99-104

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Mr. Lester Snow
CALFED Bay-Delta Program
1416 Ninth Street
Sacramento, California 95814

Dear Lester:

Following are my comments on the Revised Phase II Report. I have tried not to repeat previous comments except for elements that I feel very strongly about and where my knowledge and perspectives may be beneficial to the process.

Let me say, first of all, that I fully endorse the adaptive management concept. Adaptive management should be applied to all aspects of the CALFED Bay-Delta Program.

However, there are several projects for which the need and most of their benefits have already been demonstrated. These projects should proceed now and be fine tuned later as additional elements are added and the Comprehensive Monitoring, Assessment, and Research Program (CMARP) clearly suggests operational modifications are needed. For example, the Tracy Fish Screens have been known to be defective for more than 20 years and should be replaced without delay. There should be no impediments to immediate action.

If properly designed and managed, the concept of an Environmental Water Account (EWA) has considerable potential benefits. The principle of the EWA, as I understand it, is quite similar to what I have always called *Totally Coordinated Operation*. That is, take advantage of all storage and conveyance facilities through exchanges and real time management for the benefit of all uses, including both the in-stream and consumptive uses. I do not think that management of the EWA should be under the sole control of the fisheries agencies. The consumptive and recreation users also have an equal interest in the operations of the total system. Calling it an environmental account may be politically expedient for now, but it should account for all "banked" water, whether it is upstream or downstream of the Delta, groundwater, or terminal storage in the Bay Area or Southern California. I once proposed a Delta Water Account but it was designed to serve as a guide to additional water development needs so that planning efforts could be scheduled so needs could be met in a timely fashion. The EWA should be broadened to incorporate water accounts for all or most of the beneficial uses or agencies. The principles established at the Kern Water Bank could be used to manage the account. It is possible that the EWA could have a water account in PG&E's

Lake Almanor and a cash account for the utility (see more under the heading of Storage). By all means, do not limit the accounts to environmental uses. The principle can be applied to any cooperating entity that has storage or conveyance capacity that is located and timed to facilitate an effective exchange.

My perception of your plan, as described in the report and based on discussions with staff, is that the concept is not going to function effectively without new upstream storage. The potential flexibility and exchange capabilities will be limited and I do not believe that you can achieve the benefits the report claims. I say this simply because all existing upstream storage is overcommitted. Both CALFED and DWR in Bulletin 160 totally ignore the limited (lost) active storage in Shasta, Oroville, and Folsom Reservoirs. And to my knowledge, your studies are not supported by coordinated operation models with the limited active capacities of the upstream reservoirs or with additional westside storage. Such studies would show both what could be accomplished with new capacity and, maybe more important, that some of the alleged downstream benefits may not be possible with the limited existing capacities.

Congress has already reallocated 800 taf to the EWA for fish, so that is your starting account. Additional reallocations include the 400 taf to ducks and the yet to be determined Trinity River flows that are anticipated to be on the order of 400 taf. Adding the reduced yield as a result of the reduced active capacities at Shasta and Oroville taken under the Endangered Species Act, we are talking about 2 maf.

My principal concerns are related to the inadequacies associated with the report's treatment of *Conveyance and Storage* and the obvious excessive weight afforded emotional hyperbole over technical facts. Your proposed scheduling process only delays the inevitable and will increase their final costs. The following will expand on my views, starting with comments on the Program Elements in reverse order from your report format.

The real issues (water deficiencies and Delta water quality) are skirted with lots of vague terms like "Balanced Program," "Broad Range of Water Management Programs," "Needs Analysis" (we know we are short and know how to address the situation in the surest way), "—would have to be demonstrated to be the most cost effective and least environmentally damaging alternate." The latter phase is applied for unsubstantiated reasons to both the storage and conveyance elements of the program. The need for both those elements, in my opinion, has already been adequately demonstrated. On the other hand, no such criteria are placed on the ERP, where definitions are scarce. The often referenced "broad range of water management options" is treated in many sections of the report like shooting a pheasant with No. 9 shot. You get a lot of hits but not much success at accomplishing your objectives. Many of the options have been studied extensively and ought to be underway.

The "assurances" question seems to be a serious hang-up. It seems to me that you ought to be able to use the *Continuing Jurisdiction* principle that the State Water Resources Control Board uses in all of it's water rights decisions. Whatever agency is formed to oversee the program should retain continuing jurisdiction.

Delta Conveyance

In 1965, all the interested agencies supported the Peripheral Canal (isolated facility) and not much has really changed since. The emotional and political hyperbole since then has masked its benefits. I know, my own state Senator has vehemently opposed the Isolated Facility, for reasons I don't understand. The only explanation that I can come up with is that he, like many others, got wrapped up in the hyperbole during and after the campaign on Prop. 200. The Peripheral Canal was not a "rape of the north," and it was not a "pipeline to the south." It was and is a needed element of the Delta solution. All this is no excuse to ignore the facts and weigh in on philosophical opinion. As I have said many times before, the most effective way to assure high quality water to two-thirds of this State's population is to bypass the Delta and separate the export water from the fish, then treat the other Delta issues on their own merits. The *common pool* concept is a carryover from the gratuitous operation of Shasta Dam during the early years when all or most of the water was regulated and released through the Delta. You can't blame some of the Delta folks for wanting those conditions to continue, but they ought to be willing to pay for it. Wasting carriage water and at the same time degrading the export water makes no sense at all. And it is absolutely ludicrous to hold the bypass hostage to ERP. Even if the carriage water savings are less than Delta outflows for specific Delta issues, the higher quality water for export is worth it. Nothing can be lost by proceeding with the Isolated Facility, and the through-Delta improvements will only add synergistically to conjunctive operation. In addition, the Isolated Facility certainly will guarantee high quality export water in the event of inevitable levee failures.

Storage

Storage is always listed last and is being held hostage to ecosystem restoration. In my view, the program has caved in to philosophical opinion rather than readily available facts. The *real* issues are skirted with an abundant use of such vague terms as *Balanced Program*. There can't really be a balance when only 5 percent of the $4.4 billion first-stage funding is for storage and that funding is for studies only. This means a 7-year delay on a real start for new water that is already needed NOW. The facts speak for themselves. The system currently is short by over 2 maf . The "conflicts" are simply water shortages and the sooner this is recognized the sooner we can get on with filling the deficiencies. A significant volume of water can be put into the Sites reservoir, for example, and without any significant environmental impacts. Some of this additional water is actually needed for the ERP. This water can be released from storage as new water for exchanges with westside diverters to help Shasta Lake levels and river fisheries, groundwater recharge, and regulation of flood flows for Delta outflow or export.

At this point, I am not aware of any detailed and coordinated operations studies that show the yield effects of the lost active storage at Shasta, Oroville, and Folsom Reservoirs, as well as how the lost storage would be replaced. And, there have been no similar studies that would show how conjunctive operations of westside storage with all other storage can effectively supplement water available at the Delta.

To substantiate my point, I recently reviewed the Sacramento River flows based on spills from Shasta Dam for the past 5 years (1995-3/19/99). Based on using the GCID and TC canals at a capacity of 2,000 cfs each, almost 3 maf could have been pump stored at the proposed Colusa-Sites reservoir. This is more than the probable storage space that might be available at any point in time and means that much of the water could have been available for release during the low flow months for groundwater recharge, exchanges with westside users and Shasta, supplemental Delta outflow , or export to the south for both surface and groundwater storage. The annual distribution is as follows:

1995	465 taf
1996	350 taf
1997	520 taf
1998	960 taf
1999	680 taf
total	2,975 maf

Nothing can be lost by the addition of 3 maf at the Colusa Sites reservoir. This amount of storage will not make up for all the current deficiencies (accepting the potential real savings by the common elements) but will at least replace most of the lost active storage of the system. It will also offer many options for more efficient water management in the Sacramento River Basin, including enhancing the probability of a successful ERP. In contrast, the report claims that the ERP will "improve water supply reliability."

I would forget any reoperation of Shasta and Oroville Reservoirs. They are so overworked now that the there is nothing left to improve except by conjunctive operation with significant storage on the west side of the Valley. That is the only way you can modify the existing operations to improve efficiency and provide flexibility for various downstream actions. The synergistic effects of operating westside storage with existing storage have not, to my knowledge, been adequately explored.

I don't favor raising Shasta Dam for a number of reasons, the first of which is the restrictions on flexibility when you convey the new water down an already mismanaged Sacramento River canal. However, there is one very simple option to increase the capacity by over 100 taf at a very nominal cost. This option is to modify the 2-foot drum gate flashboards to 5 feet as I had originally proposed back in 1960. No significant relocations would be required, and the concrete core in the earthfill on the left abutment would not be overtopped. Redesign of that section would be a major undertaking if the lake surface is raised above it, and other very expensive relocations would be required.

Groundwater storage certainly is an integral part of existing and any proposed expansion of conjunctive use. We have only touched the potential for groundwater storage at the Kern Water Bank. The overdrafted San Joaquin Valley groundwater basins seem to be ignored in Bulletin 160, both from the standpoint of a demand on the one hand and as expanded SJ Valley storage in the future. But, in my opinion, there is very little that we can do to realize

that storage potential without upstream storage on the west side of the Sacramento Valley. Some regulation of flood flows, whether for days, months, or years, will be necessary to take full advantage of the windows of opportunity (pump and conveyance capacity) when available. For that matter, there is no way the potential for Sacramento Valley groundwater storage can be realized unless it is backed up by additional surface storage to assure recharge.

Another real need for supplemental upstream storage is to provide the additional water for Delta outflow in the event of probable levee failures. The report simply relies on additional releases from the existing overdrawn bank that, in my view, will only result in some one else's deficiency. The latter action is no way to improve reliability of the water supply.

PG&E reservoirs should be evaluated for drought year supplemental water. When I ran the first operation studies for Oroville Dam in 1949 and developed the inflow hydrology, I obtained the operations criteria for Lake Almanor. Their power operation criteria for the 7 year dry cycle 1928-34 held a carryover in '34 to satisfy an additional water year '31 to the cycle. This is far too conservative and your proposed EWA could obtain the excess carry-over using a reserve cash account to purchase out-of-state power if PG&E's output is reduced. On the other hand, PG&E would produce more energy with the additional water during the dry cycle if they did not employ the '31 contingency. In addition, the cash account could be used to purchase stored water from PG&E's Pit River system by buying out-of-state power for the reduced output if their storage level is drawn down to meet downstream uses. Again, this illustrates the advantages of upstream storage that is available to serve all uses before the water reaches the Delta.

In general, the proper analysis and use of upstream storage has been sadly neglected. There are more advantages to water stored at the head of the system than, say, south of the Delta. The report does not discuss this advantage. To the contrary, many additional demands in or south of the Delta are assumed to be met by upstream storage, but there is no supporting documentation of how more deficiencies in the Sacramento River system will be avoided.

Following are my comments on the six remaining Program Elements, but in the reverse order to the report listing.

Watershed Program

It is appropriate to address the potential enhancements in timber management, potential increased water supply, and water quality. I will not comment further on this element as it is not my highest priority.

Water Transfer Program

Transfers have been harassed by the lack of cooperation by most of the agencies. Yes, you should address all potential actions that will encourage effective, efficient, and equitable implementation. There have been all too many impediments, either perceived, real, or both. Improvement in transfers, however, will in no way eliminate the need for additional upstream surface storage.

Water Use Efficiency Program

As with the water transfer program, I support all reasonable efforts to improve the efficient use of water, but this will not eliminate the need for the additional storage.

Ecosystem Restoration Program

I have no problem with realistic attempts to restore some of the adversely affected ecosystems. But I emphasize *realistic* and do not agree that there is a reasonable balance in the program when both the First Stage funds and philosophical opinions far outweigh the well established need for upstream storage and the Isolated Facility. Using ERP to hold conveyance and storage hostage is unsupportable and is based on false premises and junk science.

Water Quality Program

The best way to assure two-thirds of the State's population has high quality water is to bypass the Delta. The East Bay and the City of San Francisco are enjoying the benefits of that principle, and rightfully so. All other upstream actions that may realistically and economically improve water quality should be part of the program.

Long-Term Levee Protection Plan

Since I do not have much faith in the ability to save all the Delta islands, I believe it would be prudent to have a clearly thought out contingency plan (not flood damage management). We have historically spent too much money on emergency restoration, and an option to dedicate the new pond to fish, ducks, or other critters ought to be formulated and kept on the shelf for consideration in the event of a levee failure. And, again, both upstream storage and the Isolated Facility should be a part of the plan to accommodate the emergency flushing flows that in all probability will be needed and to assure that some of the export water during the critical period after a levee failure can be of high quality.

The inevitable levee failures will cause a very large influx of saltwater from the Bay that will result in emergency withdrawals from upstream storage. The report implies that since water is in storage it can be drawn on. But, in fact, any unplanned additional withdrawal inevitably results in a deficiency elsewhere. There is no reliability in this assumption and is just another way to break the already overdrawn bank.

Summary

California's economic sustainability is seriously threatened by the current unreliability of it's water supply. Our water programs that helped make this state what it is today are in a sad state of regression. Thirty years of no new projects and another 30 years for a development period that the report proposes is a mockery to the planning effort of our great leaders of the past. That is not to say that the mitigation of much of the adverse environmental damage resulting from the earlier developments should not proceed in a timely manner.

The "conflicts" in the report are, in reality, the water shortages that are creating adverse impacts to both the state's economy and to much of the ecosystem too. There is a lot of

developable water in the Sacramento River Basin. If trade-offs are placed in their proper perspective relating to potential new storage, the conflicts can be realistically addressed and reduced. The additional water required for the ERP and to meet current deficiencies is far greater than the savings the report alleges can be made available by all the conservation and related actions. It is time to realistically face the facts, reduce the philosophical hyperbole, and get on with those actions that can effectively mitigate the well understood ecosystem concerns and at the same time improve our water supply reliability and quality.

Sincerely,

Joseph E Patten