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3501 Civic Center Drive, Room 308
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September 17, 2002

SUBJECT: Comments on Draft Environmental Impact Statement/Report and Draft Feasibility Report: Bolinas Lagoon Restoration Project, June 2002

Dear Mr. Golden and Mr. Haddad:

I am a James B. Duke Professor of Geology Emeritus at Duke University. I am author/co-author/co-editor of a 22 volume series on coastal hazards including Living With the California Coast (Author Gary Griggs et al.) I have almost 4 decades of marine geology experience and am the recipient of the Francis Parker Shepard medal for excellence in coastal and marine geology. I am also the author of The Corps and the Shore (1996, Island Press) a book concerned with coastal activities of the US Army Corps of Engineers.

I have painfully read most of the lengthy two volume Draft Environmental Impact Statement (June 2002).

Of particular interest to me is Kent island which I believe is a flood tidal delta, a ubiquitous feature of barrier bars and islands in sandy microtidal environments. There appears to be only a tiny ebb tidal delta at the mouth of Bolinas lagoon which is characteristic of high wave energy, low tidal amplitude environments such as this portion of the California Coast. According to the report, if I read it correctly, the sand on Kent Island is from the ocean beach, a further verification of its tidal delta origin.

Tidal deltas are formed in some sort of equilibrium between sand supply, wave energy, tidal currents, the occasional storms that come by and whatever unique local combinations of these things that characterize the inlet. The shape of the body of sand is more or less an equilibrium with these processes. It is believed that sand that crosses the inlet from one side to the other may often briefly reside on either or both the flood and ebb tidal deltas during its passage across the inlet. When sand is removed from a flood tidal delta it will be fairly quickly replaced by new sand coming in from the beach through the inlet. This new sand is in part sand that would have crossed the inlet if the tidal delta had retained its original equilibrium shape. Thus removal of sand from the flood tidal delta will lead to a reduction of sand supply on ocean beaches on both sides of the inlet.

This loss of sand to ocean beaches needs to be addressed and quantified. In addition, the plan to dump Kent Island sand at sea (hopper dredging) is a very wasteful one. Sand from the coastal system should not be wasted. California has already a lot of beach sand supply problems from dams, groins and seawalls etc. The sand should be replaced on the beach somewhere, a location that I am not in a position to suggest.

Lastly, I recommend that an independent science panel review and comment on the technical studies on which the proposed project is based.

Sincerely yours,

Orrin H. Pilkey, Director
Program for the Study of Developed Shorelines
Division of Earth and Ocean Sciences
Duke University