FORMULATING CALFED BAY-DELTA PROGRAM ALTERNATIVES
March 10, 1996

INTRODUCTION

This paper identifies several concerns about the formulation of CalFed Bay-Delta Program alternatives. This paper also proposes a method of formulating alternatives that would address these concerns.

This paper is based on a preliminary agreement reached recently by many of the "Stakeholders." In particular, many of these stakeholders agreed that each CalFed alternative should consist of the following four elements:

1. A Comprehensive Ecosystem Restoration Program

2. A Comprehensive Program of Enhanced Efficient Water Management (referred to in this paper as "demand management")

3. Facilities or Other Options to Meet Water User Objectives

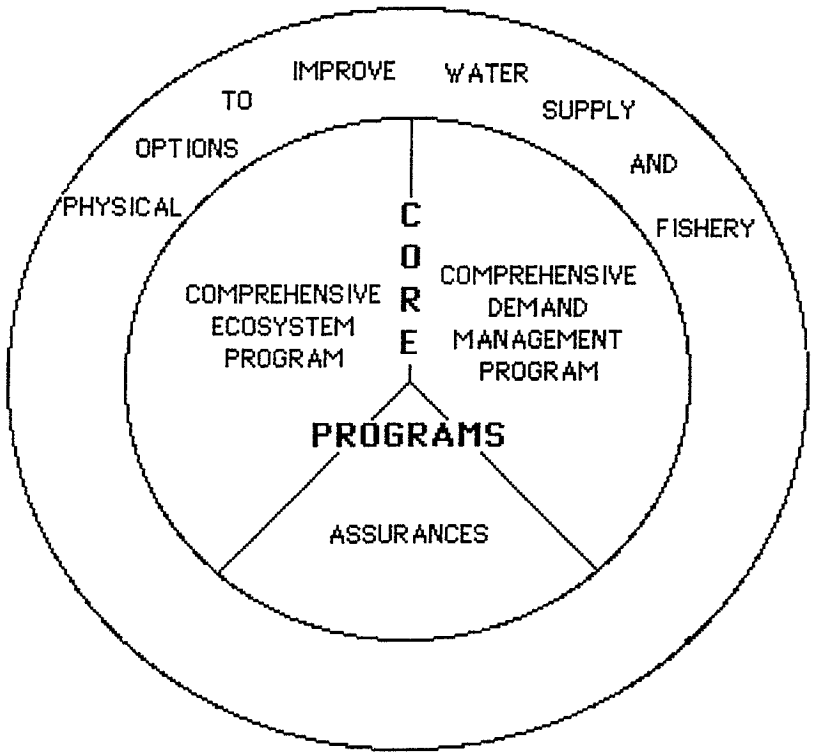
4. Assurances That All Anticipated Benefits Will Occur

The Comprehensive Ecosystem Restoration Program, the Comprehensive Enhanced Efficient Water Management Program, and the Assurances could vary somewhat from alternative to alternative but would essentially be common to each alternative. They would be core elements.

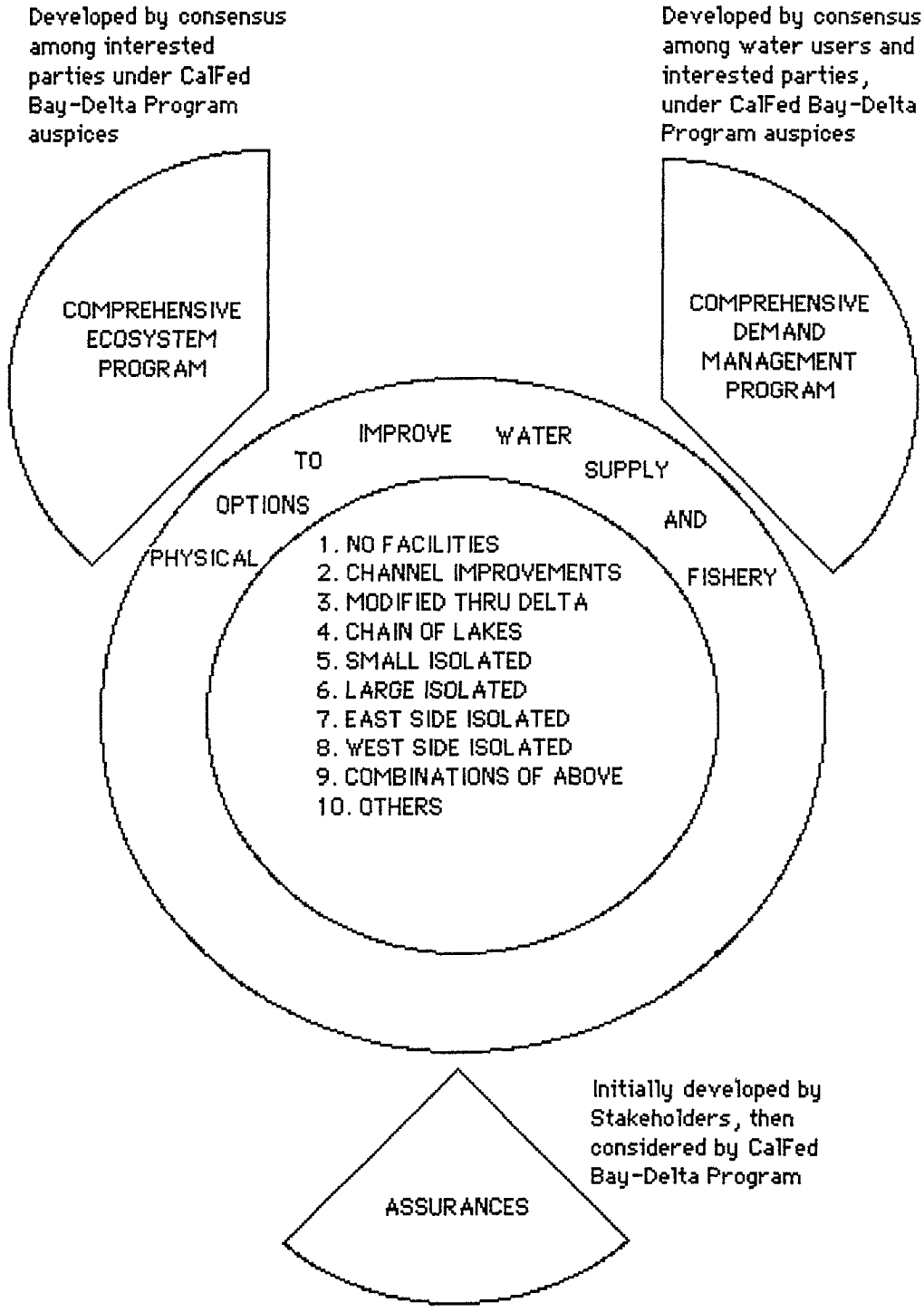
Three other kinds of actions, levee maintenance, real time monitoring, and environmental water purchasing, might also be included as core elements.

The following diagram summarizes the process of alternative development described in this paper.

ELEMENTS OF EACH ALTERNATIVE



DIS-ASSEMBLING AND DEVELOPING ALTERNATIVES



CONCERNS: DEVELOPING THE CORE ELEMENTS

Ecosystem Program

Ecosystem restoration actions are presented as "real alternatives" when, in fact they are not. Whereas most CalFed Program participants agree that a Comprehensive Ecosystem Program is needed, there is little data on which to base the specifics of such a program.

At this time we do not know what the specific benefits of many ecosystem actions, especially physical habitat restoration actions, would be. We do not know how much they would cost. We do not know whether or, in some cases, how they could actually be carried out. Despite these uncertainties, there is good reason to believe that physical habitat restoration would produce significant, albeit unquantifiable, benefits.

We do know those things about a number of upstream actions, but not about many of the actions being presented in and downstream of the Delta.

Because of this, recommendations for specific ecosystem actions are not possible at this time. Nor are they necessary.

Instead, we should be defining the process of developing and implementing specific actions. So, we need to define, at a minimum, the following:

The general goals for such a program. These goals would not consist of prescriptions such as 7,000 acres of riparian habitat in the Delta because we do not know if that is feasible, how much it might cost, or what benefits it might produce.

The appropriate level of long-term funding for a successful comprehensive ecosystem program.

How such a program would be administered, that is, how decisions could be made about spending the money and running the program.

How the program can take advantage of adaptive management.

How related programs, such as the Category III Program and CVPIUA activities will be coordinated or merged into the CalFed Bay-Delta Program.

How this program could begin immediately to produce early successes.

These process issues should be worked out under the auspices of the CalFed Program by the key interest groups whose support or opposition would be critical to its implementation.*

Once such a program has been worked out, it should be a common element of each CalFed alternative. There might be some variations, among alternatives, in what the program might do. For example, consider a CalFed alternative consisting in part of leaving the Delta export pumps where they are. For that alternative it may be that comprehensive physical habitat actions would not be appropriate in the southern Delta because if such actions work, they might just turn out to be an attractive nuisance for adverse effects of export pumping.

On the other hand, consider an alternative that re-located those export intakes. Such an alternative might be consistent with extensive physical habitat actions in the southern Delta.

In either case, they basic process of administering the program would not change, only the specific decisions that the program might make in the future.

One other point--Because the costs, benefits, and practicality of many ecosystem actions are uncertain at this time, such actions, or groups of such actions, cannot be considered as alternatives to Delta water supply facilities. Such facilities should rise or fall on their own merit, not because their environmental deficiencies can be offset by the uncertain benefits of ecosystem restoration actions.

Demand (Efficient Water) Management Program

A demand management program is also not an alternative in the CalFed Program. Demand management cannot be prescribed by the CalFed Program without the water users' concurrence. (Actually, it could be prescribed; it just would not be carried out.) Therefore, such a program must be worked out by the water users and other interested parties under the auspices of the CalFed Program.

The resulting program should be committed to by the water users, and it should be a common element for all CalFed Alternatives.

This demand management program should consist of urban BMP's agricultural EWMP's, and could include programs for wastewater reclamation and conjunctive groundwater use within water agencies where such programs make sense.

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* I believe the best way to create this program would be for the water users to take the lead in creating a Category III Program whose purpose and governance would allow its expansion to become the CalFed Bay-Delta Program Ecosystem Program

In other words, many of the actions being considered by the CalFed Program, actions that fall in the categories of ecosystem improvement and demand management, should be taken out of the alternative mix and put into two special programs, one for ecosystem improvements and one for demand management, and the specifics of these programs should be developed by separate consensus or negotiation processes under the auspices of the CalFed Program.

Once developed, they should be common elements in all CalFed alternatives.

Assurances

Assurances are a key element of each alternative. Simply put, we must figure out how to ensure that the planned benefits actually occur. This problems arises partly from the fact that the final plan for fixing the Delta cannot be implemented all at once. It will be carried out in stages. All parties must know that what they thought would happen will actually happen.

What needs to be assured? The essential elements are listed below:

That funding for carrying out the ecosystem program will be provided over the long term

That the various ecosystem program (Category III, CVPIA, Four Pumps, etc.) will be carried out at least in a coordinated, if not merged, manner

That the goals of the ecosystem program will be achieved

That the demand management program will be carried out

That the operation of Delta and other water supply facilities will not be changed to the detriment of the environment

That the water supply benefits of water supply facilities will not be compromised by future environmental requirements.

The first priority for assurances are these elements, and assuring these elements should be addressed initially in a simple, straightforward manner. In the past, assurances have been referred to as the "institutional" effort, despite the fact that providing such assurances may not require any institutional changes at all.

In fact, creating new institutions or modifying existing ones may not even be the best way to provide assurances. Institutions are creatures of the legislature. Their powers and authorities, their very existence, can be changed by the legislature. Therefore, new institutions are probably a poor way to provide assurances.

Despite this reality, past efforts to address the issue of assurances have expanded in scope to something like "defining the appropriate role of water-related institutions in a democratic republic" with a corresponding lack of focus and relevant results.

It is possible that institutional reforms ought to be considered for the CalFed Bay-Delta Program. For example, some sort of environmental water authority could be considered to implement what appears to be an appealing concept, namely, one of giving environmental interests a share of water produced by future water supply facilities in lieu of environmental requirements for those facilities. But such a concept does provide assurances that the things listed above will actually occur.

Also, institutional changes are difficult. For example, most everyone agrees that California's water transfer system is cumbersome at best. But changing the patchwork of laws now governing the process has received much attention and provoked much controversy. Perhaps the CalFed Bay-Delta Program should tackle this problem, but not at the expense of providing assurances as defined above.

The first priority is to directly address assurances that the above things will occur. Once significant progress has been made on that front or if that effort reveals that institutional reforms are the only or the best way to provide assurances, then and only then should other "institutional" issues could be addressed.

Crafting assurances is an appropriate job for the Stakeholders to address first. If the Stakeholders can produce assurances, then these assurances should be considered by the broader interests represented in the CalFed Bay-Delta Program.

FORMULATING ALTERNATIVES

So far, it has been difficult to figure out how the 20 CalFed alternatives were formulated. There does not appear to have been a logical alternative-building process. One such process is described below.

Recall the Stakeholders' agreement as to what an alternative should consist of:

1. A Comprehensive Ecosystem Restoration Program

2. A Comprehensive Program of Enhanced Efficient Water Management

3. Facilities or Other Options to Meet Water User Objectives

4. Assurances That All Anticipated Benefits Will Occur

Development of 1, 2, and 4 is addressed above. This section describes how the actual alternatives, those options referred to in Element 3 above, could be developed. This process consists of the following steps:

1. Identify Delta water transport facilities. A possible list could be as follows:

    1. No new Delta transfer facilities

    2. Channel improvements and physical barriers

    3. Conventional through-Delta

    4. MWD (AAA-map) through-Delta

    5. Chain of islands

    6. Urban only isolated eastern-Delta

    7. Full-scale isolated eastern-Delta

    8. East side foothills canal

    9. Ship channel west side

    10. West side full-scale isolated

    Others

2. For each Delta water transport facility alternative, identify the possible future range of environmental and other operational constraints. Also, for each facility alternative, formulate at least one "share the water, real time adaptive management" mode of dealing with environmental concerns.

The idea would be to bound the future environmental requirements that cannot be known now. For example, at the least stringent end of the continuum, we might consider requirements based on the assumption that the Winter-run and Delta smelt would be de-listed and that X2 requirements would be relaxed (either because the science supported relaxation or because ecosystem improvements made relaxation appropriate). At the other end of the continuum we might consider that more species were listed requiring more protections.

3. Using a reservoir operations model or equivalent other calculations, determine how much water could be supplied to urban/ag users for each facility alternative for the range of operational constraints.

4. Compare this water supply to future ag/urban needs, assuming that the demand management program is carried out. This need not be a rigorous comparison. The intent is only to identify those facilities that have a high probability of meeting future needs, under all possible reasonable environmental and other constraints, and those that do not. We will call those alternatives that pass this test, "nakedly sufficient" water supply alternatives.

Each transport alternative would be evaluated with respect to how much water could be made available to export areas and how much water would have to come from current upstream users. If the water rights negotiations among exporters and upstream users had been concluded, those agreements would be used to allocate responsibility among upstream and export users. Otherwise, a reasonable range of assumptions could be made.

5. For those alternatives that are not nakedly sufficient, re-analyze each one over the range of operational constraints to see which alternatives could accommodate enough water transfers (willing seller) to fill in deficiencies in meeting future ag/urban needs. We will call these alternatives "water transfer sufficient" water supply alternatives.

6. Identify those alternatives that would not meet future ag/urban needs, with or without transfers, or only with transferred amounts that are so large as to cause serious concerns about third party effects.

7. For each of these alternatives, add storage in sufficient amounts and in appropriate locations to produce an alternative that, with storage, will meet future ag/urban needs, using transfers where needed. We will call these alternatives "storage sufficient" water supply alternatives.

Storage in varying amounts could be added to each of the storage-challenged alternatives. Storage could be added in each of the following four locations:

Upstream of the Delta, surface and groundwater

In the Delta

Immediately adjacent to the Delta (e.g., the Kellogg Project), along with any necessary increase in Delta export capacity to fill that storage

South of the Delta in or near export areas.

These steps will produce an array of alternatives consisting of the following:

1. Nakedly sufficient water supply alternatives

2. Water transfer sufficient water supply alternatives

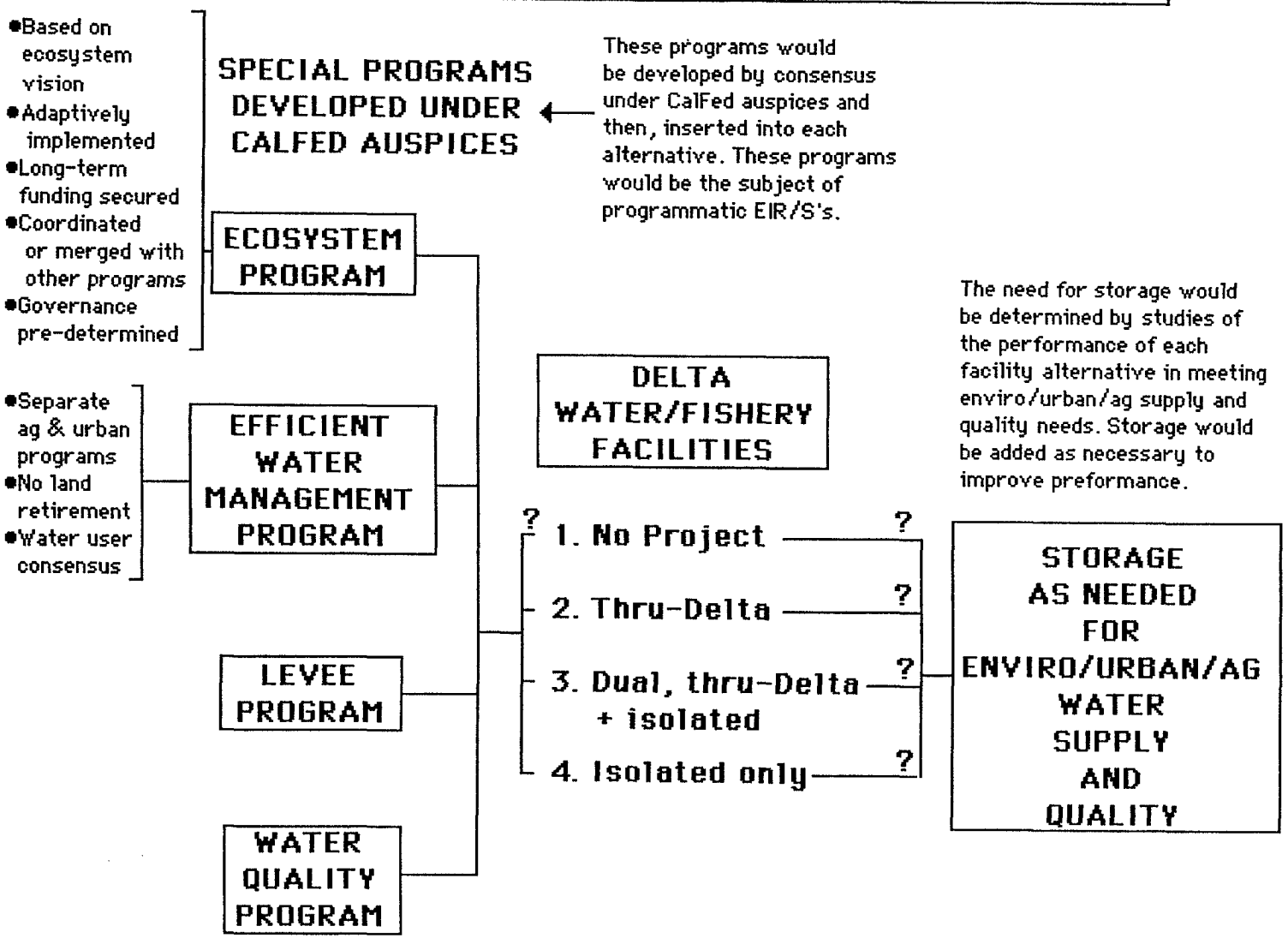
3. Alternatives for which there is a reasonable possibility that future ag/urban needs cannot be met, even with transfers. These are alternatives for which demand management measures in excess of those agreed to by water users would be necessary to match supplies and demands.

4. Storage sufficient water supply alternatives.

5. Alternatives for which there is a reasonable possibility that future ag/urban needs cannot be met, even with transfers and storage. These constitute a second group of alternatives for which demand management measures in excess of those agreed to by water users would be necessary to match supplies and demands.

Finally, this array of alternatives should be screened using the CalFed Bay-Delta Program Solution Principles.

FORMULATING THE CALFED SHORT LIST OF ALTERNATIVES



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