

**Issue Paper**  
**Water Use Efficiency**



**Memorandum**

Date: October 10, 1996  
 To: Bay-Delta Advisory Council  
 From: Lester A. Snow   
 Executive Director  
 Subject: Role and Scope of Work for the Water Use Efficiency Workgroup

**Issue Summary**

The Water Use Efficiency Workgroup was established as a subcommittee of BDAC to address policy issues and provide recommendations for use in development of the Water Use Efficiency component of the CALFED alternatives. Discussion within the work group has encompassed two perspectives of efficiency: 1) measures to improve efficiency in the traditional sense (conservation and recycling), and 2) measures that address water management, both at the local level and statewide. CALFED views water use efficiency in a broad context that incorporates both of these perspectives.

The traditional view of water use efficiency, particularly in agriculture, is defined in terms of a ratio of water consumed to water applied. CALFED has used the term "efficiency" in a much broader sense, generally to mean the level of utility obtained from a unit of water. Using this broader interpretation, an increase in efficiency of use may contribute to meeting CALFED's water reliability objectives or it may contribute to meeting the water quality and ecosystem restoration objectives.

CALFED believes that the Water Use Efficiency Work Group is an appropriate forum for discussion of broadly-defined efficiency issues. Certainly, other forums will be involved in many of the same issues. For example, the Water Use Efficiency Work Group may examine issues related to conditions for implementation of water transfers and impacts that result from transfers, but would not be the appropriate forum to examine issues related to conveyance capacity and operational criteria. In the same manner, the Work Group might examine the use of incentives for water users to change water management in order to

**CALFED Agencies**

**California**

The Resources Agency  
 Department of Fish and Game  
 Department of Water Resources  
 California Environmental Protection Agency  
 State Water Resources Control Board

**Federal**

Environmental Protection Agency  
 Department of the Interior  
 Fish and Wildlife Service  
 Bureau of Reclamation  
 Department of Commerce  
 National Marine Fisheries Service

improve water quality, but CALFED technical teams would identify water quality parameters of concern.

### **BDAC Considerations**

Conservation and recycling programs are useful tools for achieving improvements in water supply reliability. However, there are other potentially useful water management tools, such as transfers, conjunctive use programs, or measures that address improvements in water quality or flow timing. These additional tools can result in achieving a higher level of utility from a unit of water by producing water quality or ecosystem benefits, not just improvements in water supply reliability.

- **Does BDAC have policy advice to offer CALFED regarding a broad view of water use efficiency to increase the utility of a unit of water and achieve multiple benefits?**
- **Is it appropriate for BDAC to discuss this broad view of water use efficiency in the focused policy forum of the Water Use Efficiency Work Group?**
- **Are there other policy considerations regarding water use efficiency that BDAC can identify?**

### **Background**

The CALFED Bay-Delta Program will develop a long-term comprehensive plan to restore ecological health and improve water management for beneficial uses of the Bay-Delta system. Three alternatives to accomplish this mission will be refined and analyzed during Phase II of the Program. These alternatives will share a “common program” of measures to ensure that California’s water supplies are used efficiently.

Many of the measures that have been identified by CALFED staff and discussed in the Work Group are not efficiency or conservation tools in the traditional sense. They are instead tools which also address local water management from a broader perspective. These water management tools have been included because they offer ways of achieving Program objectives in other CALFED resource areas such as water quality and ecosystem restoration. These tools, whether implemented at a local or district level or at the statewide level, offer ways to get greater levels of utility from a unit of water.

The nature of water use efficiency and its benefits can vary according to the user’s perspective. This is particularly true in agriculture. In the agricultural sector the benefits from improvements in efficiency might differ from the perspective of a field, farm, irrigation district, or basin. If the perspective is enlarged to include environmental and water quality benefits as well as water supply benefits, then a different set of measures might be viewed as

most efficient. For a program like CALFED, which seeks to improve water supply reliability, protect water quality, and improve ecosystem health, a water use efficiency program that recognizes the linkages among these resource areas may yield the greatest benefits and thus the greatest water use efficiency.

Examples of achieving the greatest benefit from each unit of water might include the following:

- increase agricultural production from a unit of water
- protect water quality
- increase environmental benefits from water management
- reduce water diversions during critical periods
- maximize reuse of water supplies
- improve timing of diversions
- increase multi-year water management (e.g. conjunctive use)