MEMORANDUM

TO: Ag Guys

FROM: Heaton

DATE: August 12, 1996

SUBJECT: Efficient Ag Water Use

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This is a follow up to my memo of August 2. I have received comments from a number of you and appreciate your response. I will continue to try to keep you posted on the progress of this so that there will be no surprises in the workgroup or in the public CalFed process.

CalFed consultants met last week to begin drafting the ag section of the Efficient Water Use Component. In this memo I will try to describe the general outline of what this document might look like and will also attempt to respond to some of the questions, issues and concerns raised by your comments. Again, please keep in mind that this is my own version of things; this memo is not a CalFed document and represents nothing other than my own muddled thinking on this subject!!

I. The Basic Policy Questions

In a number of ways, many of you (and others) have asked why we should even have an "Efficient Ag Water Use" component in the CalFed program and what can be accomplished thereby. The argument seems to be that since there is a not a lot of "new water" to be made from ag conservation and efficiency improvements, why bother?

I think there are at least three fundamental reasons why we should bother. First, politically I think it is unacceptable to say that ag cannot do any better than it is doing now in terms of efficient water use (no matter how you define efficiency). Agriculture in the Central Valley diverts, pumps and applies something on the order of 20 million acre feet a year. I do not see how we can expect the political leadership of California to go to the voters and ask for several billion dollars of habitat and infrastructure improvements, without convincing evidence that agriculture is using the water it has now in a highly efficient manner (at the field, farm, district or entity, and basin or regional level).

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The second reason to have an Efficient Water Use component is to raise and illuminate the large social policy issues that Alex and Bill, in particular, have been trying to bring to BDAC's attention. To me, this means facing squarely the question whether Californians generally want to continue to have a $20+ billion ag economy. Certainly, one possible result of the Efficient Water Use component (and other elements of the larger CalFed Bay-Delta Program) will be a shift of water from ag to urban/enviro, over a shorter period of time than might otherwise occur. This means making certain tradeoffs, generally involving adverse impacts on the ag economy in order to generate other economic or public trust benefits.

I think we have to consider the possibility that the social policy decision may be that Californians generally do not care all that much about protecting and preserving the ag economy. It may make no great difference to the typical consumer whether the tomatoes in the grocery store are grown in California or Mexico, or that agriculture commodities support a positive trade balance. My point is that I do not see this issue being discussed directly and it should be; and this Efficient Water Use component provides a forum for that debate. But ag should be prepared for an unfavorable outcome.

The third reason to go through this exercise of having an Efficient Ag Water Use component is that we may actually be able to identify some ways that we <u>can</u> improve the level of efficiency of ag water use and the water transfer market. I do not think it is sufficient to say that ultimately the system is adequately efficient because the only water that is lost to the system is that which is evapotranspirated or percolates to unusable groundwater. There may be economic value to the farmer and social value generally to improvements in application efficiency (in the technical sense) and distribution uniformity. These improvements <u>may</u> have ancillary adverse consequences (impacts on wetlands and groundwater), but again, I think the idea here should be to point out those choices and let the policymakers decide.

II. Threshold Issues

In my August 2 memo, I identified what I consider to be five threshold issues. These are premises or assumptions which go to the scope or the parameters of the Efficient Water Use component. I am repeating these because I want to be sure that there is at least some general agreement among the ag representatives on these points.

A. When we are talking about efficient water use, we are not comparing usage across sectors. I think that the focus of the CalFed discussion is properly on the question: within each sector, is water being used efficiently, or, within each sector how can water be used more efficiently?

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B. There are different ways of defining ag water use efficiency and differing points of view about whether efficiency should be looked at from the field and farm level or from a broader regional or watershed perspective. Based on the comments I have received and discussions with a number of you, I am inclined to avoid trying to come up with a singular definition. I think the document should reflect that efficiency can be considered at several levels, from application efficiency and distribution uniformity at the field level, to total system efficiency at the watershed level. When we talk about efficiency improvements, perhaps if would be sufficient to say that this means getting more beneficial use, and thus more economic and social value, out of a unit of water.

C. The emphasis of the CalFed Efficient Water Use component should not be on making ag water available for environmental purposes. Ag should acknowledge that increases or improvements in efficiency in the ag sector may result in one or more of the following: water being made available for re-allocation by voluntary transfer to other ag, urban or environmental uses; alleviation or mitigation of a water shortage in a water deficient area; or, reduction of a future unmet demand.

It should also be acknowledged that efficiency improvements may not result in any reduced application of water at all and may not result in reduced volumes of return or drainage flows, but may instead result in better or higher production or yields, or changes in timing of return flows, or improvements in the quality of return flows. These type of results are nonetheless efficiency improvements because we are getting more beneficial use out of the same unit of water (first,its irrigation value; second, its environmental value).

D. Traditional concepts of conservation and efficiency measures will not produce a lot of (if any) "new" water. However as discussed in Part I above, ag will have to acknowledge that the status quo is not good enough, and that in many areas of the state, there are things that can be done which will result in higher levels of water use efficiency.

E. Land retirement is off the table in the context of the Efficient Water Use component. There will be a land retirement element in the water quality component for ag drainage source control. And there will be mechanisms for land and water acquisition in the ecosystem restoration component.

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II. Objectives

Following a general introduction and policy statement, the draft document will list a number of objectives, similar to those articulated in the urban water use document. Following is a preliminary list of some of the ideas the consultants have considered as objectives:

- Provide incentives and mechanisms to achieve efficiency improvements

- Preservation of local flexibility in developing and implementing conservation and/or efficiency programs

- Build on the AB 3616 MOU

- Emphasize market incentives over regulatory mechanisms

- Encourage more "multiple purpose" use of water

- Emphasize and encourage watershed management

- Encourage or create process for more efficient water transfer market

- Educate public on agricultural water use

- Provide support and assistance to local agencies for conservation and efficiency improvements

- Remove institutional (legal, regulatory, administrative) barriers to more efficient water use and water transfers

III. Component Content

Assuming that there is general agreement on the broad policy purpose, the threshold premises and the objectives, the substance of the ag water use component would focus on two levels:

(1) identification of institutional barriers to efficient water use and encouraging or requiring changes at the institutional level; primarily I see this as an effort to create a rational and equitable set of rules for a statewide water transfer market;

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(2) structuring a planning process which would identify potential efficiency improvements at the local level (this could mean field, farm, district, water rights holder or watershed) and encourage or provide incentives for changes at that level.

[The rest of this memo is the same as the August 2 memo]

III.A - Institutional barriers and possible changes

1. Water Transfer Market - The fundamental problem seems to be the continuation of barriers to an efficient water transfer market. Theoretically, if the water transfer market works efficiently, economic incentives for efficient water use should be high.

a. One key barrier has been a lack of consistency in the criteria used by the regulatory agencies (USBR, DWR, State Board) to determine what is saved or conserved water which can be transferred. There have been several instances in the past few years where CVP or SWP contractors or water rights holders have been discouraged from making water available for transfer by the position of USBR, DWR or the State Board towards conserved or saved water.

State law is clear that saved or conserved water can be transferred without any loss or harm to the underlying water right. However, if the project operators take the position that saved or conserved water reverts to the project, or if the State Board takes the position that saved or conserved is abandoned or forfeit, these kinds of transfers will not happen.

So, one thing that CalFed could do is propose a uniform set of standards or criteria on what constitutes saved or conserved water. Ideally, these standards or criteria would be recognized and applied consistently by the Bureau, DWR and the State Board. Water rights holders and project contractors alike would be able to undertake conservation or efficiency improvement activities and make water available for transfer without concern that by saving or conserving water they were jeopardizing their contract or water rights supply.

b. A second and related issue is the lack of a uniform rule or standard on what constitutes transferable water. Should transfers be limited to the foregone consumptive use or should a more flexible standard apply? Should surface water replaced by groundwater be treated differently than saved or conserved surface water?

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c. Another significant institutional barrier to an efficient water market is the lack of clear and consistent rules on carriage water requirements, particularly for transfers across the Delta. Unreasonably high carriage water requirements create a major disincentive to such a transfer. Related issues include such matters as priorities for conveyance through CVP and SWP facilities and capacity problems. CalFed could propose some technical criteria for carriage water requirements.

d. We will have to face the issue of third party impacts of transfers, particularly long term transfers, on the local economy. It is unlikely that this set of issues can be fully resolved by the CalFed program but it is an area that will require careful discussion and analysis. One possibility is to propose limits on transfers from a particular district or area, or have limits on the change of place of use of water under a particular permit or license. Another way to get at this might be with an escalating or progressive "tax" or fee on transfers, with a portion of the money dedicated back to the source county to mitigate economic impacts on the local governments.

2. Contract issues - Certain provisions of some of the CVP and SWP contracts for ag water supplies constitute a type of institutional barrier to efficient water use. Most often cited are the "use or lose it" and "take or pay" requirements. Essentially, these provisions require a contractor to pay for all water allocated under the contract even if not all of the water is actually used in a particular year. Obligation periods may present a similar type of problem. The natural result is that contractors will take delivery of water and "find a home" for it in a manner which may not be the most efficient method of use.

Similarly, at least some CVP contracts do not provide for carrying unused water over from one year to the next. While carryover is always subject to capacity and priority limitations, the lack of a carryover provision in a contract can encourage the use of water in a year when it might be more efficient to defer the use of that water until the following year.

3. Water rights law - In some respects, the provisions of water rights law dealing with abandonment of water can be seen as an institutional barrier to efficient water use. Water Code Section 1241 provides that "when the person entitled to the use of water fails to use beneficially all or any part of the water claimed by him... for a period of five years, such unused water may revert to the public and shall, if reverted, be regarded as unappropriated public water." In spite of other provisions, such as Section 1011, which provides that saved or conserved water is water that is reasonably and beneficially used, there appears to be some concern among water rights holders that failure to fully apply all the water to which they are entitled puts the water right at risk. This may be an area which the CalFed program could address.

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III.B Planning Process and Local Programs

It may be that merely reducing or removing barriers to an efficient statewide water transfer market will not be sufficient to achieve significant increases or improvements in ag water use efficiency. In that event, CalFed may want to include a program which would provide a different set of incentives or mechanisms for improving ag water use efficiency.

This program could provide a means for water users to consider the kind of criteria and analytic methods which have been developed in the USBR Water Conservation Guidelines, the USBR Criteria for Evaluating Water Management Plans and the proposed Memorandum of Understanding Regarding Efficient Water Management Practices for Agricultural Water Suppliers in California (the AB 3616 process).

The basic principle here is that all water districts and major water rights holders should critically examine their current water use and irrigation practices and consider ways of operating more efficiently. Note that I am suggesting that the only requirement would be to develop a plan; no predetermined result or outcome or specific action would be required. But it seems to me that all users of significant quantities of water can legitimately be asked to explain to the public certain things. Some of the legitimate questions would be: what is the source of your water supply; how much water do you divert, pump and apply; when do you divert/pump it and how do you apply it; what are the results of your water use; what corollary benefits does your water use provide; what measures have you taken to improve your water use efficiency or conserve your water supply? (This is obviously not an exhaustive list, but you get the idea.)

A second part of this planning process might be an analysis of how the water usage might be changed to achieve a "higher level" of efficiency (keeping in mind this can mean many things - reallocation for transfer; solving a local shortage problem; effecting a change in timing or quality of return flows). Then the question is what are the costs and benefits of making that change. Only at that point can a rational decision be made about whether the change ought to be made.

It may be that many water users, particularly those operating under perennial water short conditions, have already reached a practical maximum level of efficiency and that additional actions would have counterproductive impacts. But for others, a critical evaluation may result in bringing to light efficiency improvements which are both reasonable and feasible and which are advantageous economically to the water user and which have some additional social utility (i.e, an environmental benefit).

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I see the Bureau's guidelines and the AB3616 MOU as providing a menu of items or programs which a water district or water rights holder should consider. Many or most of the items on the menu may not be appropriate for the local conditions. Where a particular item or program would work or might work, and the district or water rights holders want to undertake the effort, the program should include a mechanism to provide technical and financial assistance.

The CalFed program could incorporate the existing water conservation offices in DWR and USBR into a statewide program which would provide water management "audits" or reviews, at the request of the district or water rights holders. Perhaps this program could be located in the Department of Food and Agriculture or could be contracted out to UC Extension. Or, this could be the staff function of the Ag Water Conservation Council proposed in the MOU. This type of program might be useful to those entities which do not have technical expertise on staff or cannot afford to hire the expertise needed for such a study.

The audit or review function could identify those areas in which an entity might make improvements in its water management, and then assist in developing and funding implementation programs. The point of such a program would not be to coerce the water using entity into making any specific technical changes, but to remove the excuses for not making the changes (we can't afford it, we don't know how to do it; we don't have the time, etc.). The program would not mandate or require any specific technical fix, but merely describe those fixes which would improve the water user efficiency and point out the economic value to doing so.

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