

98-462

December 9, 1998

Memo to: Tom Hagler, EPA
Patrick Leonard, USFWS
Rob Cooke, CALFED

From: John Cain

Regarding: NHI's comments to the levees section (pg. 49 -53) of the December 9 Revised Phase II Report.

Below are NHI's edits to the CALFED Revised Phase II Report: Long Term Levee Protection Plan pg. 49. All additions in bold and deletions are struck. Commentary is in italics. The major point of our edits are three fold: 1) the levees program should evaluate the risk to all levee dependent systems not simply the risk to the levees, and 2) the risk evaluation team should be granted autonomy from DWR, expanded to include economists and ecologists, and composed based on a stakeholder input process modeled after the ERP strategic planning process, 3) stage 1 actions should include subsidence management and reversal actions on the interiors of the islands not just in the vicinity of the levees.

Pg. 49, Last paragraph, second sentence: Delta levees and islands are the most visible . .

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First paragraph, second sentence: Delta levees and islands are the most visible . .

Second paragraph, second sentence: The results of this investigation found that a sizeable ~~but manageable~~ seismic risk is present, and identified some measures to manage that risk. *Yes, the seismic risk may be manageable, but according to seismic team members I have talked to it could take up to a \$100 billion (yes billion) in levee upgrades to manage it.*

In an effort to further quantify the total risk to levees dependent systems, CALFED has requested this group, headed by DWR's Division of Engineering, answer the following questions will augment this group, based on stakeholder recommendations, with

independent experts in the fields of economics, ecology, water supply planning, and other relevant disciplines to perform a more comprehensive risk assessment. This group will:

- 1. Perform a total risk assessment. Identify all contributors to levee failure hazards risk and quantify the total risk to the cultural, economic, and ecological systems dependent upon Delta levees.**
- 2. Provide recommendations for seismic upgrades to critical Delta levees and other measures to reduce levee failures. Include an evaluation of the reduction in levee vulnerability and cost estimates, (\$/mile) for various recommendations. typical upgrades.**

Paragraph 4: Once the total risk to Delta Levees and the systems dependent upon them is quantified . . .

Paragraph 5, second sentence: The available risk management options include but are not limited to:

- Controlling and Reversing Delta Island Subsidence**

Last sentence: The final risk management plan may include a combination of these options and others identified as the result of the above studies.

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First Paragraph, first sentence: Given the numerous public benefits protected by Delta levees, the focus of the Long-term Levee Protection Plan is to reduce system vulnerability.

Last Paragraph: Delta Island Subsidence Control Plan: Subsidence has played a key role in bringing the Delta islands to where they are today: relatively tall levees protection interiors below sea level. Numerous factors including oxidation, compaction and erosion of peat soils, have cause Delta Islands to subside several feet below sea level. Today, these islands, and the environmental and water resources dependent upon them, are protected from seawater inundation by a network of Delta levees. The Levee Program will evaluate and implement BMP's to correct control subsidence on-of levees and coordinate fund research to quantify the effects and extent of inner-island subsidence as it relates to all CALFED objectives. Where cost effective, both levee and interior island subsidence control and reversal measures will be implemented through the base-level protection component of the Levee Program and supplemented by research to develop subsidence control and reversal BMP's through grants through from the existing special project program.

Pg 52, third to last bullet point: Subsidence reduction, management, and reversal helps long-term Delta system integrity.