

Agricultural Water Use Efficiency Strategy

Agricultural Water Use Efficiency (WUE), as described in the California Water Plan Update 2009, is a resource management strategy that involves improvements in technologies and management of agricultural water that result in water supply, water quality, environmental benefits, and energy efficiency, while maintaining or improving crop yield. The Water Plan Volume 2 chapter on Agricultural WUE discusses efficiency improvements such as on-farm irrigation equipment, crop and farm water management, and water supplier distribution systems.

The Water Plan's analysis of Agricultural WUE poses certain assumptions in efficiency improvements and expenditures to estimate net water that can be saved in the agricultural setting. It should be recognized that saved or conserved water does not necessarily constitute new water for use for other purposes. Saved water constitutes new water supply only if it was prevented from irrecoverable flows to salt sinks, inaccessible or degraded aquifers, or the atmosphere. Saving water from irrecoverable flows does not eliminate existing use, therefore it may be used for other purposes.

The Water Plan's analysis also recognizes applied water and incorporates the potential amount of water flows resulting from implementation of on-farm and district-level efficiency measures that is being used and reused many times over. This amount of water is several times larger than that of saved water because water is recovered many times over as it flows from one agricultural water user to another through surface water flows or through groundwater recharge and pumping. This water, which constitutes a reduction in applied water, cannot be used for other purposes without elimination of existing use (and reuse), and therefore, cannot be considered as new or additional water supply. However, it is also recognized that this recovered water, while it provides no water supply benefits, may provide many other benefits such as water quality, flow and timing, and environmental benefits such as wetlands, and wildlife habitats, and energy benefits.

Water use efficiency estimates of potential savings analysis does not consider other Resource Management Strategies that, if implemented, may free up water for other uses.

These specific resource management strategies include

1. Land retirement
2. Crop idling, and
3. Crop shifting

These Resource Management Strategies are considered separately from Agricultural WUE and dealt with in the California Water Plan Update (2009) separately.