

Letter to Mr. Lester Snow, Director, CALFED, dated March 17, 1998

Enclosure 2: Outline of Application of §404(b)(1) Guidelines Relative to Current CALFED Bay-Delta Program ("CALFED") Alternatives [Note: The language associated with each element of the guidelines is a paraphrase of the regulation, for brevity.]

40 CFR 230.10 (a): Identification of the Least Environmentally Damaging Practicable Alternative

Discussion: An important requirement of the Guidelines is that only the least environmentally damaging practicable alternative (LEDPA) that achieves the applicant's overall project purpose is permissible.

Analysis to date has led to agreement on a project purpose statement for the CALFED program.<sup>1</sup> In summary, this statement calls for CALFED to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system by addressing four critical resource categories: ecosystem quality, water quality, water supply reliability, and system integrity.

In light of this project purpose statement, CALFED has developed a variety of programs for consideration as elements of the CALFED project. These program elements include, but are not limited to:

1. Ecosystem Restoration Program Plan (ERPP)
2. Levee System Protection Program
3. Storage Facilities
4. Conveyance Facilities
5. Water Use Efficiency Program (conservation, reclamation)<sup>2</sup>
6. Water Quality Program
7. Water Transfers
8. Watershed Management

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<sup>1</sup>A final determination of the overall project purpose can only be made by the Corps of Engineers. For purposes of this discussion it is assumed that the USACE will not significantly alter the agreed upon project purpose statement.

<sup>2</sup>This is not intended to be a comprehensive listing of all potential elements for the program. These particular programs are identified to assist in illustrating the alternatives analysis process.

## Initial Screening of Program Elements

During Phase II of the CALFED program, alternatives may be selected for a number of critical CALFED program elements. For example, a decision may be made as to which water conveyance facilities are preferred. However, CALFED assumes that certain other aspects of the program's elements will be pursued regardless of the alternative selected (other than no action). The proper focus of the §404(b)(1) alternatives analysis on the program elements will differ, based on the alternative selected.

Therefore, within each of these program elements it is necessary to describe the components that are true common elements, i.e. components that will be pursued regardless of the alternative selected (except under a "no action" scenario). For example, in the ERPP, some of the components will be common elements, other components will not.

### Common Elements

No further §404(b)(1) alternatives analysis is useful at this stage for true common elements, since, for purposes of the decisions currently facing CALFED, these program elements will be pursued under any alternative selected other than no action.

Further §404(b)(1) alternatives analysis will be necessary at later stages of planning for these common elements (assuming §404 discharges are proposed to implement them). The project proponents, USACE and EPA can decide how best to structure that analysis when substantive decisions as to how to implement the common elements are ripe.

The common elements are relevant to the §404(b)(1) alternatives analysis at this stage only to the extent that information generated as to the results of implementing the common elements is relevant to evaluating the practicability, or quantifying the environmental impact, of the alternatives under consideration at this stage of the §404(b)(1) alternatives analysis.

### Description of Alternatives

CALFED has identified twelve major alternatives which it is considering in its EIR/EIS. The alternatives under consideration by CALFED are generally described by how they vary with respect to storage and conveyance options. However, it is important to recognize that these alternatives will also present meaningful variations in how they achieve other project elements (e.g. ERPP and System Integrity Projects).

## Analysis of Alternatives

For each alternative, CALFED must describe the environmental impacts of pursuing that alternative and analyze whether the alternative can practicably achieve the project purpose determined by the USACE.<sup>3</sup> This is intended as a descriptive and analytic stage. Comparison between the alternatives does not yet occur at this stage.

In assessing both the extent of environmental impacts of an alternative and whether an alternative can practicably achieve the project purpose, it is essential to look both at the specific elements of the alternative and how it affects (and is affected by) other CALFED program elements. Thus, CALFED must assess the utility and environmental impact of constructing the facilities called for under the various alternatives.

In addition, CALFED must also assess both the impact of implementing each alternative on the other program elements (e.g. the ERPP, Water Use Efficiency, etc.), and the impact of implementing the other program elements on the practicability and environmental impact of each alternative.

To illustrate by example: In assessing the practicability of an alternative that includes a "through Delta" conveyance strategy, a basic question is how well will this alternative function to deliver water to achieve the water supply reliability component of the project purpose. However, at the same time it is also essential to consider whether other program elements are practicable to achieve if this alternative is selected. Using

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<sup>3</sup>This analysis must be performed in a manner consistent with the §404(b)(1) Guidelines whereby alternatives are screened based on environmental impacts and constraints on practicability as defined by regulation. This issue will present a substantial challenge to CALFED in light of the analytic principles CALFED has committed to following. To the extent CALFED's analytic principles are consistent with the regulatory constraints on practicability, such as cost, logistics, technology, and environmental impact these analyses will be acceptable under §404(b)(1). However, to the extent CALFED's analytic principles are inconsistent with the regulatory constraints on practicability, CALFED may be required to revisit its conclusions, and independently justify the results of its internal analysis consistent with §404(b)(1) requirements. For example, if CALFED rejects an alternative based on perceived political resistance, it will need to demonstrate why that alternative is either impracticable, based on cost, logistics and technology, or is more environmentally damaging than the selected alternative. For further discussion of this issue, see Enclosure 3.

this example, if essential elements of the ERPP cannot be practicably accomplished under this alternative, this could be grounds for finding that this alternative does not achieve the project purpose. However, this alternative could still be practicable if it could achieve the essential elements of the project purpose at a higher cost or in a manner less desirable to the applicant.

To continue the example, it would be necessary to consider the implementation of the other program elements in judging whether the "through Delta" alternative practicably achieves the project purpose. While the "through Delta" alternative may not in and of itself sufficiently improve water supply reliability to achieve the water supply reliability component of the project purpose, this evaluation could change based on analyzing the impacts of implementing the Water Use Efficiency component of the overall CALFED program.

**Determination of Least Environmentally Damaging Practicable Alternative (LEDPA)**

To determine the LEDPA, it is necessary to weigh the alternatives in light of the presumptions set forth in the §404(b)(1) Guidelines. In particular, two critical presumptions must be addressed:

1. that practicable alternatives exist that do not involve discharges to special aquatic sites (wetlands, etc.); and
2. these alternatives are presumed to be less environmentally damaging.

In the context of CALFED's alternatives, this creates a presumption that practicable, nonstructural alternatives both exist and are less environmentally damaging than alternatives which involve §404 discharges.

In light of these presumptions, it is appropriate to evaluate the alternatives hierarchically, beginning with "No Action".

**"No Action Alternative"**

This alternative almost certainly would not satisfy at least some of the components of the project purpose. Therefore, it would be easy to rule it out as impracticable as long as the record documented that components of the project purpose unfulfilled by the "No Action" alternative would not be otherwise fulfilled, e.g. by third party action.

## **No Change to Conveyance or Storage Regime**

This alternative would be a no fill or minimal fill alternative. As such, it should be presumed to be less environmentally damaging than alternatives involving substantial fill for conveyance or storage projects. One basic question to address would be whether CALFED could achieve the various components of the project purpose simply through implementation of the common programs.

A central issue in this step of the §404(b)(1) alternatives analysis is whether the Water Use Efficiency and Water Transfer programs would be sufficient to satisfy the water supply reliability component of the project purpose without construction of storage and/or conveyance facilities and without causing unacceptable environmental impacts. For example, the environmental impacts of increased water transfers would need to be considered. Another critical issue in this analysis is the extent to which the ERPP can or cannot be practicably implemented without implementation of conveyance or storage facilities.

It is also appropriate to consider whether this alternative is more environmentally damaging to the aquatic ecosystem than practicable alternatives that involve new storage or conveyance facilities. While the presumption is that other alternatives involving such structural facilities are more environmentally damaging than this alternative, it is appropriate to test this assumption.

### **Alternatives Involving New Conveyance Facilities Without New Storage, or New Storage Facilities Without New Conveyance**

These alternatives would all be reduced fill alternatives (when compared with options that involve both new conveyance and storage facilities). Each of these options needs to be assessed to determine whether they can satisfy the project purpose. This analysis will serve to test the necessity for implementing each of the major components of the storage and conveyance alternatives.

Then, if the "No Change to Storage or Conveyance Regime" alternative survived the practicability screen, the environmental impacts of any of these reduced fill alternatives that survive practicability screening would be compared to the environmental impacts of the "No Change to Storage or Conveyance Regime" alternative.

### **Alternatives Involving Both New Storage and Conveyance Facilities**

These alternatives would be evaluated to see if they practicably achieve the project purpose. If any of these

alternatives pass this test, the environmental impacts of these alternatives would be compared to the environmental impacts of the other alternatives that survived the practicability screening to identify the LEDPA. In conducting this analysis, the presumption remains that "no fill" and "reduced fill" alternatives are less environmentally damaging than alternatives involving both new storage and conveyance facilities.

40 CFR 230.10 (b): Prohibitions/Requirements Associated With Satisfying the Guidelines

1. Consistent with the Coastal Zone Management Act (CZMA)

As the solution area extends into the Suisun Marsh, San Pablo Bay, and San Francisco Bay, the applicant will need to obtain a determination by the San Francisco Bay Conservation and Development Commission at some point, possibly Phase III, that the selected alternative is consistent with the CZMA.

2. Does not violate state water quality standards

The state has primary responsibility for addressing water quality issues through the §401 certification process. However, USACE has an independent responsibility to determine whether a permit will cause or contribute to a violation of state water quality standards. No discussion has been presented on how water quality standards compliance will be documented at the programmatic level. However, CALFED has established addressing water quality problems as necessary to satisfying its purpose and need statement. It would be appropriate for CALFED to address in Phase II how its alternatives (and in particular its preferred alternative, once one is selected) will comply with applicable water quality standards.

3. Does not violate toxic effluent standards or prohibitions under §309 of the CWA

This should not apply within the context of the Program.

4. Does not jeopardize the continued existence of federally listed threatened or endangered species or adversely modify designated critical habitat

Alternatives that substantially disrupt the physical or chemical characteristics of the Delta, which comprise designated critical habitat for the federally listed (as threatened) Delta smelt, or which substantially disrupt the physical or chemical characteristics of the mainstem of the Sacramento River, which is designated critical habitat for the federally listed (as threatened) winter run Chinook salmon, may constitute adverse modification. Alternative 2, and some variations of Alternative

3 and Alternative 1, could have problems here, if more water moves through the Delta to the export pumps than happens currently, or if the alternative causes disruption of migratory patterns of the winter run from the mainstem of the Sacramento River. There may also be problems with the chemical characteristics in the Suisun Bay area, which is also designated critical habitat for both of the species named above. Determinations made relative to the requirement will depend heavily, if not exclusively, on feedback by the USFWS, NMFS, and CDFG.

5. Conforms to Title III of Marine Protection, Research, and Sanctuaries Act of 1972

This element may not be applicable, as no physical actions are currently proposed seaward of the Golden Gate. However, the CALFED solution scope does include offshore waters along much of the California coast.

40 CFR 230.10 (c): Discharge will not cause or contribute to substantial degradation of waters of the United States, taking into account significant adverse effects resulting from the discharge upon:

- (1) human health and welfare, e.g. effects on municipal water supplies, fish, shellfish, wildlife, and special aquatic sites;
- (2) life stages of aquatic life and other wildlife dependent on the aquatic ecosystem; and
- (3) aquatic ecosystem diversity, productivity, or stability:

The concern associated with the human health and welfare component in item (1) is most substantially linked to potential adverse effects on municipal water supplies. Sacramento River water that moves through the Delta increases its loading of dissolved organic carbon (DOC), as a constituent of runoff from agricultural practices in the Delta and the San Joaquin River. Additionally, there is some increase in salinity (and therefore bromides) from saltwater intrusion coming up from the Bay with the tides. If an alternative increases through-Delta conveyance of water for export to southern portions of the state for municipal use, the concentrations of disinfectant byproduct precursors (e.g., bromide and DOC's, referred to collectively as DBP's) could increase over the current baseline. While treatment is available, alternatives that avoid any significant increases should be evaluated (e.g., a "fully isolated facility"). However, the fully isolated facility, by reducing diluent Sacramento River water to the Delta, may result in increased

bromide and DOC to other drinking water intakes. Additionally, all other contaminants could increase in concentration, potentially adversely affecting (1), (2), and (3).

Wildlife and fisheries issues move across all three of the criteria listed above. Arguably, the Delta is already in a state of substantial degradation relative to these resources (otherwise, CALFED wouldn't exist). To the extent that construction and operation of a storage and conveyance alternative has the potential to result in adverse effects on a landscape scale in the Delta, associated with the elements identified in (1) through (3) above, such permitted activities would probably not be in compliance with this element of the Guidelines. Such evaluation is made in the absence of compensatory mitigation. Compensatory mitigation is addressed at 230.10 (d), below.

All of the alternatives being investigated by CALFED, including the "fully isolated facility," have the potential to significantly degrade the aquatic ecosystem in the Bay-Delta estuary, with concomitant adverse impacts to municipal water supplies, if not operated properly. It will be necessary to describe how operational safeguards are being developed and how they will be implemented under each alternative being evaluated, in order to avoid significant degradation.

(4) recreational, aesthetic, and economic values of the aquatic ecosystem:

No discussion or evaluation relative to this aspect appears to have been attempted in the Program's first draft §404(b)(1) alternatives analysis. This omission will need to be fixed.

40 CFR 230.10 (d): All appropriate and practicable steps have been taken to minimize potential adverse impacts on the aquatic ecosystem

This sub-part establishes a requirement to mitigate for impacts to the aquatic ecosystem. Mitigation by complete avoidance is generally addressed through demonstrating compliance with 230.10 (a), above. The next steps associated with mitigation are minimization and then compensation.

Minimization is generally thought of in terms of making projects smaller than originally proposed, while still substantially satisfying the project purpose. While this is most applicable to specific projects implementing the selected alternative in Phase III, there may be some minimization strategies that would be applicable in Phase II.

In addition, once the preferred alternative is selected, it

would be appropriate to discuss compensatory mitigation for the direct and indirect impacts of the preferred alternative. This discussion, by necessity, would be at the conceptual level since impacts could not be fully described until phase III when specific projects are ready to be implemented. However, at the conceptual level, the following issues could be addressed:

- nature of anticipated impacts;
- general discussion of magnitude of potential impacts;
- institutional arrangements for implementing compensatory mitigation, e.g. funding, implementing entities, etc.;
- potential compensatory mitigation strategies, e.g. wetland restoration projects, mitigation banks;
- how the potential mitigation strategies are affected by the various options (which mitigation options are precluded if certain alternatives are selected, which are made possible through selecting particular alternatives); and
- the process for developing project specific compensatory mitigation.

Last, we need to revisit an issue that is a cross-over from the portion of the discussion above on 230.10 (a) regarding "no fill" alternatives and 230.10 (d). To date the Program has not adequately evaluated non-structural strategies for water supply reliability, which is one of the goals underlying the Program's purpose. According to Program documentation, "The goal for water supply reliability is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system."<sup>4</sup> A variety of non-structural strategies have been identified by both the agencies and members of the public. Some of these are being addressed in the Water Use Efficiency Program, while others, such as short-term land fallowing, long-term land retirement, and other ways of transferring water either have not been considered in any detail or have been explicitly excluded from the Program. Some or all of the non-structural measures may be practicable alternatives to reduce the total demand for water and, potentially, address other CALFED purposes, when compared with the cost to construct facilities. To exclude such measures from the Program, CALFED would need to demonstrate that they are impracticable, considering the constraints of cost, logistics, and technology.

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<sup>4</sup>Memo by CALFED Bay-Delta Program, dated February 13, 1997, SUBJECT: Purpose and Need Statement for the CALFED Bay-Delta Programmatic EIR/EIS