



August 12, 1996

Greg Thomas
The Natural Heritage Institute
114 Sansome Street, Suite 1200
San Francisco, CA 94104

Dear Greg:

This letter is in response to your June 30, 1996 letter submitting an NHI alternative and subsequent written and oral modifications and clarifications of that submittal. The NHI proposal is a thoughtful, well-integrated concept which addresses many of the issues of concern in the CALFED Bay-Delta Program. As we have discussed, I believe that the essential elements of the NHI proposal are either currently integrated into the range of alternatives under consideration in the CALFED Bay-Delta Program, or have been identified as issues to be evaluated during Phase II of the Program.

Your July 1, 1996 preliminary draft of the NHI alternative contains a summary list of the basic physical components and institutional arrangements which comprise the NHI alternative (pages 2 and 3). I will respond in order of these listed features.

Physical Components

1. *Large scale conversion of the Delta islands...to tidal marsh...*

The centerpiece of NHI's alternative is the wholesale conversion of the Delta to habitat, particularly tidal wetlands (350,000 acres). As we have discussed, restoring a healthy ecosystem and achieving an environmentally optimal response requires developing and implementing an extremely diverse and far-reaching restoration strategy in an effort to establish a rich mosaic of various habitat types, in addition to dealing with flows, toxics, invasive species and many other limiting factors in the system. A single featured habitat type is not only unlikely to achieve broader ecosystem health goals, but can, in some instances, be counterproductive to restoring health to the whole ecosystem. It should also be kept in mind there is a significant difference between tidal wetlands and seasonal wetlands both in terms of function within the ecosystem, as well as their status in the predisturbance

CALFED Agencies

California

The Resources Agency
Department of Fish and Game
Department of Water Resources
California Environmental Protection Agency
State Water Resources Control Board

Federal

Environmental Protection Agency
Department of the Interior
Fish and Wildlife Service
Bureau of Reclamation
Department of Commerce
National Marine Fisheries Service

Delta. The CALFED Ecosystem Restoration Program common to all the alternatives is fundamentally based on adaptive management. While long-term vision targets will be established, the heart of the Program is incremental implementation of restoration actions, monitoring and research, and adjustment of subsequent actions to better achieve overall ecosystem health objectives.

This approach ensures that the proper acreages of various types of habitat, including tidal wetlands, will be developed incrementally to achieve the optimal environmental response. Our alternatives propose using channel dredging materials to produce habitat and to stabilize levees. The alternatives also propose acquiring 25,000 to 50,000 acres of subsidence control zones. Actually this approach appears to be consistent with the strategy expressed in your July 1 alternative discussion, wherein you recognize that conversion of portions of Delta islands can and will take significant periods of time, up to 500 years, to fill to grade with dredge spoils, given the amount of dredged material available, and 30 to 100 years, given the rate of feasible peat regeneration for 25 or more islands that are 10 to 20 feet below sea level (180,000 acres). Given these time frames, protection of existing levee systems will be necessary as part of an adaptively managed plan to achieve a more sustainable Delta infrastructure.

2. *Seasonal storage of water in some Delta islands...*

In-Delta storage is included in all three of the alternatives under consideration. As such, in Phase II the utility of in-Delta storage will be evaluated.

3. *Enhanced environmental flow and diversion patterns...*

In-stream flow, diversion patterns and timing and acquisition of environmental water is included as part of the Ecosystem Restoration Program in all of the existing alternatives, and as such, will be evaluated as part of Phase II.

4. *A small isolated facility...*

Alternative 3 includes evaluation of an isolated facility, ranging from 5,000 cfs to 15,000 cfs.

5. *Targeted restoration in areas upstream of the Delta...*

Upstream habitat restoration and reduction of limiting factors are essential parts of the Ecosystem Restoration Program. Upstream activities include screening of diversions, restoration of the meander belt on the Sacramento River, removal of obstructions on tributaries, pesticide and herbicide management programs, and many other component actions.

Greg Thomas
August 12, 1996
Page Three

6. *Reductions in other anthropogenic sources of fish mortality...*

These actions which you have recommended are all currently included as part of the Ecosystem Restoration Program.

Institutional Arrangements

1. *A new environmental water authority.*

As part of our evaluation of implementation strategy, we have initiated a work component for assurances and institutional guarantees. This activity is an integral part of our Phase II effort. Under the assurances/institutional guarantees component, we will review the specific needs to ensure implementation, and in particular, adaptive management feasibility for the Ecosystem Restoration Program. Since we are just initiating that effort, it is premature for us to conclude or confirm your conclusion that a specific environmental water institution is necessary to assure implementation of the Program components. However, this will be evaluated.

2. *A maximal scale statewide conjunctive management program.*

Groundwater banking and conjunctive management is included as part of the storage component. As such, the utilization of groundwater resources and conjunctive management will be evaluated with each of the three alternatives.

3. *Demand management.*

As you are aware, each of the three alternatives includes four common programs. One of the common programs is water use efficiency. Within this program we are evaluating actions, programs and specific economic incentives with which to achieve a high level of water use efficiency in all of the basic sectors. We are still in a refinement stage of this component, but expect water use efficiency to play a significant role in any and all approaches taken to deal with the Bay-Delta system.

I hope this response to your specific summary points is useful. Additionally, there are several technical issues which I think you should consider. The most important of these technical issues is the seismic vulnerability of the Delta levees. In your written presentations and in oral presentations to CALFED, you have quoted a DWR report on Delta levees alluding to a finding of "50% probability of failure of Delta levees in a 30 year period."

The portion of the DWR finding from that report which you did not quote is that the stated probability should be applied if the foundation materials under the levees reacts as a

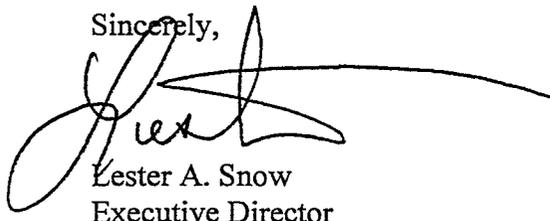
Greg Thomas
August 12, 1996
Page Four

stiff clay or rock material. There is not sufficient data currently to assess whether the Delta peat reacts to seismic activity in a manner consistent with a stiff clay or whether the peat material attenuates seismic motion (as many experts believe). The report you quote finds that if the latter response of the peat materials is in fact the case, the seismic vulnerability of the Delta levees will be orders of magnitude lower. Only monitoring data from the Delta seismic monitoring stations installed after the Loma Prieta quake will resolve this scientific dispute.

Consequently, the adaptive management approach to establishing a sustainable system of Delta levees and channels, which our alternatives propose, provides the highest likelihood of a successful, least cost approach.

Hopefully, this letter helps to clarify our view of the issues which you have raised and to indicate that we are in fact incorporating the basic concepts that you have articulated. Please feel free to give me a call as I would be glad to discuss this further with you.

Sincerely,

A handwritten signature in black ink, appearing to read "Lester A. Snow", with a long horizontal flourish extending to the right.

Lester A. Snow
Executive Director