

Toward addressing the marginal cost of water in conservation planning: valuation in support of assessing and prioritizing alternative management actions in the Delta

In a recent CSAMP policy group meeting, during an update presentation from the Structured Decision-making process, the facilitators from Compass posed an important question. What should be the operational cost of water used in costs-benefits assessments? The answer to the question becomes an essential parameter in the program's analyses and informs the project's "consequences table" deliverable. It is understood that the value or range of values of water will serve as a basis for comparisons of candidate management actions and prioritization of actions that emerge from structured decision-making to be implemented in an adaptive-management framework.

For the reasons given below, the cost of **\$815 per acre-foot** is recommended to be used for the water lost from diversion and export as a result directed management actions in the Delta that are intended to benefit listed fish species and other resources of conservation concern.

The cost of water that might otherwise be diverted to management actions in the Delta can be calculated using a variety of methods. Although the cost of water to potential users may vary from year to year, depending on the precipitation in the previous winter and reservoir levels at those times, a water-cost valuation should integrate values expected over multiple years, reflecting the terms of proposed management actions. That value cannot be dependent on a spot-price of water at any given moment.

A reasonable method of valuation is to draw from water-cost projections that will be borne by participants in the proposed off-stream Sites Reservoir project in the Sacramento Valley. It is the latest large project to be planned for either the State or Federal systems. It has participants that include both agricultural and urban contractors who understand that the projected cost of Sites water must be affordable. The valuation is conservative, given that the reservoir is not expected to be completed for a number of years yet, and significant unknowns attend both the ultimate yield and the construction costs.

The most recent source of public information about the cost of water comes from the *Sites Project Value Planning Alternative Appraisal Report* (dated April 2020). After examination of various alternative yields and construction costs (pages 24-26), an "ad hoc value planning" group established a recommended water cost of \$611 per acre foot.

Note, however, that that cost assumes delivery into the north Delta, so carriage losses across the Delta also need to be added. Average carriage losses from 2011 to 2022 were 27%. A future value of 25% might reasonably be assumed. That would increase the \$611 valuation to **\$815 per acre foot**. That value should reasonably serve as the marginal cost that both agricultural and urban contractors are prepared to pay for water delivered to the Banks and Jones pumping plants in the south Delta.