

Maximizing Conjunctive Use Opportunities in California: What's the Holdup?

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California is actively experimenting with various types of conjunctive use projects in order to improve the overall reliability of water during a time of ever-increasing demand and water supply shortages. “Conjunctive use” most commonly refers to the coordinated use of surface and groundwater supplies. In a coordinated operation, conditions of hydrologic surplus support direct and in-lieu banking of surface waters underground, and a managed groundwater aquifer allows a larger share of demand to be met during periods of drought.



Conjunctive use has long been a popular concept in California and has received even greater attention in recent years with the increased potential for further reductions in State Water Project, Central Valley Project and Colorado River supplies. Historically, surface storage has been the primary method for storing and regulating water supplies, but now further



expansion of surface storage is fiercely resisted by environmentalists, and new storage opportunities are extremely expensive and face numerous political and regulatory challenges. Conjunctive use, however, offers Californians the opportunity to take advantage of the natural subsurface storage that exists in groundwater basins, many of which have been subject to periods of over-production.



Photos from a recent Groundwater Resources Association of California field trip to the Santa Clara Valley Water District's (SCVWD) recharge facility, in operation since the 1930s. Center: Walter Swain of the U.S. Geological Survey (left) and Mark Merritt of the SCVWD (right).

The California Department of Water Resources estimates that as much as 250 million acre-feet of usable storage capacity exists in California's groundwater basins.

However, despite the opportunities and the professional and political enthusiasm for conjunctive use, institutional constraints still inhibit the full realization of its potential as a water management technique. Here is why:

Legal Considerations

California utilizes a dual system of surface water rights, recognizing both riparian and appropriative rights. Riparian rights are based solely on the ownership of land, and appropriative rights are based on the actual use of water, with priorities governed by the concept of “first in time, first in right.” Groundwater allocation follows the same dual pattern, with overlying rights being considered the groundwater equivalent to riparian rights.

The common law origins and the consistent development of precedent related to the overlying and appropriative right systems provide few bright lines to suggest an orderly resolution of disputes. Consequently, the California courts have done a reasonable job of marrying underlying water policy with the physical conditions of California.

Since 1949, the California Supreme Court and the Court of Appeals have embraced the concept of safe annual yield as the cornerstone for basin management. Safe annual yield is the amount of water that can be withdrawn from a groundwater basin on an annual basis without causing an undesirable result. What constitutes an undesirable result may depend on the specific hydrology of the basin and surrounding watershed, but water quality degradation, salt water intrusion, land subsidence, a substantial decline in the water table, and an unreasonable increase in pump lifts are likely to be considered undesirable.

The courts have defined the concept of overdraft consistent with the historical technical definition: overdraft is generally equated with exceeding safe yield and the undesirable results that follow. The courts

have given further legal importance to the term by establishing a framework for allocating rights in accordance with safe yield and considerations of overdraft. In short, in allocating water among competing interests, a condition of overdraft will support an accrual of prescriptive rights that will authorize limitations, subordination, and even elimination of competing rights. Furthermore, the California courts have authorized the commingling of local and imported water in groundwater basins, permitting its storage and recapture and providing a hierarchy for recovering the stored water.

Despite all this good work in water management and regulations, questions persist. There are contentions by some overlying owners that they have priority to subsurface storage space based upon the fee ownership of the overlying land. One public agency will quarrel with another as to which has the higher public use. Not only are there garden-variety questions of priority, but also more specific concerns related to the quantities of accounts, methods of exercise, and storage loss that must ultimately be addressed by the courts, if not handled through a conjunctive use program prior to its initiation.

Institutional Considerations

In California, a dramatic difference exists between the regulatory framework that governs surface water and that governing groundwater. Surface water diversions initiated after 1914 are regulated by the State Water Resources Control Board (SWRCB). The SWRCB has no permitting authority over surface water diversions initiated prior to 1914, surface water appropriations, riparian rights, or groundwater uses, with the exception of groundwater that is underflow or, more broadly, found in a "known and defined channel." Nevertheless, in spite of those restrictions, the agency has engaged in comprehensive regulation of surface water supplies. Through the application of the California Public Trust Doctrine and the SWRCB's administration of water quantity and water quality, no surface water right is immune from the relentless social pressure for more efficient use.

In contrast to the comprehensive, statewide

regulation of surface water, groundwater supplies are administered regionally by local agencies and courts in a variety of forms ranging from voluntary management plans at one end of the spectrum to comprehensive adjudications at the other. In between those extremes are the formation by special legislation of narrowly focused management districts that have the sole responsibility for regulating groundwater production, the formation of water replenishment districts, and the enactment of city and county ordinances that rely upon the local police power for their enforcement. Basins that have experienced the most critical shortages, principally in southern and central California, either already have or are presently moving through comprehensive adjudication. In northern California and other areas where surface water is more plentiful, groundwater is managed primarily through local agencies.

Absent express legislation or a comprehensive adjudication allocating the legal rights and responsibilities related to storage, Californians presently are apt to litigate the questions of rights and benefits. Apparently, even a court judgment allocating storage rights is not immune from being revisited with the passage of time.

For example, the California Water Code includes a California Water Storage District Law (Water Code § 39000, et seq.) that authorizes the creation of a public entity, the purpose of which is to regulate the use of storage in a particular basin. However, that law has not been widely used, with the result that multiple political jurisdictions may overlap in a given basin. In such a situation, what is the legal basis for sorting out priority between the potential interests? Special legislation to resolve such conflicts is rare, and in some cases the results are not what was initially expected. Absent an agreement, the resolution of conflicts often defaults to the courts with mixed results.

Active conjunctive use projects are being implemented in most of the 16 adjudicated basins in central and southern California. However, even the adjudicated basins are not immune from controversy. For example, there is a case pending before an
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California Dreaming

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Imagine: You are starting a groundwater investigation. You go to the state's Web site for well records and groundwater information and can download not just water levels for the region, but reports of previous investigations in the area, the locations of all nearby wells, well construction information (including screen interval!), geologic and geophysical data, and water quality data. Instead of being limited to a myopic analysis of the area in question, your groundwater investigation is unconstrained by a well confidentiality law and under-funded data management. You must be dreaming, right? No, you are in Arizona, New Mexico, or almost anywhere else in the United States...besides California.

California is the only western state with a well confidentiality law and largely inaccessible groundwater data. While we spend billions to promote groundwater storage and conjunctive use, practicing professionals generally do not have access to the basic data necessary to make informed recommendations and decisions. Homeowners cannot anticipate the water level and water quality of a new well based on neighboring wells. Unless one is working for a public agency, you cannot even get drillers' logs for nearby wells. In addition, increasing security concerns have reduced the availability of water quality data from the Department of Health Services, even for many investigations conducted by licensed or registered professionals to protect groundwater supplies.

If California's groundwater resources are truly important, why should individual property rights and a drilling company's desire to limit competition outweigh access necessary for the protection of that resource? How bad must our water supply crisis get before California changes this unsatisfactory situation?

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appellate court concerning who controls the storage rights to southern California's Central Basin even though the prior adjudication expressly reserved that authority to the watermaster.

Today, conflicts arise over allegations related to the relative priority of storage space, quantity of storage space, mobilization of contamination, land subsidence, salt-water intrusion and even the amount of compensation due the holders of storage rights. Without a willingness to convene a broad stakeholder process and an effort to strike a negotiated resolution properly accounting for the various interests, a lasting conjunctive use arrangement is not likely to be achieved.

Negotiation Before Litigation

Experience suggests that those seeking to benefit from conjunctive use and the prospect of more reliable water must be willing to expend resources to clarify ownership and control issues. This does not

mean litigate, at least not as the remedy of first resort. A carefully negotiated agreement may prove to be of considerable value in minimizing legal and political risks. If they are to be successful, the proponents of the program must be willing to embrace the notion that an effective agreement is likely to involve more than two stakeholders or interests. In the end, conjunctive use still presents a viable and important part of California's water supply future. Either Californians will learn to accomplish their goals through negotiation or, absent the political willingness to address the subject on a comprehensive basis, the matter will continue to be clarified in a piecemeal fashion through the courts.

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