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A CITIZEN'S COMMENTS ON THE CALFED PROGRAM

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Program Manager Martin and CalFed Representatives,

The stated Primary Objectives of the CalFed Program are to enhance ecosystem quality, to better match water supply and demands, to provide good water quality, and to reduce functional and structural vulnerability in the Bay/Delta System (Executive Summary, page 4). I do not believe that the currently proposed CalFed Program will attain the Primary Objectives of the Program.

I do not believe the Program will attain its Primary Objectives because the fundamental causes of the problems CalFed has identified in the Bay/Delta System (Program Goals and Objectives, section 2 and Phase II Interim Report, pages 6-7) are not sufficiently addressed. Because I believe the fundamental causes of the problems are not sufficiently addressed, I fear that much effort and money will be expended without resulting in a significant improvement in the Bay/Delta System's condition.

I believe the fundamental causes of the problems in the Bay/Delta System are:

- 1) Too much water is taken from the Bay/Delta water supply at present. Groundwater resources are being depleted, and in-stream flows are insufficient to satisfy the Program's Primary Objectives at current and projected levels of demand. The amount of Bay/Delta water allocated to human uses must be reduced.**
- 2) Human activities on Delta lands, which are the primary causes of present Bay/Delta conditions threatening ecosystem quality, water supply reliability and water quality, are sanctioned and supported. Human activities which have made billions of dollars of Delta property, functions and activities vulnerable to floods are allowed and effectively subsidized by public expenditures.**

**FUNDAMENTAL BAY/DELTA PROBLEM CAUSE #1:
DEMANDS FOR WATER EXCEED WATER SUPPLIES**

I agree with CalFed that there is a mismatch between Bay/Delta System water supplies and demands. I believe too much groundwater is being pumped out to be sustainable, and I believe too much water is being diverted from in-stream flows to result in good water quality and ecosystem quality restoration and maintenance. Present demands upon Bay/Delta water supplies are too great; projected demands upon Bay/ Delta water supplies will be impossible to satisfy.

Since the present set of problems facing the Bay/Delta ecosystem have occurred under present levels of water use for human purposes, since insufficient water flows are one of the factors in many of the Bay/Delta's present problems, and since actions to increase flows by creating additional storage and conveyance facilities before water conservation actions are taken will probably violate CalFed's Solution Principles, it appears appropriate and necessary to reduce the water "take" from the Bay/Delta system.

I think the present situation has proven the futility of trying to solve the Bay/Delta water supply and demand mismatch by only attempting to increase the water supply. I believe attempts to solve this problem by further actions to increase the water supply will inevitably violate the Solution Principles of the CalFed Program. I think the way to attain the Program Objective of sufficient water supplies, while satisfying the Program's Solution Principles, is to manage the demand for water. Agricultural water demands have not yet been adequately managed.

State agriculture uses the majority of the water taken from the Bay/Delta watershed for human purposes (approximately 80%), yet is expected to conserve less than 1% of what it presently takes (Summary of Estimated Agricultural Real Water Savings, page 4-43, Water Use Efficiency Component Technical Appendix). The majority of water quality problems, water supply problems and flood vulnerability problems in the Bay/Delta system are the result of agricultural actions. The expected failure of state agriculture to significantly reduce its real water use is the single greatest obstacle to realizing the Program's Primary Objectives.

Is the reason CalFed does not expect greater levels of agricultural water conservation to result because the present systems of water rights, water allocation policies and water pricing structures are not expected to be changed? Is the reason, as CalFed appears to claim, that agricultural water use efficiencies would have to become so high that no greater real water savings are possible? Or, does the combination of these 2 reasons result in a logic-proof rationalization of the status quo, an attempt by CalFed to avoid politically-charged problems?

Water allocation policies and pricing structures appear to have influenced the CalFed formula for calculating on-farm irrigation efficiency (Water Use Efficiency Component Technical Appendix, page 4-7). According to this formula, the agricultural practice of leaching salt left in the soil by irrigation actually increases the calculated water use efficiency! Rather than considering salt leaching as a possibly necessary but regrettable use of water, an activity which decreases water use efficiency, within the formula salt leaching is considered to be entirely beneficial. So, what does on-farm irrigation efficiency actually refer to?

Perhaps on-farm irrigation efficiency refers to the efficacy of agricultural water use within the legal context of water rights. The doctrine of appropriative rights provides the basic legal framework for water rights. Since according to this doctrine an agricultural water rights holder must use his allocation or lose his right, farming using irrigation methods which use as much water as is available under the allocation could result in a greater efficiency of water use, as long as the ratio of water squandered by over-irrigation to water wasted by salt leaching was optimized.

However, even that much method appears to be speculation. In 1979, the California State Legislature enacted Water Code Section 1011. This legislation, which I believe is still in effect, protects a water rights holder's appropriative rights to the extent of the amount of water not appropriated due to water and land conservation efforts (Water Conservation in California, Department of Water Resources, 1984, page 126, 127). This means that the fear of losing water rights is not a credible reason in explaining why agriculture cannot be expected to use less water. The reason which appears to explain why agriculture won't be using less water is that on-farm irrigation efficiency refers to agricultural productivity per unit of applied water, measured in dollars, and that the CalFed agencies responsible for managing Bay/Delta water supplies have maximum agricultural production as a primary objective of their missions. Therefore, by induction, on-farm irrigation efficiency appears to be a measure of agricultural profitability.

I think it is very revealing that CalFed did not emphasize the provisions of Water Code Section 1010 in the Water Use Efficiency Program Component. I think it is also very revealing that on-farm irrigation efficiency calculations appear to indicate the profitability of water use without reference to the cost of the water used! This implies that water must be cheap in comparison to other expenses for farmers, which indeed it is!

Aquatic life dependent upon the remaining 5% of California's original wetlands presently suffers from insufficient environmental flows, while much of American agriculture requires price-support programs and other subsidies because of overproduction. At the same time, over-consumption is a primary cause of disease in America, and represents a primary threat to public health and the solvency of the medical system. With these ideas in mind, I find CalFed's emphasis on agricultural water use efficiency and cost-effective water conservation measures (Water Use Efficiency Component Technical Appendix, pages 2-5- 2-11), efforts to make a commodity cheap to farmers even cheaper, to be a bit ironic.

I have read CalFed's detailed analyses of ag region water use patterns, water application efficiency considerations, the differences between the various types of water "savings", etc. **After considering the water use efficiency information in the entire set of Program documents, I have concluded that the reason agriculture is not expected to reduce its "take" from the Bay/Delta ecosystem is because the CalFed agencies have decided that agricultural real water savings are not a primary priority.** I have also noted a similar bias towards commercial uses of water in CalFed's analysis of expected reductions in urban per capita water consumption rates. Virtually all urban real water savings, as measured in decreases of gallons per capita per day consumption rates, are expected to come from reductions in indoor residential uses (Water Use Efficiency Component Technical Appendix, section 5).

The bias toward commercial concerns and uses of water to the detriment of watershed ecosystem quality appears central to the policies of the managing agencies of the Central Valley Project (CVP) and the State Water Project (SWP). The central policies of these agencies appear to demand the allocation and distribution of as much water as is available to human uses. So-called "surplus water" is routinely sold at subsidized rates to agricultural (and urban) water users, while watershed ecosystems and wildlife suffer from insufficient in-stream flows. Water is normally sold to agricultural water users from the Projects at rates below the actual average incremental cost to procure, manage and distribute that water. In many cases water is not sold incrementally, and in some cases this limited and precious resource is sold in such a way that the incremental price decreases as the quantity consumed is increased! In almost all cases it has been the natural ecosystems that have gotten the dry end of the ditch. As a consequence the overall quality of Bay/Delta water supplies has also been degraded.

Within this environment of subsidized water over-consumption encouraged by Project policies, water has become an artificially cheap commodity to the agricultural user. This has prevented more physically efficient irrigation techniques than surface gravity methods (like basin, flood, furrow and border-strip, which are used on about 80% of California's irrigated land) from being cost-effective. This has resulted in a situation where even more subsidies are required for the more physically efficient systems to be employed. Just as over-irrigating the fields results in more salt left in the soil, requiring even greater increases in the amount of water needed for leaching to restore the salt balance, the effect of subsidizing the costs of water to agricultural users results in the need for even more agricultural subsidies.

I believe more water must be allocated to environmental uses if the ecosystem and water quality objectives of the CalFed program are to be realized. However, CalFed has already painted itself into a corner by deciding that operational changes in environmental water flows will be achieved through purchases of water from willing sellers rather than by reliance on regulatory mandates (Project Alternatives Technical Appendix). I think regulatory mandates to increase environmental water flows are appropriate, because I think present and planned agricultural assistance and subsidies are sufficient- buying back water while offering incentives to employ more efficient irrigation technology is a double subsidy! If CalFed does not decide to change its decision in regard to mandated changes in environmental flows, I can only hope that enough farmers getting the lower-priced water will ruin their land (through over-irrigation, most likely, as many already have) to result in sufficient supplies of cheap water that could be purchased for environmental flow purposes.

I think that it should be made policy that environmental flow uses be given first priority for any "surplus water" available in the CVP or the SWP Bay/Delta systems. Water rights holders do not have appropriative rights to Project surplus water. The water exists as a public resource in the public domain, acquired and transported by public facilities built, maintained and managed by public expenditures. I believe, as CalFed does, that it is in the public interest to accomplish ecosystem restoration and improvements in water quality in the Bay/Delta region. The public has a need for ecosystem quality and water quality. To satisfy those needs, sufficient environmental flows are required. Since the water supply needs of water rights holders are already represented by their water rights, it seems reasonable that public ecosystem quality and water quality needs should be represented by having environmental flow purposes be given first priority to surplus water.

If any additional water from the Bay/Delta system is to go to urban uses, it should be obtained through water transfers from agricultural users or other urban users. In all cases, the amount of water taken from the Bay/Delta region must be reduced to the level where supply sustainability, ecosystem quality and water quality are assured.

To summarize:

- 1) A fundamental cause of present problems in the Bay/Delta system is that too much water is being taken from the Bay/Delta system for human activities, which has resulted in ecological and water quality problems. Current practices to satisfy the demand for Bay/Delta water are not sustainable; projected future demands on the Bay/Delta system will be impossible to satisfy without catastrophic ecosystem and water quality degradation.
- 2) The primary cause of the excessive demand upon the Bay/Delta system water supplies is the compulsive physical inefficiency of water use by agriculture. This inefficiency was previously compelled by the legalities of water rights, but is now primarily the result of the policies of the agencies responsible for managing the water supplies of the CVP and the SWP.
- 3) The best way to correct this situation would be to enact regulatory mandates which would reduce the amount of water allocated to agricultural uses from the Bay/Delta system, and to allocate that water taken from agricultural uses to ecosystem quality purposes. Since CalFed seems to be reluctant to promote that method of solving the problem, I think that policy should be created which gives environmental flow purposes priority to any available "surplus water" or lower-priced Project water. I justify this recommendation by arguing that Project water is a public resource, a resource made available primarily by public expenditures, and that public expenditures should be used to obtain public goods. When a choice between 2 incompatible public goods must be made, the greater or more transcendent public good should be chosen. In this case, I believe the greater public good is to save and restore the ecosystem quality and water quality of the Bay/Delta region.

FUNDAMENTAL BAY/DELTA PROBLEM CAUSE #2:
ACTIVITIES WHICH HAVE CAUSED PROBLEMS STILL CONTINUE.

Most of the Sacramento River/San Joaquin River Delta was drained for agriculture in the late 1800s and the early 1900s. Since then, public agencies working with public funds have spent many millions of dollars to maintain and improve much of the 1,100 miles of levees in the Delta Region. Much of the work was done to facilitate agriculture in the Delta. Unfortunately, one effect of employing the Delta soils for farming was to create soil subsidence. Soil subsidence is the loss of soil by oxidation, to which the peat soils of the Delta are especially susceptible.

Subsidence of the soils of Delta islands poses a tremendous problem to the realization of the Primary Objectives of the CalFed Program. Island subsidence causes water quality problems and puts ecosystem restoration efforts and the reliability of Delta water supplies at risk. The primary reason that these islands are subject to subsidence is that their soil has been dried out, so that it could be used for human purposes, primarily agriculture. According to CalFed, the only thing which has been shown to stop and reverse subsidence is permanent shallow flooding (Delta Levee System Integrity Program Technical Appendix, pages D-18, 19). This means that for subsidence to stop on the Delta islands, present human uses of the islands have to be discontinued. If the present uses continue, subsidence will continue, which will continue to create water quality problems, and which will create ever greater dangers of catastrophic flooding.

Presently, the policies of many public agencies support and encourage the use of Delta islands for agriculture, even though the continued use of that land for those purposes contributes to problems which these and other public agencies work to alleviate! The result is that these public efforts have been contradictory, making public policy regarding the issue of Delta island land use self-contradicting. Much money has been spent, few problems have been solved.

My concern is that the 2 billion dollar Levee System Integrity program will be used to maintain and enhance levees protecting Delta lands which are not worth the costs of the levees to protect! **Since it is the results of the uses that the land supports that determines its value, it is a bad idea to build and enhance levees to protect Delta activities that cannot generate enough positive value to justify the costs of the levees. This means is that even if a use of Delta land generates more revenue than would be required for the levees protecting the land, it may not be worth protecting, if it creates additional risks to Delta functions.**

According to CalFed, over the last 100 years the Delta island surfaces have sank from 1 to at least 16 feet because of subsidence (Levee System Integrity Program Technical Appendix, page D-1). The greater the difference between island surfaces and sea level, the higher and wider levees must be built to protect that land, and the more vulnerable and expensive the levee system becomes. Because of subsidence, the difference between island surfaces and sea level will inexorably increase, resulting in ever increasing levee system costs and Delta system vulnerability. Obviously, this situation is not sustainable.

CalFed has commented on the issue of levee protection for sub-marginal land. " A remaining issue with respect to the levee program relates to the fact that the cost of levee restoration in much of the Delta exceeds the value of the underlying land and its ability to generate revenue, and following the principle of 'beneficiaries pay', the costs imposed on landowners could be substantial. This raises questions about the willingness and ability to pay for Delta landowners, as well as the economic justification for the expenditures." (Implementation Strategy Technical Appendix, page 30).

I do not believe Delta activities which are sub-marginal, unsustainable and which will inevitably generate ever-increasing public costs and dangers to the Bay/Delta system should be subsidized by the CalFed Program! If Delta landowners are unwilling to pay their share for the levees required by the CalFed program, then that land should be legally retired and subjected to shallow flooding to restore the land's soil. This will provide wildlife habitat, will reduce water quality problems caused by subsidence, and will eventually reduce the vulnerability of Delta functions.

It appears to me that the critical question is: what is fair for a Delta landowner to pay to receive the benefits of publicly funded levee works? **Since allowing present uses of land subject to subsidence to continue will result in ever greater public costs and potential liabilities in the future, according to CalFed's financial principle of benefits-based allocation of costs (Implementation Strategy Technical Appendix, page 5-15) those landowners should pay at a rate which includes the expected cost and potential liability increases through the duration of the CalFed Program (30 years).**

I think there is a much greater public need for good quality Delta water, a restored Bay/Delta ecosystem and the reliability of Delta water supplies than for farming on Delta islands. I think that if the Delta landowners are unwilling to pay for the majority (>50%) of the levee costs (where applicable), then the land should be condemned.

I have an additional concern related to the PL-84 levee standard. I am concerned that CalFed could chose to upgrade the Delta levees to this standard, avoid making responsible Delta land-use decisions, and effectively create disasters which would drain federal funds for the sake of our irresponsibility. I urge CalFed to think like tax-paying citizens and to act to avoid the waste of any public money, state or federal.

To summarize:

- 1) Present public policies, which attempt to maintain and enhance Delta water quality and to safeguard the reliability of Delta water supplies while facilitating agriculture on flood-vulnerable Delta lands, are self-contradicting.
- 2) These policies are self-contradicting because the continued use of Delta islands and lowlands for agriculture will inevitably result in the continued subsidence of those lands. Subsidence of the peat soils of those lands is a primary factor in Delta region water quality and flood vulnerability problems.
- 3) The central questions of Delta region land use relevant to the CalFed Program are whether present activities which result in soil subsidence should be allowed to continue, and if allowed to continue, what part of the costs of the Levee System Integrity Component should be paid for by the owners of that land.
- 4) I believe that if Delta region land activities which result in water quality and Delta function vulnerability problems are allowed to continue, the owners of the land employed in such activities should be required to pay for the actual and expected costs to the public resulting from those activities. More plainly, the CalFed program should not result in the effective subsidization of continued agricultural operations in the Delta.
- 5) The primary reason that these operations should not be directly or indirectly subsidized is that it is more in the public interest to have good Delta water quality, Bay/Delta ecosystem restoration and Bay/Delta system water supply reliability than to support activities which generate greater public costs and potential liabilities than revenues and public goods.
- 6) If Delta landowners are not willing to pay for both the benefits they receive from CalFed Program actions and for the additional costs their land use decisions impose upon the public, those lands should be condemned, be retired from uses which create subsidence, and be subjected to shallow flooding to stop and reverse the subsidence.

FINAL THOUGHTS

More than 95% of the wetlands areas of California have already been lost. Wetlands are critical to the maintenance of the ecological health of the natural environment. The Bay/Delta estuary is arguably the most important wetland area on the west coast of North America. There are substitutes for present Delta land uses and Bay/Delta agricultural practices, but there are no substitutes for the Bay/Delta ecosystem. We need an ecologically healthy Delta more than Delta agriculture, and we need an ecologically healthy Bay/Delta watershed more than increased Bay/Delta region agricultural profits. There are many possible human solutions to the human problems relevant to the CalFed Program. In contrast, the natural environment cannot be replaced, and once sufficiently degraded, can never be fully restored.

I ask CalFed to value the needs and aspirations of future Americans, and the environmental needs of all future life on planet Earth, in its Program decisions.

CalFed Program
Comments

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