Farm-Level Feasibility of New Forms of Water Transfer
– Draft Report –

This is interpretation by John Wiener, based on literature reviews (with thanks to Dr. Waskom, CO WRRI) and an expert workshop with help from the Central Plains Irrigation Association. **No huge obstacles appear** to block using the new "water bank", long-term rotating crop management, and long-term interruptible supply contract forms of water transfer. **NOTE:** this view is not necessarily that held by anyone else, including the workshop participants or the Technical Roundtable or others associated with the SWSI. As of January 2009, Colorado State University and the USDA Agricultural Research Service have experiments in progress testing impacts and costs of fallowing, and related farm management questions.

1. **More options** are wanted for agricultural water management, especially to allow adaptation to conditions. The full set of options may be more attractive than only one or two options for water transfer or climate-responsive management. There was strong agreement that irrigators might want to use water banks, and long-term contracts as well as juggling other programs such as CRP and private deals such as hunting access or birding.

2. **Markets** are wanted, and should be allowed – the problem is making markets work better. **Fractional transfers** of water are desirable, given new approaches such as deficit irrigation and increasingly technical irrigation scheduling and decision support, as well as pre-season information from climate forecasting. The problem of **no-tech verification** of changes in water use ("I want to see only brown out there!") versus all these new approaches hinders both "salvage" and conservation.

3. **Revegetation** to any standards is a challenge; long-irrigated lands are changed such that active management may be needed for many years. History of land use is important, especially long irrigation use. Carbon and nitrogen levels are problems – the C is too low for most "natives", and the too-high N benefits invasives and weeds. Costs and time needed for revegetation are not well known. Conflicting information about costs has not been substantiated and has been said to be confidential. How much land management activity do cities want to undertake, and are commitments open-ended? Claims of success, costs, and time involved vary and are anecdotal as far as has been seen. Legal standards may not be the same as those others would prefer. Specific goals for particular parcels might not be best determined by convenience of showing non-irrigation.

4. **Suspending irrigation is not likely to be cost-free**; planned suspensions for rotating fallow management should involve **design of crop rotations** to make the non-irrigated conditions as benign and productive as possible. Interruptible supply may be best with some water reserved to help establish a good "fallowing" crop.

5. Cumulative impact issues, safety factors, and ditch management issues seem to indicate that **relatively larger transferor organizations** may be safer than smaller transferors.

6. **Thresholds and cumulative impacts** are a potential problem. How a TMDL would work across state lines is unknown. The inequitable burden of abrupt imposition of ESA and other limits is a problem we would like to avoid.

7. **Re-organizing formerly irrigated** farms for dry-land operations is apparently what is expected after water sales. Is there BMP guidance? Another problem concerns scale: should we expect 3 irrigated farms to become 1 dry one, losing 2 families? Evaluating opportunities for new kinds of farming take a great deal of **place-specific information**, such as soil conditions and local marketing. What are the roles of extension and private consultants?

8. **Erosion problems** with discontinuing irrigation may be more difficult – see Soil and Water Conservation Society, 2003, Conservation Implications of Climate Change: Soil Erosion and Runoff from Cropland (on SWCS website). Implication is that additional steps for erosion control may be needed, but perhaps reduced tillage and stubble practices for moisture conservation would handle this if included in new rotation or management plans.

9. **Crop insurance** and the workings of "prevented planting" rules must be clearly related to the new leasing plans. There is no reason to be unclear about fraud prevention. It is not clear (yet) how treating water as an asset interacts with ag. programs in cases such as a forecast of a wet year, leading interruptible supply partner to "call" for the water for use in drought recovery or storage. The farmer would be expected to switch to a dry crop for which she expects some return; can it be insured?

10. **Equipment choices** might be affected by use of the long-term contracts. Are pivot systems more flexible to new cropping or non-use conditions? It was not clear that one would ideally take the new capital and install drip, but the workshop did not look into equipment issues very far. Re-sale of equipment may be a factor.

11. Would water prices be affected by use of the long-term contracts? **Value of water rights**? It has become clear that people are **not used to thinking of designing all the terms of a deal, rather than "take it or not."** And that in turn raises the issue of how much big-scale organization of transferors might matter, and the set of issues of individual shareholder versus rest of ditch company, perhaps on a larger scale. Larger volumes and more range of seniority allows different values for different sets of water on offer, with different levels of security.