Based on the available information, the winter-run chinook salmon is expected to occur seasonally at the proposed project site, which is within the species designated critical habitat. However, since the project's water-related activities are limited to the installation of concrete pilings, no adverse impacts are expected to occur to the winter-run chinook salmon or its critical habitat. Moreover, construction of the new pier should reduce long-term impacts to winter-run chinook salmon habitat since the need for periodic dredging will be eliminated. Accordingly, this concludes section 7 consultation for the proposed project. If new information becomes available indicating that winter-run chinook salmon may be adversely affected by the proposed project, further consultation will be necessary.

If you have questions concerning these comments, please contact Mr. Chris Mobley at (707) 578-7513.

Sincerely,

Rodney R. McInnis

for Gary Matlock, Ph.D.
Acting Regional Director

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Historical Resources File System

ALAMEDA, COLUSA, CONTRA COSTA, DEL NORTE, HUMBOLDT, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, SONOMA, YOLO

Northwest Information Center
Foundation Center, Bldg. 300
Sonoma State University
Rohnert Park, California 94928-3609
(707) 664-2494 • Fax (707) 664-3947

November 23, 1994

File No.: 94-SL-2

Dave Ammerman
U.S. Army Corps of Engineers
Attn: Regulatory Branch
San Francisco District
211 Main Street
San Francisco CA 94105-1905

re: No. 20525E10
The Maritime Administration

Dear Mr. Ammerman:

Records at this office were reviewed to determine if this project could adversely affect historical resources. The review for possible historic structures, however, was limited to references currently in our office. The Office of Historic Preservation has determined that any building or structure 45 years or older may be of historic value. Therefore, if the project area contains such properties they should be evaluated prior to commencement of project activities. Please note that the use of the term historical resources includes both archaeological sites and historic structures.

____ The proposed project area contains or is adjacent to the historical resource(s) ( ). A study is recommended prior to commencement of project activities.

____ The proposed project area has the possibility of containing historical resources. A study is recommended prior to commencement of project activities.

_X__ Comments: If archaeological resources, including items associated with shipwrecks, are encountered during the project, work in the immediate vicinity of the finds should be halted until a qualified archaeologist has evaluated the situation. If you have any questions please give us a call (707) 664-2494.

Sincerely,

Katherine Johnson fo

Leigh Jordan
Assistant Coordinator

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