

MINUTE ITEM

This Calendar Item No. C8  
was approved as Minute Item  
No. 8 by the State Lands  
Commission with a vote of 2  
to 0 at its 7/24/86  
meeting.

CALENDAR ITEM

C08

07/24/86  
W 23814 PRC 6999  
Lane

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APPROVAL OF A GENERAL PERMIT - PUBLIC AGENCY USE

APPLICANT: California State Coastal  
Conservancy  
1330 Broadway, Suite 1100  
Oakland, California 94612

AREA, TYPE LAND AND LOCATION:  
A 0.20-acre parcel of tide and submerged land,  
located in the Petaluma River at San Pablo Bay,  
Sonoma County.

LAND USE: Breach of the levee and channelization for a  
marsh enhancement project; dredge a maximum of  
1,200 cubic yards of minerals other than oil,  
gas and geothermal with on-site disposal.

TERMS OF PROPOSED PERMIT:  
Initial period: 49 years beginning August 1,  
1986.

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.

BASIS FOR CONSIDERATION:  
Pursuant to 2 Cal. Adm. Code 2003.

APPLICANT STATUS:  
Applicant is owner of upland.

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

CALENDAR ITEM NO. C 0 8 (CONT'D)

STATUTORY AND OTHER REFERENCES:

- A. P.R.C.: Div. 6, Parts 1 and 2; Div. 13.
- B. Cal. Adm. Code: Title 2, Div. 3; Title 14, Div. 6.

AB 884: 12/18/86.

OTHER PERTINENT INFORMATION:

1. The proposed project is part of the North Bank Site project on lands owned by the applicant. Enhancement of the lands will yield 14.5 acres of wetland habitat for the Bay Wetland Mitigation Program. All dredging materials will be used on-site for levee reconstruction.
2. A Negative Declaration was prepared and adopted for this project by California State Coastal Conservancy. The State Lands Commission's staff has reviewed the document and believes that it complies with the requirements of the CEQA.
3. The annual rental value of the site is estimated to be \$100.
4. 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.

APPROVALS OBTAINED:

Sonoma County, United States Army Corps of Engineers, and State Public Works Board.

FURTHER APPROVALS REQUIRED:

Bay Area Conservation and Development Commission.

EXHIBITS:

- A. Land Description.
- B. Location Map.
- C. Negative Declaration.

CALENDAR ITEM NO. C 0 8 (CONT'D)

IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT A NEGATIVE DECLARATION WAS PREPARED AND ADOPTED FOR THIS PROJECT BY THE CALIFORNIA STATE COASTAL CONSERVANCY AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.
2. DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT ADVERSE EFFECT ON THE ENVIRONMENT.
3. FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED FOR THE LAND PURSUANT TO P.R.C. 6370, ET SEQ.
4. AUTHORIZE ISSUANCE TO CALIFORNIA STATE COASTAL CONSERVANCY OF A 49-YEAR GENERAL PERMIT - PUBLIC AGENCY USE BEGINNING AUGUST 1, 1986; 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 LEVEE BREACH AND CHANNELIZATION; DREDGE MAXIMUM OF 1,200 CUBIC YARDS OF MATERIALS WITH ON-SITE DISPOSAL ON THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED AND BY REFERENCE MADE A PART HEREOF.

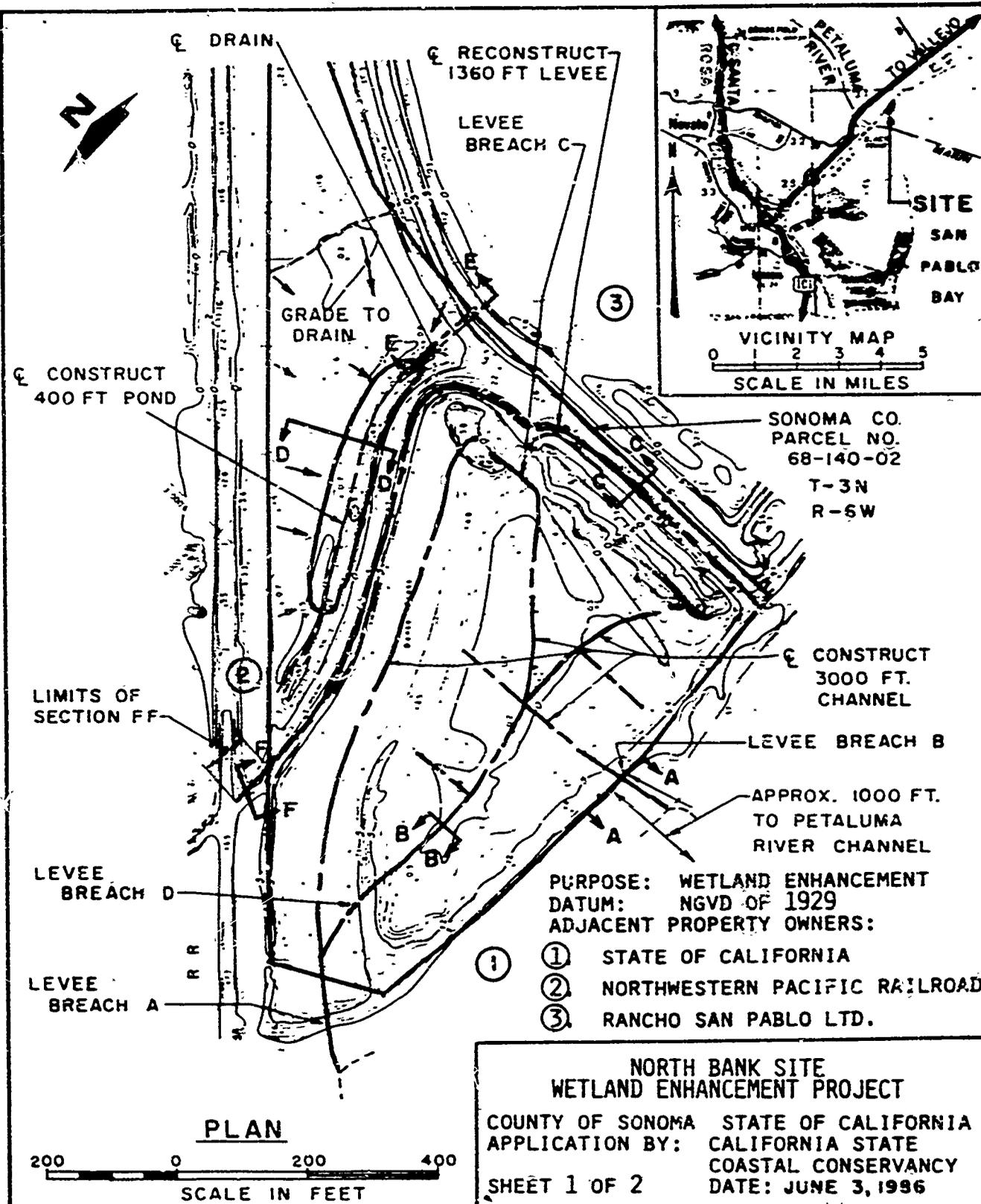


EXHIBIT "A"  
 LAND DESCRIPTION

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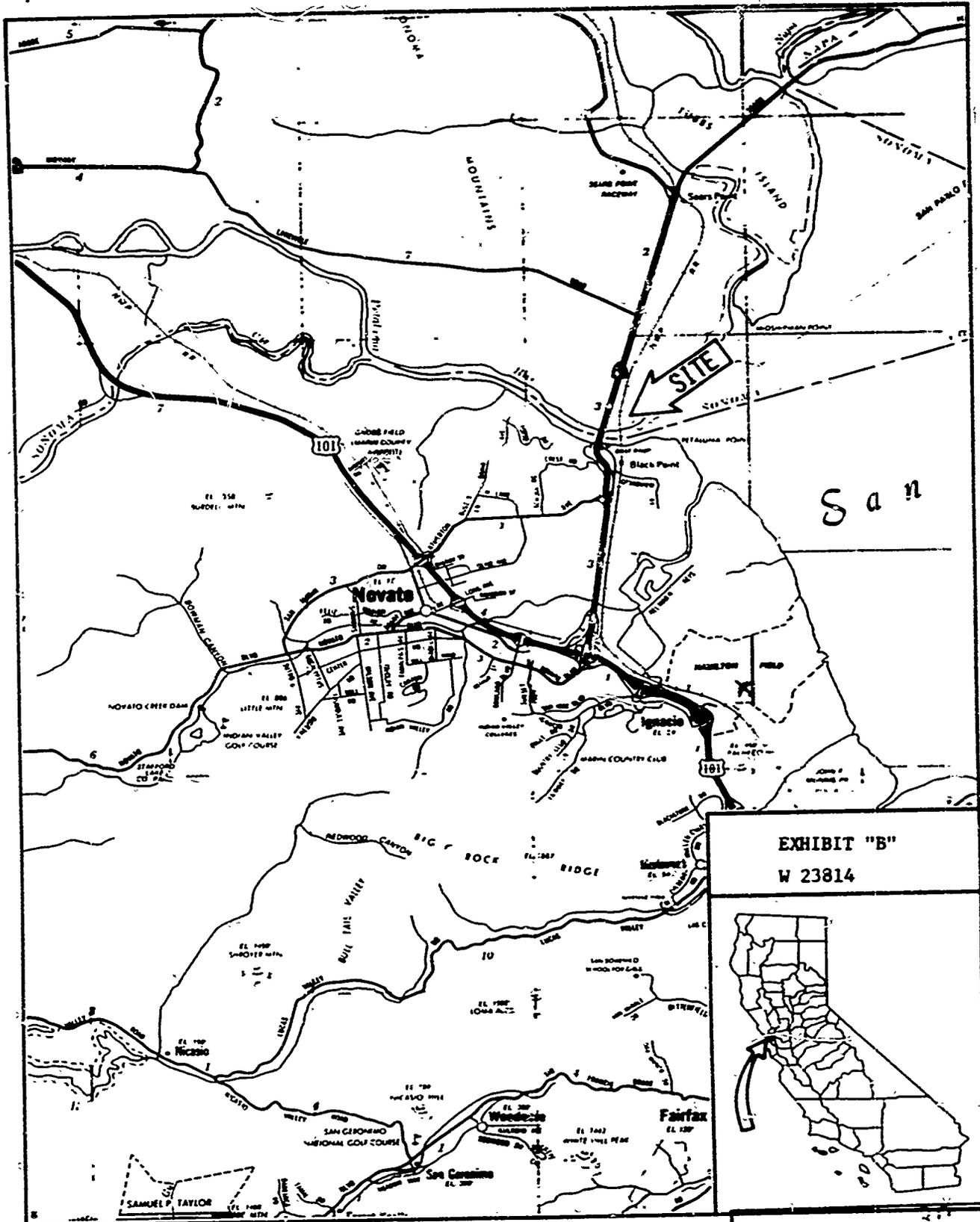


EXHIBIT "B"  
W 23814



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EXHIBIT "C"  
W23814

NOTICE OF PROPOSED NEGATIVE DECLARATION

TO: Secretary for Resources  
1416 Ninth Street, Room 1311  
Sacramento, CA 95814

FROM: State Coastal Conservancy  
1330 Broadway, Suite 1100  
Oakland, CA 94612

**Project Title**

North Bank Site Acquisition and Wetland Enhancement Project

**Project Location - Specific**

Adjacent to, and southeast of, the Northwestern Pacific Railroad right-of-way on the northeast bank of the mouth of the Petaluma River on San Pablo Bay (see attached location map). Bounded by the railroad right-of-way on the northwest, a levee and agricultural drainage ditch with grain fields beyond on the southeast, and salt marsh on the south.

**Project Location - City**

Unincorporated; approx. 1 mile  
northeast of the City of Novato

**Project Location - County**

Sonoma County

**Description of Nature, Purpose, and Beneficiaries of Project**

The North Bank Site Acquisition and Enhancement Project consists of the purchase of ± 14.5 acres of diked historic bayland and the enhancement and preservation of the site for wildlife habitat. The North Bank Site is the pilot project in the State Coastal Conservancy's San Francisco Bay Wetland Mitigation Bank Program. Enhancement of the site will yield 7.75 acres of restored tidal marsh and a ± 2-acre freshwater pond, approximately 1 acre of which will contain standing water year round. The balance will be maintained as low-lying upland habitat.

The triangular North Bank Site is low-lying former bayland that has been diked off from San Pablo Bay for many years and has subsided to lower elevations than those in the marsh outboard of the levees (see attached map of existing conditions). The site is surrounded on all three sides by levees which isolate it from tidal action and from surface runoff, and it is also subdivided by two internal levees. The existing vegetation is typical of upland ruderal sites, with salt tolerant species dominant in the areas that are closest to San Pablo Bay and that are inundated occasionally by very high tides. The State Coastal Conservancy is proposing to restore the southwest portion of the site to tidal marsh and to construct a freshwater pond surrounded by a margin of seasonal wetland in the northeast portion (see attached map of proposed enhancement).

Restoration of the southwest portion of the site will entail breaching the two outermost levees, excavating channels to promote tidal circulation, and using excavated soil to reinforce perimeter levees and raise the bottom elevation within the levees. Salt marsh vegetation will reestablish itself once tidal action is restored and suitable elevations are reached.

Enhancement of the northeast portion of the site will include creating a permanent pond with a margin of seasonal wetland using only rainwater collected within that portion of the site, while maintaining some of the existing volume of runoff from the project site into a swale containing saltgrass along the railroad tracks. Approximately one half of the northeast portion will be graded to direct all drainage into a pond designed to retain enough water to support mosquito fish for vector control all year. No additional water will be imported into this portion of the site. A culvert with a slide gate will be installed through the levee on the southeast side into an existing agricultural drainage ditch to permit flushing the pond and lowering the water surface in years of either exceptionally heavy rainfall or too little rainfall to sustain the mosquito fish population. All spoils will be used to bolster surrounding levees. In a year of normal precipitation, the maximum surface area of the pond will be +2 acres and the minimum surface area will be +1 acre. Planting on the northeast portion will include clumps of bulrushes and cattails, willow spikes around the pond perimeter, toyon above high water, and coyote brush on the levees.

The enhancement plan is designed to require minimal maintenance. The levees should be checked periodically for storm damage, the culvert and slide gate should be checked at least annually for blockage, the pond may benefit from clearing out vegetation every five years or so, and evidence of accumulation of salt or iron oxides or proliferation of mosquitoes may warrant occasional drainage of the pond.

The Conservancy will acquire the North Bank Site from the Sonoma Land Trust prior to carrying out the enhancement plan. The Conservancy will, in turn, deed the site to a resource management agency--preferably the Department of Fish and Game--to hold and manage the site as wildlife habitat in perpetuity.

The acquisition and enhancement are being undertaken by the Conservancy in the context of the San Francisco Bay Wetland Mitigation Bank Program. The mitigation bank program has been developed by the Conservancy in cooperation with permitting and resource agencies, developers, environmentalists and wetland scientists and is intended to improve the resource value of off-site wetland mitigation projects and to prevent further loss of wetland acreage around San Francisco Bay. The mitigation bank concept is as follows: the Conservancy locates, acquires, enhances, and deeds a site with low existing wetland values to a public agency or private non-profit organization for long-term management as wildlife habitat. Then, permitting agencies, in consultation with resource agencies, condition wetland development permits with the requirement that applicants pay in-lieu fees into a designated mitigation bank to reimburse the Conservancy for its actual costs of setting up the bank and to contribute to long-term management costs.

The current and future residents of the bay area are the indirect beneficiaries of the project, as it is intended to protect and restore bay ecology. More than seventy-five percent of San Francisco Bay's historic freshwater, brackish, and saltwater wetlands have been diked, drained, filled or altered in some other way that has eliminated or restricted their ecological value. Since the North Bank Site is diked historic bayland, and since upland habitat is relatively abundant around the bay area, it is justifiable to convert some

of the upland habitat on the site to wetland habitat. In addition, the juxtaposition of upland habitat with a salt marsh, a seasonal wetland, and a freshwater pond will improve the habitat value of the upland on the site for some species.

Initial Study Prepared?  Yes (see attachment)  No

**Proposed Finding**

The project could not have a significant effect on the environment.

**Mitigation Measures**

None

**Lead Agency and Address Where Copy of Initial Study is Available**

State Coastal Conservancy  
1330 Broadway, Suite 1100  
Oakland, CA 94612

**Review Period**

Comments must be received by the State Coastal Conservancy, 1330 Broadway, Suite 1100, Oakland, CA 94612, by August 20, 1985.

Contact Person	Title	Area Code	Telephone
Melanie Denninger	Project Analyst	(415)	464-1015

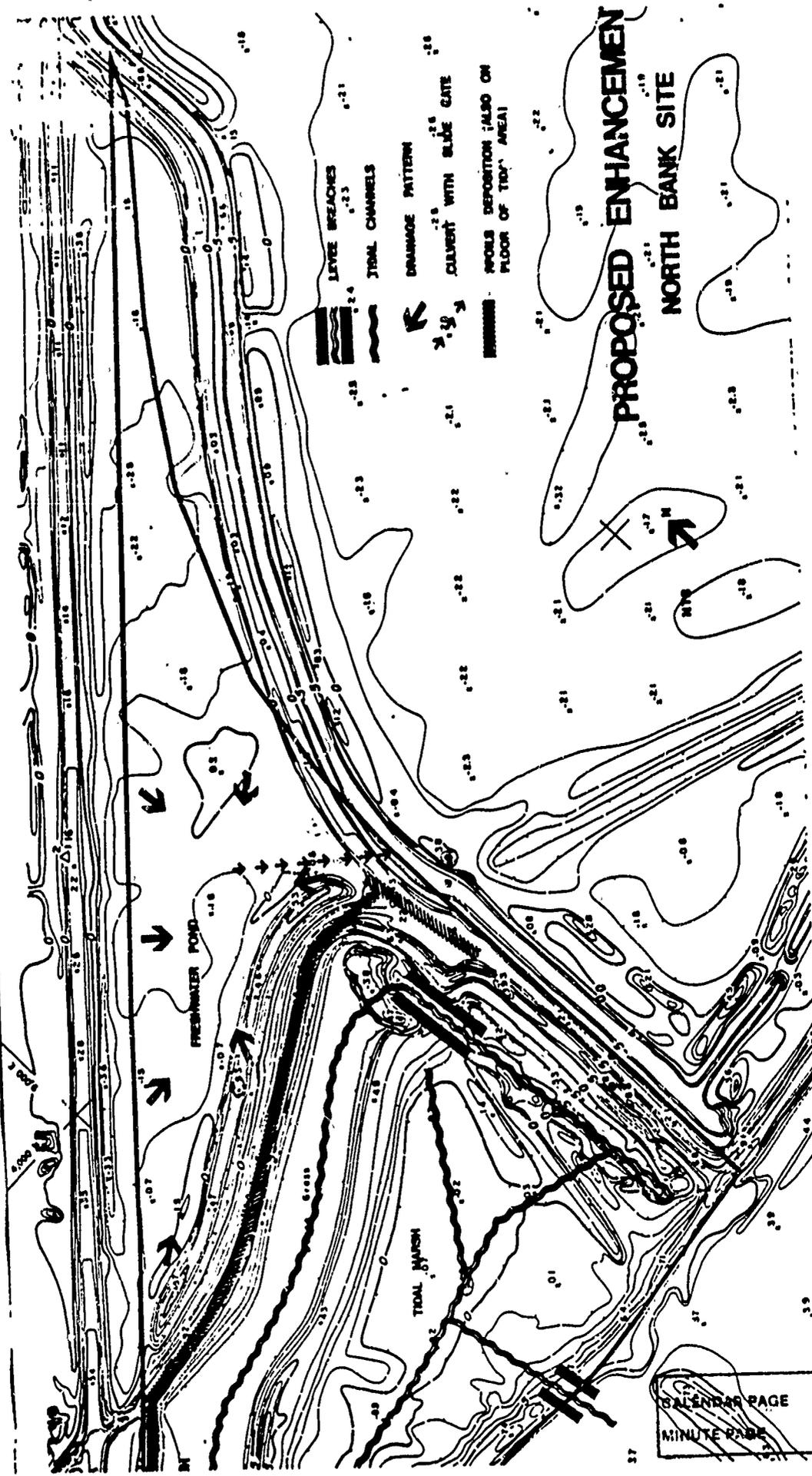
Date

*July 23, 1985*

Signature

*Melanie Denninger*

Project Analyst  
Title



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EXII

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## ENVIRONMENTAL CHECKLIST FORM

### I. Background

1. Name of Proponent State Coastal Conservancy
2. Address and Phone Number of Proponent (415) 464-1015  
1330 Broadway, Suite 1100  
Oakland, CA 94612
3. Date of Checklist Submitted July 17, 1985
4. Agency Requiring Checklist State Coastal Conservancy
5. Name of Proposal, if applicable North Bank Site Acquisition and Enhancement

### II. Environmental Impacts

(Explanations of all "yes" and "maybe" answers are required on attached sheets.)

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
<b>I. Earth. Will the proposal result in:</b>			
a. Unstable earth conditions or in changes in geologic substructures?	_____	_____	_____X_____
b. Disruptions, displacements, compaction or overcovering of the soil?	_____X_____	_____	_____
c. Change in topography or ground surface relief features?	_____X_____	_____	_____
d. The destruction, covering or modification of any unique geologic or physical features?	_____	_____	_____X_____
e. Any increase in wind or water erosion of soils, either on or off the site?	_____X_____	_____	_____
f. 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?	_____X_____	_____	_____

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	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	_____	_____	<u>X</u>
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	_____	_____	<u>X</u>
b. The creation of objectionable odors?	_____	_____	<u>X</u>
c. Alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally?	<u>X</u>	_____	_____
3. Water. Will the proposal result in:			
a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?	<u>X</u>	_____	_____
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	<u>X</u>	_____	_____
c. Alterations to the course or flow of flood waters?	_____	_____	<u>X</u>
d. Change in the amount of surface water in any water body?	<u>X</u>	_____	_____
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	<u>X</u>	_____	_____
f. Alteration of the direction or rate of flow of ground waters?	_____	_____	<u>X</u>
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	_____	_____	<u>X</u>
h. Substantial reduction in the amount of water otherwise available for public water supplies?	_____	_____	<u>X</u>
i. Exposure of people or property to water related hazards such as flooding or tidal waves?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
4. <b>Plant Life.</b> Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	<u>  x  </u>	<u>      </u>	<u>      </u>
b. Reduction of the numbers of any unique, rare or endangered species of plants?	<u>      </u>	<u>      </u>	<u>  x  </u>
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	<u>  x  </u>	<u>      </u>	<u>      </u>
d. Reduction in acreage of any agricultural crop?	<u>      </u>	<u>      </u>	<u>  x  </u>
5. <b>Animal Life.</b> Will the proposal result in:			
a. 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)?	<u>  x  </u>	<u>      </u>	<u>      </u>
b. Reduction of the numbers of any unique, rare or endangered species of animals?	<u>      </u>	<u>      </u>	<u>  x  </u>
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	<u>  x  </u>	<u>      </u>	<u>      </u>
d. Deterioration to existing fish or wildlife habitat?	<u>  x  </u>	<u>      </u>	<u>      </u>
6. <b>Noise.</b> Will the proposal result in:			
a. Increases in existing noise levels?	<u>  x  </u>	<u>      </u>	<u>      </u>
b. Exposure of people to severe noise levels?	<u>      </u>	<u>      </u>	<u>  x  </u>
7. <b>Light and Glare.</b> Will the proposal produce new light or glare?	<u>  x  </u>	<u>      </u>	<u>      </u>
8. <b>Land Use.</b> Will the proposal result in a substantial alteration of the present or planned land use of an area?	<u>      </u>	<u>      </u>	<u>  x  </u>
9. <b>Natural Resources.</b> Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	<u>      </u>	<u>      </u>	<u>  x  </u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
b. Substantial depletion of any nonrenewable natural resource?	_____	_____	<u>X</u>
10. Risk of Upset. Will the proposal involve:			
a. 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?	_____	_____	<u>X</u>
b. Possible interference with an emergency response plan or an emergency evacuation plan?	_____	_____	<u>X</u>
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	_____	_____	<u>X</u>
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	_____	_____	<u>X</u>
13. Transportation/Circulation. Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	_____	_____	<u>X</u>
b. Effects on existing parking facilities, or demand for new parking?	_____	_____	<u>X</u>
c. Substantial impact upon existing transportation systems?	_____	_____	<u>X</u>
d. Alterations to present patterns of circulation or movement of people and/or goods?	_____	_____	<u>X</u>
e. Alterations to waterborne, rail or air traffic?	_____	_____	<u>X</u>
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	_____	_____	<u>X</u>
14. 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:	_____	_____	_____
a. Fire protection?	_____	_____	<u>X</u>
b. Police protection?	_____	_____	<u>X</u>
c. Schools?	_____	_____	<u>X</u>

## CALIFORNIA STATE COASTAL CONSERVANCY

1330 BROADWAY, SUITE 1100  
OAKLAND, CA 94612  
ATSS 561-1070  
TELEPHONE 415/464-1015



## NOTICE OF DETERMINATION

TO: Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA 95814  
ATTN: Chris

FROM: State Coastal Conservancy  
1330 Broadway, Suite 1100  
Oakland, CA 94612

## Project Title

## Clearinghouse No.

North Bank Site Acquisition and Enhancement Project

85072310

## Project Location

Northeast bank of the mouth of the Petaluma River, Sonoma County

## Project Description

Acquisition and wetland enhancement by the State Coastal Conservancy of a + 14.5-acre parcel of vacant diked historic bayland. Transfer of title and management responsibility to another state agency. Use of the site as the pilot project in the Conservancy's San Francisco Bay Wetlands Mitigation Bank Program.

## Negative Declaration Prepared

Pursuant to the provisions of CEQA, a negative declaration was prepared by staff of the State Coastal Conservancy for the North Bank Site Acquisition and Enhancement Project. A copy of the negative declaration is available at the State Coastal Conservancy office at 1330 Broadway, Suite 1100 Oakland, CA 94612.

## Project Approved

On August 22, 1985, the State Coastal Conservancy approved the North Bank Site Acquisition and Enhancement Project and determined that the project will not have a significant effect on the environment.

Contact Person	Title	Area Code	Telephone
Melanie Denninger	Project Analyst	(415)	464-1015

*August 23, 1985*  
Date

*Melanie F. Denninger*  
Signature

Project Analyst  
Title

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	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
d. Parks or other recreational facilities?	_____	_____	_____X_____
e. Maintenance of public facilities, including roads?	_____	_____	_____X_____
f. Other governmental services?	_____X_____	_____	_____
15. Energy. Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	_____	_____	_____X_____
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	_____	_____	_____X_____
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
a. Power or natural gas?	_____	_____	_____X_____
b. Communications systems?	_____	_____	_____X_____
c. Water?	_____	_____	_____X_____
d. Sewer or septic tanks?	_____	_____	_____X_____
e. Storm water drainage?	_____	_____	_____X_____
f. Solid waste and disposal?	_____	_____	_____X_____
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	_____	_____	_____X_____
b. Exposure of people to potential health hazards?	_____	_____	_____X_____
18. Aesthetics. Will the proposal result in 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?	_____	_____	_____X_____
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	_____	_____	_____X_____
20. Cultural Resources.			
a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?	_____	_____	_____X_____

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Yes      Maybe      No

- b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object? \_\_\_\_\_      \_\_\_\_\_      X
- c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values? \_\_\_\_\_      \_\_\_\_\_      X
- d. Will the proposal restrict existing religious or sacred uses within the potential impact area? \_\_\_\_\_      \_\_\_\_\_      X

21. **Mandatory Findings of Significance.**

- a. Does the project have the potential to degrade the quality of the environment, substantially 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? \_\_\_\_\_      \_\_\_\_\_      X
- b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.) \_\_\_\_\_      \_\_\_\_\_      X
- c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.) \_\_\_\_\_      \_\_\_\_\_      X
- d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? \_\_\_\_\_      \_\_\_\_\_      X

III. **Discussion of Environmental Evaluation**

IV. **Determination**  
(To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

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 NEGATIVE DECLARATION WILL BE PREPARED.

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

Date

July 23, 1985

Signature

Melanie L. Dominguez

For State Coastal Conservancy

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**EVALUATION OF ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATIONS**

**1.b. Will the proposal result in disruptions, displacements, compaction, or overcovering of the soil?**

The proposal involves excavation and on-site placement of approximately 14,000 cubic yards of soil. On the southwest portion of the site, soil movement will include excavation of approximately 1700 linear feet of tidal channels with a bottom width of 10 feet and approximately 300 linear feet of tidal channels with a bottom width of 2 feet, both with invert elevations ranging from approximately 1 to 4 feet below natural grade; breaching the outboard levee in two places with breach bottom widths of 10 and 20 feet and 1V to 4H side slopes; breaching an internal levee in two places with breach bottom widths of 5 and 10 feet and 1V to 4H side slopes; and dredging two off-site tidal channels with bottom widths of 10 to 20 feet for a total of approximately 100 linear feet to connect proposed on-site channels with existing marsh channels. The sides of all channels--except where the channels pass through levees--will be allowed to slump to a natural angle of repose. Spoils will be spread and track compacted over existing vegetation on the floor of the proposed tidal area in order to hasten reaching an elevation that will support marsh vegetation.

On the northeast portion of the site, soil movement will include filling a + .25-acre borrow pit that is adjacent to an internal levee in order to improve levee stability; excavating a + 2-acre pond with side slopes not to exceed 1V to 10H and a maximum depth at the center of approximately 5 feet below natural grade; placement and track compaction of vegetation-free spoils on surrounding levees; and excavation and replacement of a section of an inboard levee to allow installation of a drainage culvert.

**1.c. Will the proposal result in change in topography or ground surface relief features?**

The proposed cutting and filling described under Item 1.b. will significantly change the topography of the site. Furthermore, natural forces will continue to modify the site following construction. The tidal portion of the site is expected to undergo sedimentation and erosion and to reach an eventual equilibrium at elevations suitable for supporting salt marsh vegetation.

**1.e. Will the proposal result in any increase in wind or water erosion of soils, either on or off the site?**

The existing salt marsh outboard of the site will initially receive an increased sediment load; however, sedimentation will be counteracted by the proposed increase in the tidal prism which is expected to improve tidal scouring in the existing marsh. Where spoils will be used to

bolster existing levees, vegetation will first be removed from the levee, the levee surface will be scarified, and vegetation-free spoils will be placed and track compacted on the levee to produce an effective bond and reduce erosion potential. During the first rainy season following construction, the pond slopes may erode into the pond, raising the bottom elevation. Vegetative cover will reduce the amount of erosion and change in topography in subsequent years. Erosion in the agricultural drainage ditch from pond drainage will be minimized by culvert placement and ditch protection. Site construction will be done at the end of the dry season, minimizing the time that bare soils will be subject to wind erosion. In addition, most of the southwest portion of the site will be submerged and protected from wind erosion as soon as the outboard levee is breached.

**1.f. Will the proposal result in 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?**

Anticipated changes in siltation, deposition and erosion which may modify the bed of San Pablo Bay are described above in Items 1.c. and 1.e. Following an initial period of increased erosiveness, the floor of the proposed tidal area is expected to be built up by sediment carried in by the tide until an equilibrium of erosion and sedimentation is reached. The existing marsh may be subject to a period of increased sedimentation due to erosion on the project site, but in the long run, the augmented tidal prism is expected to prolong the life of the existing marsh due to improved tidal scouring.

**2.c. Will the proposal result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?**

The restoration of tidal action on the southwest portion of the site and the ponding of rainwater on the northeast portion of the site will result in increased air moisture in the immediate vicinity of the site. Off-site changes in air moisture will be negligible.

**3.a. Will the proposal result in changes in currents, or the course or direction of water movements, in either marine or fresh waters?**

Proposed modifications to the southwest portion of the site will restore tidal action to approximately 7.75 acres of historic bayland. The increase in the tidal prism will cause an increase in the volume and velocity of flows in tidal channels in the existing marsh outboard of the site. Since the existing channels run essentially straight toward San Pablo Bay, the increased volume and velocity are not expected to change the alignment of the channels.

**3.b Will the proposal result in changes in absorption rates, drainage patterns or the rate and amount of surface water runoff?**

Under existing conditions, most rainwater falling on the site is impounded on the site, with prolonged ponding in borrow pits and ponding on other areas in years of high rainfall. The proposal will not result in increased surface runoff from the site, except that rainwater will no longer be impounded on the southwest (proposed tidal) portion of the site. Tidal inundation of the southwest portion of the site will increase water absorption in that area. Grading in the northeast portion of the site will eliminate a + .25-acre borrow pit and drain approximately 3.4 acres into a pond that, in years of normal precipitation, will inundate + 2 acres at its greatest extent and will recede to cover + 1 acre at the end of the dry season. About half of the area of the northeast portion of the site that now drains into a swale containing saltgrass along the railroad tracks will not be modified. Due to increased head and reduced surface area on which water will pond, there will be a net increase in percolation on the northeast portion of the site. A culvert with a slide gate will permit occasional drainage of the pond into San Pablo Bay via the agricultural drainage ditch.

**3.d. Will the proposal result in change in the amount of surface water in any water body?**

The proposed modifications to the southwest portion of the site will increase the surface of San Pablo Bay by approximately 7.75 acres. The + .25-acre borrow pit on the northeast portion of the site where rainwater ponds will be eliminated. A freshwater pond covering + 2 acres at its greatest extent and + 1 acre at its least extent in years of normal rainfall will be created on the northeast portion of the site.

**3.e. Will the proposal result in discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?**

The proposal includes possible occasional drainage of the freshwater pond into San Pablo Bay via an agricultural drainage ditch. The North Bank Site owner and manager will consult with the Regional Water Quality Control Board and meet water quality requirements before commencing pond drainage. Anticipated substances which may be present in pond discharge in significant quantities include salt, plant material, and iron oxides. Erosion of soil from the southwest portion of the site will increase turbidity in tidal water flowing out of the site and into San Pablo Bay. However, there is expected to be a long-term net importation of sediment onto the southwest portion of the site, culminating in an equilibrium of sedimentation and erosion. Once mudflat and marsh species become established on the proposed tidal area, they will contribute nutrients to San Pablo Bay.

**4.a. Will the proposal result in change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?**

Grading and tidal and freshwater inundation of the site will result in elimination of + 9.5 out of + 14.5 existing acres of upland habitat that now support ruderal vegetation. The existing ruderal plant species whose numbers will be reduced include annual grasses such as Italian ryegrass (Lolium multiflorum), riggut grass (Bromus rigidus), soft chess (Bromus mollis), and wild oats (Avena fatua), as well as curly dock (Rumex crispus), coyote brush (Baccharis pilularis ssp. consanguinea), alkali heath (Frankenia grandifolia), mustard (Brassica cf. nigra), rabbits' foot grass (Polypogon monspeliensis), and fat hen (Atriplex patula ssp. hastata).

Approximately 7.75 of the 14.5 acres of ruderal vegetation on uplands to be eliminated will be replaced by salt marsh habitat which is expected to be colonized within several years by cordgrass (Spartina foliosa), salt marsh bulrush (Scirpus robustus), pickleweed (Salicornia virginica), saltgrass (Distichlis spicata), gumweed (Grindelia humilis), brass button (Cotula coronopifolia), jaumea (Jaumea carnosa), and sea-lavendar (Limonium californicum). The remaining acreage will be replaced by a freshwater pond that will permanently submerge approximately 1 acre and will seasonally submerge approximately 1 acre. Cattails (Typha latifolia, T. domingensis, or T. angustifolia), common tule or giant bulrush (Scirpus acutus), arroyo willow (Salix lasiolepis), and red willow (Salix laevigata) will be planted in the pond and around the pond margins.

More than 75 percent of San Francisco Bay's historic freshwater, brackish, and saltwater wetlands have been diked, drained, filled, or altered in some other way that has eliminated or restricted their ecological value. Since the North Bank Site is diked historic bayland, and since upland habitat is relatively abundant around the bay area, it is justifiable to convert some of the upland habitat on the site to wetland habitat.

**4.c. Will the proposal result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?**

See Item 4.a.

**5.a. Will the proposal result in change in the diversity of species, or numbers of any species of animals (bird, land animals including reptiles, fish and shellfish, benthic organisms or insects)?**

Grading and tidal and freshwater inundation of the site will result in elimination of + 9.5 out of + 14.5 existing acres of upland habitat that now support ruderal vegetation and animal species including mourning doves (Zenaida macroura), house finches (Carpodacus mexicanus), American goldfinches (Carduelis tristis), common bushtits (Psaltirperus minimus), rufous-sided towhees (Pipilo erythrophthalmus), song sparrows (Passerella iliaca), gray fox (Urocyon cinereoargenteus), deer (Odocoileus hemionus), California ground squirrels (Spermophilus beecheyi), and bush rabbits' foot (Sylvilagus bachmani).

Approximately 7.75 of the 9.5 acres of upland habitat to be eliminated will be replaced by mudflats and salt marsh which will provide suitable

habitat for invertebrates including filter-feeding polychaete and oligochaete worms, zooplankton and diatoms, and may provide habitat for such rare and endangered species as the salt marsh harvest mouse (Reithrodontomys raviventris), the California clapper rail (Rallus longirostris obsoletus), and the California black rail (Laterallus jamaicensis), and for a variety of other salt marsh species. The balance of the upland habitat to be eliminated will be replaced by a freshwater pond and seasonal wetland which are scarce habitat types in the bay area and are suitable for a variety of riparian, pond, freshwater marsh, and shore species. The pond will be stocked with mosquito fish in order to control mosquito larvae.

See Item 4.a. for a discussion of the replacement of upland habitat with wetland habitat. In addition, the juxtaposition of upland habitat with a salt marsh, a seasonal wetland, and a freshwater pond will improve the habitat value of the upland on the site for some animal species.

**5.c. Will the proposal result in the introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?**

See Item 5.a.

**5.d. Will the proposal result in deterioration to existing fish or wildlife habitat?**

See Item 5.a. While the proposal will result a reduction in the extent of upland habitat, the diversification of habitat types on the site will improve the habitat value of the site for the many animal species that use several types of habitat.

**6.a. Will the proposal result in increases in existing noise levels?**

The proposal will result in increases in existing noise levels during project construction only. The construction period will last approximately four to six weeks. Noise will be generated mainly by heavy earth-moving equipment.

**7.a. Will the proposal produce new light or glare?**

The proposed new tidal and pond areas will produce new glare; however, the glare will be visible only on the project site and from the air.

**14.f. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Other governmental services?**

Following the proposed construction, the site will be turned over to a resource management agency, such as the Department of Fish and Game, to be managed as wildlife habitat. The site improvements are designed to require only minimal maintenance, such as keeping the culvert clear of obstructions, maintaining the levees in order to protect adjoining property, possible occasional clearing of vegetation in the freshwater pond, and occasional pond drainage.

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