

# SOLANO COUNTY WATER AGENCY



## FAX TRANSMITTAL FORM

Date: 12/1/97

Time: 3:00 a.m./p.m.

Please deliver the following transmittal to:

LESLIE LEW -- COE 916-557-7856  
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From: DAVID OKTA  
Solano County Water Agency, FAX NO. 707 448-7347

Special Instructions: COMMENTS ON PROPOSED ISLAND REPORT,  
THE MEMO FROM USFWS NO ADDITIONAL PUMPING RESTRICTIONS IF  
"RISK TO THE OVERALL FISH POPULATION OF DELTA SMCA IS  
LOW." THIS IS BEST LANGUAGE WE COULD GET OUT OF  
USFWS - WE ARE NOT SATISFIED BUT IS BEST WE COULD  
GET FOR NOW.

Total Number of Pages 3 (including cover page).

Please Note: If you do not receive all of the pages, please call (707) 451-2852.

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## HYDROLOGY

Water elevations in the study area are influenced by hydrological events. Rapid melting of snowpacks and rains in the tributary area may greatly influence the waterways in the area. Tidal action is another factor which may influence the water action.

The tidal elevation data for the southern tip of Prospect Island are as follows:

Tidal Elevations	
	Feet msl
Mean high-high	4.1
Mean high	3.5
Mean	2.0
Mean low	0.2
Mean low-low	-0.3

## WATER SUPPLY

The North Bay Aqueduct delivers water to Solano County and Napa County. Water contractors who receive this water are concerned about the potential effect on the Barker Slough pumping plant (which serves the North Bay Aqueduct) from an increase in the Delta smelt population. Currently, DWR is required to discontinue or reduce pumping whenever concentrations of smelt larvae exceed a certain threshold. The DWR, Solano County *Water Agency* Irrigation District, Service, Reclamation, and Corps met to discuss the water contractors' concerns. As a result, the Service's field supervisor for Sacramento sent the following memo to Reclamation. This memo <sup>resolved</sup> resolved the water contractors' concerns.

Increased Delta smelt larval may occur as a result of increases in shallow-water habitat associated with Prospect Island. These increases may cause additional restrictions on pumping at the Barker Slough diversion with the requirements in March 6, 1995, biological opinion. It is the Service's intent that increased larval production associated with Prospect Island not cause additional pumping restrictions when risk to the overall population of Delta smelt is low. In the 1994 draft Recovery Plan, wide distribution and high numbers of rearing juveniles have been shown to lower risk to Delta smelt. If these conditions exist, no additional Barker Slough pumping restrictions will occur due to increased larval production from Prospect Island.

savings from ending ship channel maintenance could be used to fund any minor increases in shoaling.

**Hydraulic Effects on Passing Ships.** The proposed breach in the ship channel levee may direct flows during normal tide cycles and floodflow conditions from the interior of Prospect Island outward to the ship channel, possibly affecting the navigability of the channel. However, hydraulic models of alternatives 4 and 5 show that construction of these alternatives would have little effect on the operations of the ship channel and surrounding land areas. Although maximum velocities through the ship channel breach could be as high as 6 feet per second, velocities in the ship channel itself would be less than 0.4 foot per second and are not likely to have a significant effect on passing ships.

**Water Supply.** Originally, operators of the North Bay Aqueduct were concerned that restoration of Prospect Island might result in an increase in Delta smelt near the Barker Slough pumping facility. This increase could affect the pumping operations for the North Bay Aqueduct, which must temporarily cease pumping if the nearby smelt count exceeds a certain number.<sup>23</sup> However, language in the August 1994 biological opinion for pumping in the Delta ensures that pumping operation requirements for smelt will be reviewed if the Prospect Island project results in increased numbers of smelt at the pumps.<sup>23</sup> Therefore, pumping would not be adversely affected by this project. *may*

**Severance.** The Port currently has legal road access across Prospect Island via the ship channel levee. This access will be severed when the breach through the ship channel levee is excavated. Severance damages have been estimated by the Real Estate Division in appendix I and are included as a project cost.

**Erosion of Project Levee.** The east levee of Miner Slough adjacent to Prospect Island (also the east levee of the Yolo Bypass) is part of the flood control project. A breach in the west levee of Miner Slough may direct higher velocity outflows from the interior of Prospect Island toward the east levee of Miner Slough, possibly resulting in increased erosion of the east Miner Slough levee. However, hydraulic models of alternatives 4 and 5 show that the lateral flow into Miner Slough dissipates before reaching the east levee and would therefore have no significant effect on the east Miner Slough levee.

**Seepage.** Ryer Island farmers claim that every time that Prospect Island has been flooded, Ryer Island experiences seepage. A hydrologic seepage analysis found a strong correlation between the stage in Miner Slough and seepage on Ryer Island, but did not find a strong correlation between flooding on Prospect Island and seepage on Ryer Island (appendix J). Site-specific exploration and cross sectional survey data would be necessary to develop a reasonable seepage model across Miner Slough which could be accomplished by completing

<sup>23</sup> U.S. Fish and Wildlife Service, "Biological Opinion Concerning the Operation of the Central Valley Project and State Water Project: Effect on Delta Smelt," unpublished report, 1994.

Expenses have averaged \$325,000 annually for Corps maintenance of the ship channel levee. Abandoning maintenance along the study area portion of the ship channel levee (about two-thirds the length of the levee) would allow the Corps to realize a cost savings of about \$212,000 per year (the portion of the maintenance costs that would be eliminated with the Prospect Island project).

Given the scarcity of tidal freshwater marsh in the Delta and the benefits that Prospect Island would provide for Federally listed winter-run chinook salmon and Delta smelt; Federally proposed Sacramento splittail, waterfowl, and shorebirds; and other terrestrial and aquatic wildlife in the Delta, the construction of restoration features at Prospect Island is justified. Furthermore, the restoration can be accomplished at the reasonable average annual cost of \$480 per AAU and has a broad base of Federal, State, and local support.

### SUPPORT FROM OTHER AGENCIES

Inter-agency interest in this project is very high. The California Department of Water Resources is the non-Federal sponsor for Prospect Island and has provided a letter of intent (appendix D). The project has support from Reclamation, U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the California Department of Fish and Game, the Wildlife Conservation Board, the Port of Sacramento, Solano Irrigation District, the Trust for Public Lands, CALFED, and Category III.

*County Water Agency*

Acquisition and restoration of Prospect Island are also consistent with the local implementation element of the North American Waterfowl Management Plan, the Central Valley Habitat Joint Venture's strategy to concentrate restoration efforts on the periphery of the Delta where subsidence and levee maintenance are less of a problem than in other parts of the Delta.

Coastal America, a consortium of agencies (including the Corps) that promotes the environmental values of coastal areas, has officially endorsed the Prospect Island Fish and Wildlife Habitat Restoration Study and the tentatively selected plan.

### FURTHER STUDIES

Further studies would be undertaken prior to preparation of plans and specifications. Soils explorations and cultural surveys could not be conducted prior to the preparation of this PMR because Prospect Island was flooded in January 1997, and explorations and surveys could not be completed. Soils explorations should verify that construction of Prospect Island would not cause additional seepage of ground water on neighboring Ryer Island. Soils explorations and cultural surveys would be undertaken during the plans and specifications phase.

## APPENDIX C

**3.3 Water Supply.** Availability of water supplies at the Delta varies with natural conditions and upstream development. Natural hydrologic variations cause extreme fluctuations in monthly and yearly inflows. Winter floods produce Delta flow rates of several hundred thousand cubic feet per second (cfs), while summer conditions can decrease rates to a few thousand cfs. The total annual volume of inflow can also vary substantially.

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**3.4 Flood Control.** Levees line the perimeter of Prospect Island to protect the agricultural activities. Prospect Island is flooded more frequently than neighboring islands because of the relatively low height of the ship channel levee. This low levee was intentionally constructed as a part of the flood control project. The levee on the east side of Miner Slough is part of this project. Prospect Island was flooded in 1980, 1982, 1983, 1986, and 1997. The ship channel levee is maintained by the Corps. The other levees have been maintained by Reclamation District 1667 and will now be maintained by Reclamation (Corps, 1995).

The ship channel levee on Prospect Island is a major maintenance problem. These levees are subject to damage by floodflows, wind and tidal action, and vessel wave wash. Also, the subsidence of peat soils on most Delta islands is causing levees and their foundations to subside. This subsidence promotes uneven settling and further weakening of the levees. Moreover, the Delta soils have a high to very high shrink/swell potential and low strength for supporting the load of embankments, dikes, and levees. The soil volume is decreased substantially under the load of material, and seepage through the soil is rapid.

**3.5 Water Elevations and Tidal Action.** Historically, natural Delta islands may have had less tidal influence as the riparian perimeter thickened, restricting outlet channels. Such natural islands probably did not support large expanses of open water (deeper than -3 feet mwl) in the interior, and probably had limited tidal action in much of the tule regions.