

MEMORANDUM

DATE: April 25, 2002

TO: Bay-Delta Public Advisory Committee (BDPAC)

FROM: Greg Gartrell, Co-chair Drinking Water Subcommittee

SUBJECT: **Agenda Item on Water quality project priority: Advanced treatment studies**

INTRODUCTION

CALFED Agencies have adopted a general target of continuously improving Delta water quality for all uses, including in-Delta environmental and agricultural uses. For the drinking water quality program, CALFED Agencies have developed a specific goal based upon extensive stakeholder and agency involvement. CALFED Agencies' target for providing safe, reliable, and affordable drinking water in a cost-effective way, is to achieve either: (a) average concentrations at Clifton Court Forebay and other southern and central Delta drinking water intakes of 50 µg/L bromide and 3.0 mg/L total organic carbon, or (b) an equivalent level of public health protection (ELPHP) using a cost-effective combination of alternative source waters, source control and treatment technologies.

CALFED Agencies will aggressively pursue a mix of strategies in order to improve in-Delta water quality. Program actions to address the drinking water quality concerns of the more than 22 million Californians who rely on Delta water fall into four broad categories. These actions will:

- Enable users to capture higher quality Delta water for drinking water purposes.
- Reduce contaminants and salinity that impair Delta water quality.
- Evaluate alternative approaches to drinking water treatment to address growing concerns over disinfection byproducts and salinity.
- Enable voluntary exchanges or purchases of high quality source waters for drinking water uses.

None of these actions, by itself, can assure adequate supplies of good quality drinking water for California. They must all be pursued, in conjunction with other CALFED actions such as conveyance and storage improvements, to generate significant improvements in drinking water at the tap.

Fundamental to the above CALFED Drinking Water Quality Program as described above (which is quoted from the ROD) is a requirement for adequate information on advanced treatment methods that will: 1) directly address the elements in the third bullet, 2) allow a Clean Water Act 404 analysis of the "Least environmentally damaging practicable alternative" (LEDPA) so that decisions can be made on CALFED projects, including projects falling under the first and fourth bullets, and 3) allow the determination of the ELPHP. Indeed, the strategy diagram for ELPHP (attached) shows all elements described in the bullets above flowing to treatment. Consequently, all of the Stage 1 CALFED Drinking Water Quality Program is now or will become dependent upon the determination of the capabilities of advanced treatment of Delta water.

RECOMMENDATION TO THE BDPAC

That the BDPAC recommend that the CALFED Program immediately place a high priority on funding and implementing pilot project(s) on advanced treatment processes for drinking water to ensure the necessary information is available as soon as possible that will:

- 1) ensure that the LEDPA analyses and permitting for CALFED storage, conveyance and other projects can be completed on schedule
- 2) produce data that will aid the characterization of the Equivalent Level of Public Health Protection for agencies dependent upon Delta supplies for drinking water
- 3) aid CALFED in meeting its overall drinking water quality goals.

DISCUSSION

The advanced treatment pilot plant studies that are required should adequately address the following issues:

- 1) The focus should be on treating Delta water or Delta water mixed with other sources.
- 2) The studies should recognize the large variability of water quality in the Delta, and the variability extends over space and time (water quality varies seasonally, and by location; water quality in the North Bay Aqueduct, the Contra Costa Canal, the State and Federal Aqueducts all vary significantly).
- 3) The studies should deal with the different treatment strategies that different agencies apply to their local situations (one size does not fit all in treatment).
- 4) The studies must build on current information and actual treatment processes, and should be coordinated with the planning needs of the participating agencies in order to provide the greatest research benefit.
- 5) The studies should be immediately applicable, taking advantage of existing information, science and technology (for example, membranes, UV, ozone and other disinfectants).
- 6) The studies should be designed to ensure that all necessary information is available for CALFED decisions regarding storage and conveyance or other projects requiring a LEDPA analysis, or for decisions on programs that affect Delta water quality, including ecosystem restoration projects or for decisions on the appropriate levels of demand management.
- 7) The studies must be consistent with the CALFED Drinking Water Quality Goals and the ROD.
- 8) The studies must provide information that will help in the determination of the ELPHP.
- 9) The studies must be peer reviewed , in coordination with the Science Program.
- 10) The Drinking Water Subcommittee should appoint a technical committee to track and report to the subcommittee on the progress of the studies and to provide feedback to the studies.
- 11) The studies should focus on critical information gaps, including use of membranes, Ultra-Violet (UV) light disinfection, multiple disinfectants and other advanced treatment methods, how these methods can be used with existing treatment processes.
- 12) The studies should deal with: disinfection improvements; removal of pathogens; reductions to DBPs and other constituents; taste and odor control; and, nitrification control and other distribution system improvements.

FUNDING

CALFED should consider several sources of funding for these studies. The Water Quality Program does not necessarily have to fund these studies entirely because the information required is also necessary for permitting in some other areas (for example, projects that require 404 permits and that

have a water quality impact or purpose would need this information, including some projects falling under storage, conveyance, ecosystem restoration, and possibly others). Cross-cut funding can be made available from these programs. Since the ultimate beneficiaries may not be known until later dates when decisions are made on projects, it might be appropriate to use cost sharing from these program areas until a determination is made of beneficiaries, consistent with the policy developed for storage ("Generally, the planning and feasibility stages of surface storage projects will be pursued with State and Federal public funding. If a project is determined to be feasible, a cost allocation plan will be prepared as part of the design phase, preliminary cost allocations secured before construction begins, and final cost allocation agreements implemented prior to project completion.")

SCHEDULE

An advanced treatment pilot plant project should be funded and implemented as soon as possible both because of the need for better information for the Drinking Water Quality Program and the large number of projects that either will require or may require information for completion of the permitting processes in the near future. The schedules for some CALFED projects that may need information from the advanced treatment research studies are:

- In-Delta storage End of 2002 (complete EIR)
- Bay Area Water Quality & Water Supply Reliability Program Complete environmental studies by 2003
- Friant-MWD Water Quality Exchanges Complete environmental review by end of 2004
- Los Vaqueros Reservoir Expansion Studies Complete environmental studies by 2003
- San Joaquin Storage Complete environmental review by mid-2006

- San Luis Low-Point Improvement Project Complete studies by 2003
- Delta Cross Channel gate studies Complete studies by 2003
- Through Delta Facility (4,000 cfs screened intake) Complete studies by 2003
- 8,500 cfs increase to Banks Pumping Plant Complete EIR by end of 2002

Other surface or groundwater storage projects, depending on impacts or purposes, may also require this information.

In addition, numerous ecosystem restoration projects can affect water quality (salinity) through alteration of tidal flows in the Delta or changes in organic loading. These projects will affect water quality in the Delta and which in turn affects the ELPHP and the ability of CALFED to meet its goal of continuous improvement in Delta water quality. This creates a critical linkage between the ecosystem restoration program and the water quality improvement goals. Likewise, the use of water prescribed under the Environmental Water Account, the CVPIA b(1), b(2) and b(3) programs, the ERP water purchases and the biological opinions can all affect water quality in the Delta, and as such, are all critically linked to the water quality improvement goals.

Considering all these factors, it is vital to implement studies as soon as possible and CALFED should give them a high priority.

cc: John Andrew

Patrick Wright