

# Water Market Insider

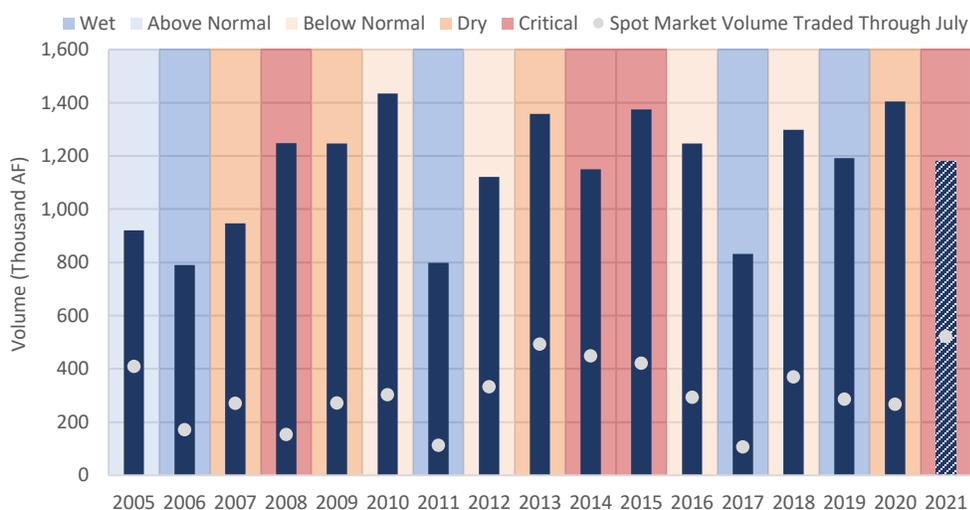
*WestWater Research is the leading economic and financial consulting firm in the water industry.*

## Even in a Critically Dry Year, Water Moves in the Market

California's drought continues to make [national news](#) as the severity of water supply shortages intensifies. Some farmers are making the decision to [remove permanent crop plantings](#), based on concerns that the crop water demands may be difficult to meet under current or future water supply conditions. However, even in a dry year like this one, there is a substantial volume of water available for purchase by permanent crop growers seeking to meet irrigation demands.

Despite drought conditions reaching unprecedented levels this year, the water transfer market remains active. In fact, the volume of water traded during drier years is substantially higher than the volume traded during wetter years. Increased volumes result from heightened demand and willingness to pay for supplemental water supplies. This year is no exception; the volume of water transferred in the spot market through the first seven months of 2021 is the highest on record since 2005.

**Figure 1. Volume Transacted by Water Year Type (2005 – July 2021)**



Note: 2021 data reflects January – July transactions. Water Year Type is defined by the [Sacramento Valley Water Year Index](#).

### Recent Water Transfers to Permanent Crop Growers

Permanent crop growers throughout the San Joaquin Valley have been active buyers in the water market this year, using water transfers to supplement low surface water allocations. Since the beginning of the year, agricultural water districts on the west side of Kern County have purchased nearly 30,000 AF of supplemental supplies on the spot market for prices ranging from \$850/AF - \$1,175/AF on behalf of permanent crop growers.

In early August, the US Bureau of Reclamation approved crop idling transfers to make available 91,567 AF of water originating north of the Sacramento-San Joaquin Delta to be used by growers in the Valley. The negotiated price is \$575/AF north of the Delta, which equates to \$821/AF at the point of delivery when accounting for this year's estimated through-Delta conveyance losses of 30%.

Since the end of May, one Kern County District has transferred nearly 9,500 AF of supplies to permanent crop growers in neighboring districts for between \$900/AF - \$1,000/AF.

While water supplies are limited this year, permanent crop growers have been able to identify willing sellers and acquire water through transfers to address summer shortfalls during peak irrigation demands.

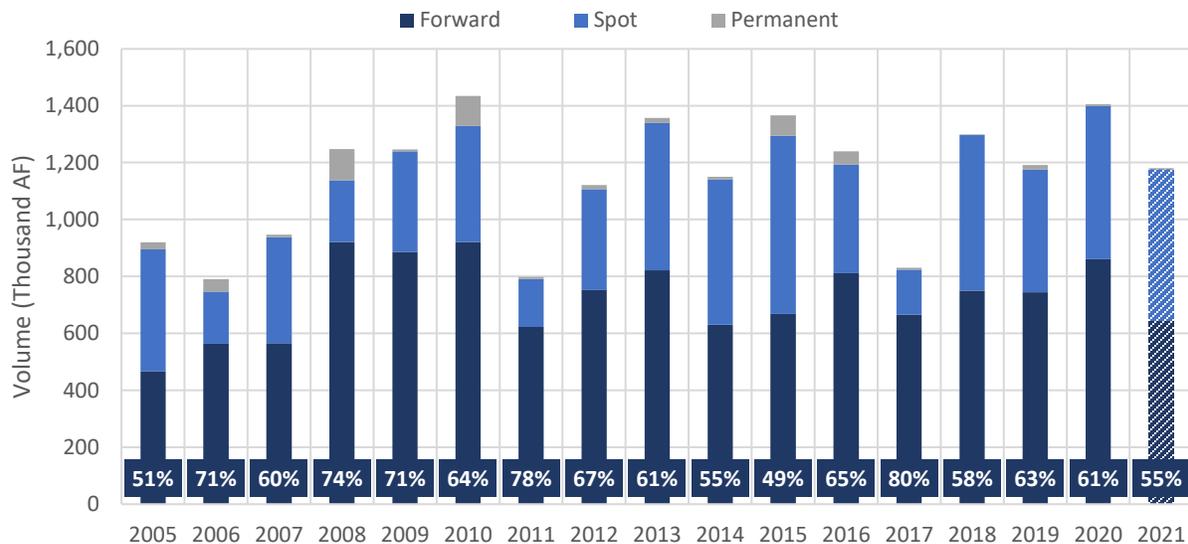
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## Water Futures and Forward Contracting

While spot market prices for water tend to be especially volatile during dry years, a growing segment of the market is moving toward long-term contracting for water supplies. Forward contracts and dry-year options can be used to increase water supply certainty. Increasingly, forward contracts are attractive to both buyers and sellers as they provide increased certainty on interannual revenues (seller) or supply (buyer) while reducing transaction costs for both parties.

**Figure 2. Volume Transacted by Type of Transfer Agreement (2005 – July 2021)**



Note: 2021 data reflects January – July transactions.

Water futures contracts can be used in combination with a forward contract for water to hedge against hydrologic conditions that would result in a lower delivery volume, higher price, or both, per the terms of the agreement. For example, if a forward contract has a variable price schedule based on hydrologic conditions, a buyer could use a long hedge to offset the higher price commitment during a dry year. Alternatively, if a forward contract volume varies by hydrology, a futures hedge can be used to generate a financial return that can be used towards a spot market purchase of water to supplement the contracted volume.

Using cash-settled futures to hedge price risk is common across commodity markets. Buyers/sellers manage physical supply risk separately from their use of cash-settled futures to hedge price risk. Of all agricultural futures contracts traded, 98% are financially settled and only 2% are physically settled.<sup>1</sup> The same approach is applicable to California water. While the cash settled NQH2O futures contract does not provide for delivery of physical water, it does offer a tool to mitigate the impacts of California’s highly volatile hydrologic conditions. If used in combination with a water purchase in the physical market (spot or forward), a hedge in the futures market can help to lessen the price shock that results from heightened market demand during dry years. In the rare case where physical water truly is not available to a buyer, hedging with futures can still offer significant financial benefit to offset reduced crop yields, forced fallowing, or other losses resulting from insufficient water supplies.

<sup>1</sup> CME Group. July 2021. <https://www.cmegroup.com/content/dam/cmegroup/trading/equity-index/files/understanding-the-water-futures-market.pdf>