

Water Markets in the Southwest: *Why and Where?*

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Markets for any commodity develop in response to supply and demand, in the absence of physical and regulatory restrictions that prevent free trading of that commodity. In the Southwest (and elsewhere in the world), water has become a commodity particularly in places where the supply is not sufficient to meet all the various demands for it. Over time, markets for water emerge to address the problem of allocating scarce water resources among many competing demands.

Why Have Water Markets Developed in the Southwest?

States in the Southwest have both physical conditions and regulatory structures that foster the development of water markets. Old, non-market ways of allocating water are particularly subject to political influence and tend to favor early users over new demanders, regardless of the value of the water to those users.

Physical Conditions for Markets

The population of the arid Southwest is growing rapidly in both rural and urban areas, creating a high demand for water throughout the region. The current drought prevailing across the

Southwest only exacerbates the water supply issue.

On the supply side, water is available primarily from large rivers such as the Colorado, Rio Grande, Pecos, Sacramento and San Joaquin, and from groundwater basins. The supply is often limited, however: if a river is over-appropriated, very little water may be left to trade once compact delivery requirements are satisfied, increasing the value of the water that is available. In areas where groundwater is abundant and groundwater rights are not regulated, markets will develop more slowly. But most states in the Southwest now recognize that groundwater resources are easily mined and that surface water and groundwater are often hydrologically connected, so water management strategies have been enacted that foster groundwater markets as well.

Finally, in many parts of the Southwest, a physical water transportation network is in place to facilitate the movement of water from areas of supply to areas of demand. In many cases, the network consists of natural water courses, but manmade delivery systems such as acequias and conveyance channels also provide a means of delivery. Furthermore, both natural and manmade storage facilities – in the form of aquifers and reservoirs – are also available.

Regulatory Structure that Favors Markets

Surface water and groundwater in the western United States is not owned but held in trust for the citizens of the country. But the states allow the use of water through assignment of water rights, granted usually to irrigation and conservancy districts. Most western states require water to be put to a beneficial use (the “use it or lose it” doctrine), and rights established in earlier years have priority over later rights in times of drought (the “prior appropriation” doctrine). A water right is created once it is appropriated and put to beneficial use: “first in time, first in right.”

The policies of the states have thus enabled water rights to become property rights, transferable with ownership of the land, yet generally separable from it. Before a water right can be separated from the land and transferred, however, the quantity of the existing right must be clearly defined, usually through the adjudication process. In all western states, rights to divert surface water exist. In some states, especially when surface water and groundwater resources are conjunctive, rights to groundwater are issued, although often with prohibitions on transferring the groundwater outside the geographic basin from which it comes.

Once a water right is determined to be transferable, water markets may emerge. These may be either formal markets, sponsored or

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administered by governments or water authorities, or informal markets in which private owners trade water rights (within a regulatory structure provided by the state). Use of a specific volume of water may also be leased for some period of time. When leasing water, the owner of the right retains the water right, but transfers the use of the water for a period of time, usually one year. The price of a water lease is tied to the price of the underlying water right. Water markets not only allow users to purchase rights from others, but allow water rights to be transferred to centralized districts in order to provide water supplies to large groups of people. The market structure ensures that the price paid for the right is the highest value for the water at the time of purchase, even in cases when municipal water suppliers are purchasing the option of a water supply, as when they purchase rights to offset groundwater pumping or to increase capacity for peak or future demands.

Where Have Water Markets Developed in the Southwest?

Water markets in the Southwest are focused around areas of demand where a physical infrastructure is in place that can facilitate the transfer of water. Initially, most surface water rights were allocated to the agricultural sector, but now most transfers are to municipal and industrial demands. Thus, the most active water markets are located close to urban areas that have an infrastructure that allows transfer and delivery of water from agricultural to nonagricultural users.

The Middle Rio Grande Conservancy District in New Mexico, for example, maintains 800 miles of canals and has a sporadic market for water rights, depending on the supply available. The Colorado Big Thompson (CBT) federal water project provides a maximum annual capacity of 310,000 acre-feet of water for irrigated lands (Howe, 1998). California markets are facilitated by the infrastructure of the Central Valley Project (CVP), which includes more than 35 water districts, and the Imperial Irrigation District (IID), which diverts 2.9 million acre-feet annually from the Colorado River (Wahl, 1989).

Impediments to Southwestern Water Markets

Ownership and quantity of a water right must be established to allow water markets to develop and flourish. Rights cannot be traded in a market unless they have been legally defined. The process of adjudication, in which senior and junior rights are sorted out, assigned, and quantified, is taking decades in Southwest courts. The dearth of records quantifying historic water use contributes significantly to uncertainty surrounding Native American water rights in the Southwest and compounds the difficulties inherent in the overall adjudication process.

Third parties who may be affected by the transfer of water rights must also be considered in market transactions. These third parties may include downstream farmers who are affected by a transfer, endangered species, or recreational users, among others, and in most states these parties have the right to intervene in proposed trades. Institutional administration and regulation is necessary to address the impacts to third parties, and this duty usually falls to a state regulatory agency. In New Mexico, the Office of the

State Engineer keeps the water records and holds hearings regarding third party effects. Colorado's Division of Water Resources manages water allocation, but the water courts keep the records for water rights.

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