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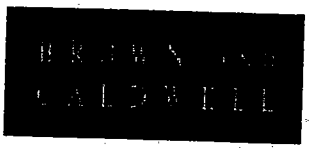

May 31, 2002

Mr. Peter Mull
Ms. Lynne Galal
United States Army Corps of Engineers
San Francisco District Office
333 Market Street
San Francisco, California 94105

11-22459-503/1

Subject: Final Cost Estimate of Napa Salt Marsh Salinity Reduction and Restoration Alternatives

Dear Mr. Mull and Ms. Galal:

We have finalized our analysis and cost estimate of salinity reduction and restoration alternatives for the Napa Salt Marsh. Our evaluation was performed in accordance with the Scope of Work for Engineering Services included as part of the Award Document authorized by the United States Army Corps of Engineers (ACOE) on March 6, 2002. The draft report below summarizes our results, and it includes three main subsections covering costs associated with salinity reduction alternatives, levee repair and maintenance, and restoration alternatives.

Note that this cost estimate is based on a conceptual design of water control structures and restoration components. Further definition of the concepts described herein will allow for the development of more accurate cost estimates for required facilities.

SUMMARY

Estimated total costs for water control structures associated with salinity reduction alternatives are $50.1 million for Alternative 1 (Napa River and Napa Slough Discharge), $56.6 million for Alternative 2 (San Pablo Bay Discharge), and $21.9 million for Alternative 3 (Napa River Discharge via Levee Breaches). These costs do not include those associated with the delivery of reclaimed water to the site.

Initial levee repair is estimated at $1.6 million and peak annual levee maintenance is estimated at $311,000 per year. Annual maintenance costs will decrease slightly during the first few years of the project as some ponds are converted to tidal marsh and their levees no longer require annual maintenance.

Costs associated with restoration components are described in the final section of this report, and can be used to estimate the costs of various restoration alternatives that are currently under development. A generic restoration alternative with 10,000 feet of starter channels, 25 ditch blocks, 10,000 feet of levee lowering, 25 levee breaches, and 40 acres of sediment addition would cost an estimated $8 million. These costs do not include water control structures associated with managed ponds.

INTRODUCTION

In the early 1990s, the Cargill Salt Company ceased the production of salt and sold 9,850 acres of evaporation ponds and associated lands near the mouth of the Napa River to the State of California. The ACOE, the California Coastal Conservancy (CCC), and the California Department of Fish and Game (DFG) are proposing a salinity reduction and habitat restoration project for the site now known as the Napa Salt Marsh. The purpose of this project is to restore tidal salt marsh and ecologically related habitats to support populations of endangered species, migratory waterfowl, shorebirds, and anadromous and native fish. The long-term goal is to produce a natural, self-sustaining habitat that can adjust to naturally occurring changes in physical processes with minimum on-going intervention.

The study area contains 12 ponds formerly used in the salt production process. This process consisted of taking in Bay water at the southern edge of the pond system, allowing evaporation to occur, and then moving the brine to the next pond in the series for further concentration. Water transfers within the pond system occurred through a combination of pumps, tide gates, valves, siphons, and canals.

Salinity Reduction

Removing salts from the ponds is the first step in the habitat restoration process. Once salinity reduction has been achieved, ponds can be opened up to tidal action or maintained as managed ponds, thus increasing their value as wildlife habitat. Salinity reduction is not currently required for Ponds 1, 1A, 2 and 2A. At the present, these ponds are functioning habitat and have salinity levels near ambient conditions. Salinity reduction is required for Ponds 3, 4, 5, 6, 6A, 7, 7A and 8. Currently, these ponds have salinity levels that either preclude use of the ponds by wildlife, or limit use of the ponds to a very small number of species. Based on Spring 2001 data from DFG, Ponds 3, 6, 6A and 7A range from 30 to 65 parts per thousand (ppt). Ponds 4 and 5 range from 150 to 200 ppt. Ponds 7A and 8 are the most saline ranging from 225 to 325 ppt. Salinity levels in most ponds fluctuate to some extent on a seasonal basis.