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PACIFIC
TECHNOLOGY
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Strategies For A Sustainable Future

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22 September 1999

CALFED Bay-Delta Program
1416 Ninth Street, #1155
Sacramento, CA 95814

Re: Comments on Draft Programmatic EIS/R

Dear Sir/Madam:

The CALFED Program represents a significant advance in California water planning, given the great effort to develop an integrated package of Program Elements, each of which represents a specific water management strategy. I understand that this work probably pushes hard against the boundary of what is politically feasible at this time.

The principal comment I wish to make is that regardless of cultural constraints, at some point human demands must come into balance with natural limits. If we are to achieve this balance through institutional forethought and management, it is imperative that the total universe of constraints that we face are considered, for they are in play whether or not we choose to acknowledge them. I see the CALFED program as a "best effort" response to one of the early warning signs of human culture hitting the wall of resource constraints. Are we on the right course? Is the effort sufficient? Notwithstanding the limitations of NEPA/CEQA, these are the questions that must be asked as we begin to hit ecological resource limits.

This big-picture perspective, coupled with ecological accounting work done by persons such as Mathis Wackernagel, Ph.D.¹, makes it clear that industrial societies such as ours in California must aim for an order-of-magnitude reduction of natural resource throughput across the board if we are to achieve sustainability. This has two implications for CALFED: (1) water efficiency is probably the most important strategy available, and (2) water recycling, although extremely attractive when viewed solely from a water balance perspective, will prove harmful when it causes a

¹ Director of the Indicators Program at Redefining Progress, San Francisco (www.rprogress.org). Wackernagel, co-creator of Ecological Footprint Analysis, shows the average American requires 27 acres of nature to service his or her needs, nearly seven times greater than a fair share of global resources (given current population). Furthermore, total human consumption requires more of nature than is available on an indefinite basis. Our species has already overshot the carrying capacity of the earth.



net increase (or prevents a decrease) in other resource flows (energy, chemicals, etc.).

The currently available water efficiency practices are not designed from the perspective of achieving ecological sustainability, and thereby leave room for improvement. Accordingly, CALFED should encourage and fund creative projects designed to significantly advance the performance of resource efficiency programs. Such projects will undoubtedly find ways to encompass a much broader sweep of benefits and incentives than used today, so they may justify deeper investments, and incite the will to make them.

Water recycling is gathering much momentum, but its darker side is not revealed by the CALFED EIS/R. To the extent expensive water recycling systems depend upon turf (unnecessary when native landscaping may be substituted), and industrial process water demands for a market, for example, water recycling probably represents one step forward and two back. The problem arrives when recycled water is used to perpetuate unnecessary uses. This is particularly harmful in economic and ecological terms when recycled water is delivered to industrial facilities that haven't first implemented less costly efficiency improvements. My personal experience is that enormous water savings, often with negative cost, are possible at industrial facilities because of accompanying reductions in chemical and energy use. The latter are far more valuable to industry than are water and wastewater savings. When recycled water is promoted ahead of efficiency, these benefits are lost. Worse yet, limited dollars are invested in infrastructure that is aligned contrary to the correct ecological direction.

Having said the above, it is appreciated that CALFED provides Water Use Efficiency/Recycling with the largest budget for any Program Area in its Estimated Stage 1 Cost budget (39% of a total \$5.2 billion budget). This mighty budget needs to be intelligently applied, however.

Thank you for the opportunity to comment.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Edwin B. Orrett', with a long horizontal line extending to the right.

Edwin B. Orrett, M.S., P.E.