

WATER MARKETING IN CALIFORNIA

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ABSTRACT

Few things have been talked about more and done less in California than water marketing. It's interesting that in one of the world's consummate entrepreneurial environments, a commodity as vital as water is so difficult to buy and sell. Why has water marketing become widely used in the rest of the southwestern United States and even in the Midwest and not in California? The answer to that question is complex. The discussion of water marketing will be divided to treat surface and subsurface water separately.

Introduction

To adequately understand the role of water marketing in California's present and future water supply picture, one must first consider the importance of water in the State's history and the role it will play in California's continued economic and population expansion.

California's explosive growth following World War II could not have occurred without the remarkably far-sighted construction of dams, reservoirs and a marvelous aqueduct system to carry water from the Sierra Nevada Mountains, Owens Valley and the Colorado River. All of this remarkable construction was done at considerable cost to the environment and to the goodwill of the people in the areas of the water's origin. Southern California's growing need for water and the conflicting need to protect the Northern California environment remains an emotional and divisive issue.

Current Water Usage

California uses about 34 million acre-feet of water annually. Nearly 85% of that amount is used to irrigate approximately 10 million acres of farmland. Agribusiness contributes \$16 billion annually to California's economy.

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Pressure continues to mount from powerful and sophisticated environmental groups to restrict and reduce export of northern water in order to increase and enhance "in-stream" use of water. Recent high court decisions concerning the public trust doctrine supports more use of water for recreation, habitat, fisheries and other in-stream uses. This constitutes a substantial threat to existing exports and a big problem for future water development.

About 40% of the State's land is underlain with groundwater basins. Useable groundwater in California probably exceeds 400 million acre-feet. However, total annual overdraft of several key basins exceeds 2 million acre-feet and can be much higher in dry years.

Future Water Needs

Between now and 2010, California's population is projected to increase by 25% from 28 million to in excess of 36 million people.

Irrigated lands will probably remain in the 10 million acre range.

Southern California's entitlement to Colorado River water will be reduced by over 600,000 acre-feet/year as Arizona takes its full Central Arizona Project entitlement.

Use of several important groundwater supply sources may be curtailed because of pollution and/or subsidence.

Estimates of the additional water needed annually by the year 2010 range from a minimum of 1.4 million acre-feet to 3 million acre-feet or more. Even the minimum figure assumes the construction of several expensive and environmentally sensitive storage and conveyance projects by the State. New source development costs are soaring. Other important elements of a successful future water supply program are:

- o Increased water reclamation and re-use
- o Aggressive (and perhaps mandatory) water conservation programs involving both urban and agricultural usage

- o Water banking (underground storage of excess surface water in wet years for extraction in dry years)
- o Water transfers and water marketing
- o Improved groundwater management
- o Full utilization of the dependable yield of the Bureau of Reclamation's Central Valley Project (about 1.5 million acre-feet remain to be marketed)
- o A determination of balanced use of water in the Delta and how much is available for export considering all of the current and future beneficial uses.

Water Marketing - General

California has an exceptional and sophisticated system of water storage and conveyance facilities throughout the State. The utilization of these existing facilities to maximize the use of existing water supply sources and to reduce the cost of new sources makes abundant sense. So does providing a tangible monetary incentive for more extensive and effective water conservation and conjunctive use programs. We should stress, however, that although water marketing should be an important part of providing the State with an adequate future water supply, it will only be a portion of a multi-faceted program that will require cooperation, willingness to change, and probably new legislation.

Marketing Surface Water

California is a water-rich State when compared to many states in the southwest. Surface water has long been considered to be a resource that should be owned and allocated for the benefit of all the people of the State. This is reflected in a carefully structured system of water rights that is administered by the State Water Resources Control Board (SWRCB).

Riparian Water: Owners of property adjacent to watercourses have riparian rights to sufficient water to meet their needs on the land contiguous to these streams. Riparian water rights go with the land and cannot be exported to other locations.

Appropriative Water: Surface water is appropriated through a permit or license granted by SWRCB. All appropriators, including the State and federal

governments who own and operate the State's largest water supply systems, are subject to regulation by SWRCB.

Current water law presents three obstacles to marketing appropriated water:

1. Marketing and export can only take place if there is no damage to other water right holders on the subject stream. SWRCB has the authority to work out arrangements to reduce the impact to "no significant damage" for temporary transfers but doesn't have that flexibility for the more desirable permanent transfers. Legislation is needed to correct this.
2. Legislative "area of origin" protection allows upstream areas to retain senior rights to water that may be needed for future benefit and development of those areas. These protections may require some tangible consideration for the areas of origin to prevent future reversion of the water right if a sale or transfer is intended to be permanent.
3. Export of appropriative water requires a change in the place of use and most often the purpose of use in the water right permit or license. This requires a lengthy hearing process before the State Water Resources Control Board.

There have been mixed signals from environmental interests regarding sale of surface water. On one hand, they've strongly supported legislative efforts to facilitate water marketing. They believe that maximizing use of already developed sources of supply is environmentally preferable to new source development. On the other hand, they are actively pressing for more in-stream uses which will constrain surface water marketing.

Another obstacle to selling Northern California water in Southern California is the lack of conveyance capacity through the Delta. This prevents the State Water Project from delivering its full allotment and

is the primary impediment to sale and export of additional water originating north of the Delta.

"Wheeling" water from a seller to a buyer will, in most cases, involve conveyances belonging to other water agencies. Not all of these agencies support the concept of water marketing. Even though current laws generally mandate the use of available conveyances, they're sufficiently vague (particularly pertaining to what's "reasonable" compensation for conveyance usage) to allow circumvention.

Another important variable that can complicate or thwart surface water sales is demands by regulatory agencies and environmental groups for dedication of more water for in-stream uses such as fisheries, habitat, recreation, etc. These demands have tended to be unpredictable and often unrealistic, but must be dealt with. This is often accomplished as part of complying with California's environmental quality laws. Compliance with the CEQA process is probably the greatest impediment to private involvement in surface water sales because of the extent and unpredictability of its cost.

Allocated Water: Water rights for the State Water Project (SWP) and the Federal Central Valley Project have been granted by the SWRCB to the State Department of Water Resources (DWR) and the United States Department of the Interior-Bureau of Reclamation (USBR), respectively.

DWR contracts with 30 water agencies to deliver water to them through the State Water Project facilities. Most of these agencies are wholesalers who market water to purveyors who deliver it to customers. The State Water Contractors are repaying all the capital costs of constructing existing SWP facilities even though several contractors don't have the physical facilities or the need to take their full entitlements. They all pay operation, maintenance and transportation costs for the water they do use. One of the provisions of the State Water Contract prevents any contractor from marketing water in the service area of another contractor without permission. A controversy has arisen because some of the water purveyors (retailers) have attempted to sell State water within the service area of State Water Contractors other than the one that supplies their water. Threatened legal action by one or more state water contractors has, thus far, blocked these

proposed sales. It can be argued that inability of retail water purveyors to export a portion of the state or federal water they are entitled to buy is resulting in inefficient use of both the SWP and CVP.

Some of the State Water Contractors strongly believe that since the State can't fulfill its contractual obligations to provide the full design capacity of the SWP without the construction of new facilities, current "surpluses" should be reserved for the benefit of the contractors. There is also a pervasive fear among the state contractors that water marketing could cause a false public perception that it is less urgent to complete the SWP, which is essential to assure Southern California of adequate future water supply.

The USBR is currently preparing an Environmental Impact Statement which is the first step in a proposal to market 1.5 million acre-feet of currently unallocated CVP water. The initial draft of the EIS (the result of a \$3 million effort) was recently scrapped by the Bureau because of strong objections to the proposed marketing plan by environmental interests and prospective customers. The sale of this water is a key factor in the state's water supply, but how much will ultimately be sold and for what purposes remains in substantial doubt.

Agricultural water conservation presents the most potential to make currently allocated CVP water available for sale. Pressure is mounting on the Bureau to allow that to happen. The Bureau recently issued guidelines for transfers and sales, but they are rather vague. New faces in Washington and at the Bureau's Regional Office in Sacramento may affect the politics of the Bureau's role in water marketing.

Colorado River Water is allocated among the states by federal law. California's 4.4 million acre-foot allocation is distributed in hierarchical order among several irrigation districts and the Metropolitan Water District of Southern California (MWD). MWD's allocation is being reduced by 662,000 acre-feet when Arizona takes its full entitlement for the Central Arizona Project. MWD recently concluded negotiations with the Imperial Irrigation District whereby MWD will construct and pay for nearly \$15,000,000 of water conservation facilities in the Imperial Valley in exchange for 100,000 acre-feet of Colorado River water that Imperial was "wasting." The successful

conclusion of those negotiations immediately prompted a lawsuit by the Coachella Valley Water District, which is above MWD in the entitlement hierarchy. It is almost certain that the federal "Law of the River" precludes buying and selling Colorado River water as a commodity now and in the future. However, assuming that MWD and IID can assure protection of Coachella's water rights, there is a strong possibility of MWD obtaining an additional 100,000 to 200,000 acre-feet through an expansion of this agreement.

Marketing Groundwater

California is rich in groundwater resources. In stark contrast to the rigorous management of its surface water is the fact that the State has no statewide groundwater management. Numerous attempts have been made by the State Legislature to enact such a system, but all have failed. The utility of groundwater has and still is viewed as a property right in California. The only constraint in most of the State on a property owner's use of underlying groundwater is the threat that his neighbors may bring civil suit against him if they can prove damage from his activities.

Reliance on groundwater is heavy in the southern half of the State. Most of the State's 2 million acre-foot annual overdraft occurs in the San Joaquin Valley. Agriculture uses groundwater in times of drought and at other times because it's often cheaper than surface sources (especially State Water Project water). Groundwater supplies about 40% of the municipal and industrial water in the largest urban areas of Southern California. It's interesting that the combination of imported water and local groundwater has given the much drier south far more drought protection than many northern locations that are solely or mostly dependent on surface sources.

There have been some effective efforts to manage groundwater quantity in several large basins in Southern California and one in Northern California. This has resulted from court adjudication or formalization of voluntary user agreements and has been quite successful in minimizing stabilizing groundwater levels through strict pumping allocations and aggressive recharge programs.

Most of these management programs have not adequately addressed groundwater quality which is an

increasingly serious problem in both agricultural and urban areas. The State Legislature and regulatory agencies are addressing the problem, but progress is slow. Another serious threat to groundwater quality is the absence of an aggressive comprehensive statewide waste management plan. Public misperception (the NIMBY syndrome) of a number of needed waste management programs and facilities coupled with slow progress on programs to clean up leaking underground tanks, toxic pits, and waste disposal sites are all contributing to serious ongoing groundwater pollution. A crisis looms.

On the brighter side, several large agencies are becoming increasingly active in groundwater "banking." This process recharges (or "banks") surplus surface water into groundwater basins during wet years to be extracted during dry or drought years. The State DWR's Kern Water Bank and several efforts by the Metropolitan Water District of Southern California are very promising in terms of increasing dependable supplies.

There are substantial quantities of undeveloped groundwater in the Sacramento Valley and along the eastern slopes of the Sierra Nevada Mountains. There are potentially important sources of developable groundwater along the coast as well. These sources have the greatest potential of producing significant quantities of marketable water.

Marketing groundwater is made somewhat simpler by the absence of State law and regulation pertaining to groundwater. The environmental protection laws still have to be complied with. The time and expense associated with that process can be a substantial impediment to marketing.

A key element in any successful groundwater marketing program is the demonstration that the proposed export is within the basin's "safe yield" and will not result in overdrafting. The necessary data to determine a "safe yield" is often not available. Obtaining that data can be an expensive and time consuming process.

Groundwater "mining" (the planned extraction of groundwater that exceeds natural and artificial recharge) may be feasible at some specific locations, but the possibility of damage to overlying property through subsidence, potential loss of production from

existing wells and adverse public perception of overdraft, makes new "mining" proposals unattractive as a source of marketable groundwater.

Public perception is a vitally important element of groundwater marketing. "Public" includes all of the basin's overlying land owners plus the affected general public. All need to be assured that the proposed export will not result in economic damage, that the present and future water supply of the area will not be adversely affected, and that adverse environmental effects won't occur or will be mitigated.

Water Brokering

The State Department of Water Resources is the principal water broker in the state. It functions in that capacity in times of drought. The State bought 200,000 acre-feet of water this year from Yuba County Water Agency and sold 90,000 acre-feet to Santa Clara Valley Water District for M&I use, with the remainder going to agricultural water interests at a substantially reduced unit cost. DWP charged their buyers the unit cost charged by Yuba County Water Agency plus the cost of transporting the water through the Department's facilities. The unit price paid to Yuba County Water Agency varied from \$45 per acre-foot for the M&I water to as low as \$5 per acre-foot for some of the irrigation water.

DWR has also been charged by the Legislature to assist and facilitate the sale and transfer of water. That task is being handled by a new Division of Local Assistance. Private sector water brokerage is not abundant, but will probably be more available once some "break-through" water transactions are consummated.

Attitudes About Water Marketing

Although there are more than 1,100 water purveyors in the state, California has a remarkably close-knit water "community." Those who have been in the water business the longest seem the most reluctant to accept water marketing as a viable, important part of California's future water supply picture. Some believe that water should continue to belong to all of the people and be allocated rather than bought and sold as a commodity. Others fear that reallocation

of current supplies will weaken the argument for completing the state water project. There is also concern that even a modest water market will drive up the price of water and make relatively inexpensive "surplus" water from the state and federal water projects less available.

The attitude toward water marketing of influential elements of the water community is as important to its future utility as its legal, regulatory and legislative aspects. Hopefully these attitudes will become more supportive as more sales are consummated, and some of the fears about water marketing prove to be unjustified.

Trends

The recent (and in some parts of the state, current) drought has heightened interest in water marketing. During 1987, 1988, and 1989 Yuba County Water Agency sold water to DWR. As previously mentioned, DWR brokered the water it bought in 1989 to water purveyors. In the two previous years it used the water to meet Delta Water Quality standards. In 1988 and again this year the State Department of Fish and Game has purchased water to protect salmon spawning and bird migration areas. Yuba County Water Agency sold water to several agencies this year other than DWR. It can be concluded that sales between public water agencies are becoming more prevalent and, during drought "emergencies," can be concluded quickly. There are a number of other water purveyors throughout the state (both agricultural and urban) that would like to purchase additional water but are finding it difficult because of legal, political and physical problems. Competition among environmental interests, agribusiness and urban water purveyors for water from currently developed sources will continue to increase. This trend, combined with the ever-increasing cost of new supply source development will favor increased water marketing.

Conclusions

Marketing water in California is not easy and won't be for the foreseeable future. But it is "do-able." Powerful political and economic interests will combine to prevent water supply deficiencies from impeding the State's continued growth and economic

well-being. Supplying those needs will require consideration of the growing and appropriate demands for water-related environmental protection. An important part of the future supply picture will be efficient use of existing supplies. Water marketing will be an important part of that aspect of water supply. New legislation, attitude changes, more public involvement, and carefully crafted proposals that are mutually beneficial will all be elements of an emerging water market in California. How quickly all these things occur is an interesting, difficult question; but in the author's opinion, it will be sooner rather than later.