

## **"Legal Hazards to Efficient Water Allocation"**

Chuck Howe Plenary Talk

### Extended Abstract

Laws change slowly in response to changing social and economic values. In the eastern U.S., the need to change from the English Common Law riparian doctrine becomes more obvious as the supply/demand relationship tightens and as climate forecasts become more daunting.

In the western states, appropriations doctrine has served us well for over 100 years, defining water ownership while allowing water to move to emerging, higher-valued uses. Nonetheless, western water laws are changing, partly under pressure of federal laws but also because of increased demand pressures and recognition of environmental values. However, even with contemporary adaptations, priority doctrine can conflict with the most economic use of water resources, i.e. in conflict with "economic efficiency".

A possible case in point is the surface water-groundwater conflict in the South Platte Basin of Colorado where irrigation pumping has been sharply curtailed to protect senior surface rights. This curtailment is in keeping with water law since the wells are quite junior but these measures have caused great distress in the affected farm communities, reaching well beyond the farms themselves. Whatever the comparison of seniors' gains to farm losses, the curtailment is denying use of the aquifer as efficient storage and drought insurance to the basin's water system. Further, all upstream parties junior to the senior surface user have had to stop diverting during the call, regardless of their losses. Among these parties in the South Platte case are several towns that place high value on the water they would otherwise be using or storing. Water left in the stream at these upstream locations may not contribute much to downstream flows ("futile calls") because of transit losses. Thus there is a high likelihood that priority calls will result in economic losses to the river as a whole.

In the past, "gentlemen's agreements" delayed calls by the downstream reservoirs when there was still a good chance that the reservoirs might fill later in the spring. The acquisition of augmentation water for the wells that might prevent the call-out has been complicated by the increased frequency of calls due to drought and the tightening supply-demand situation. Market prices for senior water rights or leases have increased beyond the ability of some irrigators to pay for augmentation water.

In situations like this, there certainly are water market forces that, in the long term, might help moderate such conflicts. If the wells are more profitable than the surface uses that placed the call, efficient water markets would motivate payment to the seniors for subordination of their priorities. However, water markets, in general, are characterized by high transaction costs and selective transactions like this are complicated by the existence of many affected parties affected by the call.

Again, the conflict with groundwater affects the ability of the integrated system to make appropriate use of the aquifer as the most efficient reservoir storage and distributary. The aquifer provides drought insurance when appropriately integrated into basin operations. Unfortunately, it is just during droughts that wells are likely to be called out.

Other types of water law-economic efficiency conflicts can be cited, including treatment of the "no injury" requirement, the special treatment of "imported waters", interpretations of "beneficial use" that preclude holding water for longer term purposes ( the

bugaboo of "speculation"), the creation of conditional water rights and prohibitions of out-of-basin transfers.

A situation similar to the South Platte exists on the Snake River, Idaho but a major planning effort and the use of a wider range of water market arrangements (water banks, rental pools, mitigation plans, subordination arrangements, recharge projects, seepage loss credits, & water rights retirements) seems to be alleviating the situation. Gary Johnson and Donna Cosgrove ("Aquifer Management Zones...", JWRP&M ASCE, Mar/Apr 2005) have argued that overly strict interpretation of the "no injury" rule for groundwater permit transfers in Idaho have discouraged beneficial market activity. Haddad has argued that environmental constraints on water rights transfers in California have unduly restricted water market activity (Haddad, 2000, *Rivers of Gold: Designing Markets to Allocate Water in California*, Island press, 2000).

A longer time perspective may suggest that strict enforcement of the law promotes longer term economic efficiency even though it may induce short term losses (as above). Well defined and enforced property rights are the foundation for long term contracts and investments. If we were starting anew in the design of western water law, it might be possible to avoid this type of conflict between short term and long term efficiency. A system of tradable, divisible, proportional permits might prove desirable, but such a change is no more possible in the western United States than the acceptance of priority doctrine is in the eastern states. There is too much history to allow radical change.

Are there other opportunities to improve the economic efficiency of water administration within the priority doctrine? The enhancement of the role of water markets would be a step in the right direction if it could be accomplished through the reduction of transaction costs and not at the cost of needed public oversight of water transfers. Markets always need some degree of social oversight to allow for non-market values and equity concerns. Frequently there is too much oversight, leading to some of the inefficiencies cited earlier.

The critical nature of transaction costs has been cited in a huge literature. Any steps to reduce transaction costs without foregoing needed oversight will stimulate beneficial water market activity. In the Northern Colorado Water Conservancy District, 25% of all permanent share transfers are from one agricultural use to another in contrast to the ag-to-urban pattern in other Colorado water markets. This is attributable in part to very low transaction costs. An excessively long review period for water bank transactions was a major cause of the failure of the Arkansas River Basin Water Bank. Colorado has been shown to have longer review times and more numerous transfer protests than other western states (MacDonnell et al, 1990). Avoiding protests of transfers has been shown to greatly reduce transaction costs (Howe, Boggs and Butler, 1990).

Where does this leave us? The reduction of groundwater irrigated land means the loss of the natural functions of the aquifer including the insurance value of groundwater. Is it possible that cities could buy the land and make use of the abandoned wells? They would be faced with the same augmentation requirements but, since those requirements are usually less than the full pumping volume, there still may be advantages to the cities, especially as drought insurance. If well owner associations can develop reservoir sites for storage of junior rights, the water could be used for augmentation. The system in use in the Purgatoire Water Conservancy District in southeastern Colorado allows priorities to be foregone when there is

sufficient water in the "conservation pool". The users then share the inflow on a pro-rata basis based on acres irrigated or flow rates of the rights. If a user desires a greater flow, they can draw on their share of the stored water. If the water in storage falls to a critical level, diversions revert to priorities. This opens possibilities for well owners who are members of a conservation district.

Speculation was an issue when the western rivers were first tapped for human use: individuals could not be allowed to claim the entire flow for instream or navigation uses. Claims had to be supported by demonstration of a "beneficial use" before water rights were registered. What constitutes "beneficial use" has been difficult to define with clarity. There have been very few cases in which water rights have been forfeited because the water was not being beneficially used in the eyes of water courts. On the other hand, the acquisition of rights for purposes of transferring to new uses has been denied by Colorado courts if a definite buyer has not been contracted. A case in point is that of the High Plains Consortium that purchased farms, options and water rights on the Fort Lyon Canal in Southeastern Colorado with the intent of ultimately transferring water to urban buyers. Purchasers had not been identified but the prospects for a demand for the water on profitable terms seemed a reasonable business decision. Application for changes of use of the water rights was denied by the Division Engineer and sustained by the Colorado Supreme Court for lack of specific buyer.

Speculation in situations like that can be a reflection of superior foresight. After all, the biggest speculators are farmers themselves who hold on to water rights to benefit from rising prices. Cities, too, are allowed to speculate through the holding of conditional water rights.

Thus there appear to be ways through which the economic efficiency of our water use patterns can be substantially improved within the framework of appropriations doctrine and not in its abandonment.

Author Contact Information:  
Chuck Howe  
[Charles.Howe@Colorado.edu](mailto:Charles.Howe@Colorado.edu)