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Missed connections: Fair Ranch and the proposed VA water transfers

Prepared for the Bay Delta Flows Coalition, October 2026



Fair Ranch, c. 1910

Executive summary

1. VA water purchases would run $910m over the $782m budget over the 8-year term; 80% of total spend projected to be permanent purchases

2. Fair Ranch, the first large permanent purchase, calls into question water delivery volumes and associated prices it:

   - Is enforceable only to 5,000 AFY
   - Averages about 2/3 of its 16,000 AFY target;
   - Will cost about $1,200/AF

3. VA water purchase costs would be about 200% long-term stable market prices, which has appearance of a giveaway to water sellers

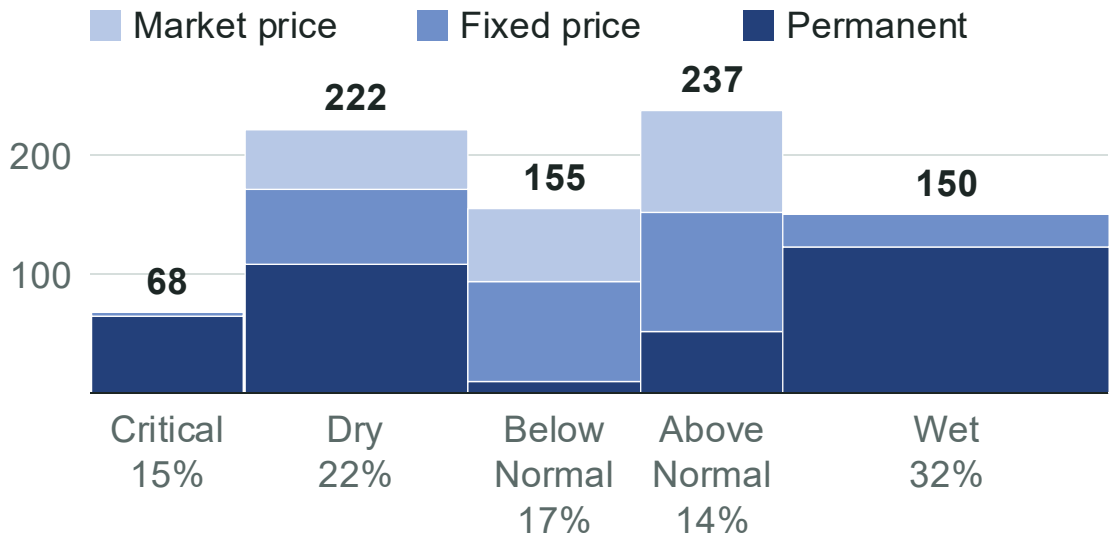
4. Fixed-price purchases: pay about 30% over market prices

5. Only 6% of VA-purchased water volume is delivered in critical years, when the ecosystem needs it most

1 The Voluntary Agreements propose water transfers to increase Delta flows: over budget, and short of water when most needed

VA PURCHASES BY WATER YEAR TYPE

TAF; bar width is the share of years of each type



KEY ISSUES

+$910m

Over budget, 8-year term[1]

6%

Bought in Critical years

Volumes: Final Draft Bay-Delta Plan, Aug 2026, § 4.4.9.3 p. 75. Share of years: HRL Global Agreement App. 1 Table 1b. Over budget: expected 8-year cost $1.69B against the $782m budget (VA MOU App. 3 Table 4, market line including the EBMUD addendum); Budget for programs defined in MOU as Market, Fixed Price, Permanent Purchases

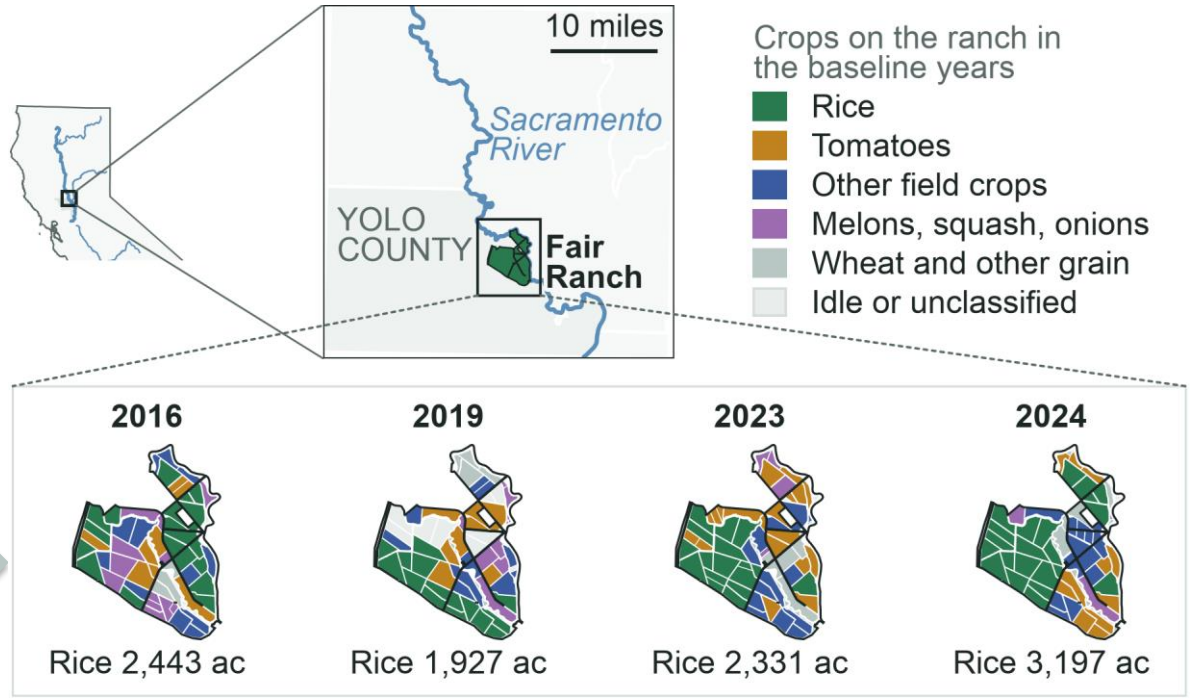
1 Existing budget for programs and associated water volumes defined in MOU as Market, Fixed Price, Permanent Purchases sums to $782m

2 We modeled the Fair Ranch water transfers using historical crop data, crop-idling credits and water availability by year type

Fair Ranch deal structure:

1. The State buys forbearance
2. Rice acres are idled
3. The water is left in the river for Delta flows

Water credited = acres left unplanted × AF per acre for the crop that would have been grown



Crops: DWR/Land IQ Statewide Crop Mapping 2016, 2019, 2023, 2024 (2024 provisional), the four full-supply, non-transfer baseline years, clipped to the ranch (the 35 Yolo County parcels in the contract). Credit rates: Dec 2019 DWR/Reclamation Water Transfer White Paper Table 2-1, frozen by contract Exhibit D-2. Boundaries: US Census Bureau; rivers: USGS NHD, Natural Earth.

2 Modeling results: Fair Ranch produces only about 2/3 of target amount; weak enforcement of amounts above 5 TAF

MODELED DELIVERIES

10,566 AF a year

on average: 66% of the target



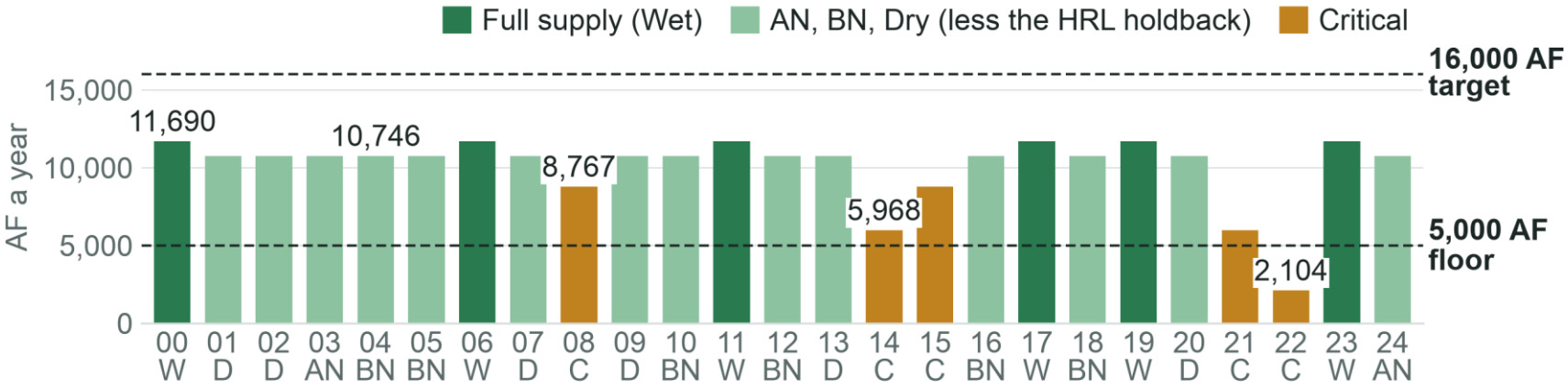
From 2,104 in a 2022-type year to 11,690 in a Wet year

ISSUES WITH THE CONTRACT

- **16,000 AFY target** is unreachable from Fair Ranch property alone: at most 11,690 AF, in a Wet year
- **Above 5,000 AF, enforcement is a meeting:** a "meet and confer" on "economically feasible" fixes
- **Below 5,000 AF, only two misses in ten years count,** and then DWR may, but need not, take the property
- **Some ability to make up water from Tract 6, but no enforceability:** RD 108 need only coordinate "in good faith"
- **No accounting method** for Tract 6 water in the contract

Grant Agreement 4600016769, Exhibit D (Instream Flow and Forbearance Agreement): Expected and Minimum Volumes, § 2; Tract 6, § 6.b.iv; shortfall meet and confer, § 13.b; Remedy Trigger Event, § 13.c; sole and exclusive remedies, § 13.d. Exhibit D-2 (water accounting) never mentions Tract 6. Average: share-of-years weighted (HRL App. 1 Table 1b), Drought Protection Program and HRL holdback included.

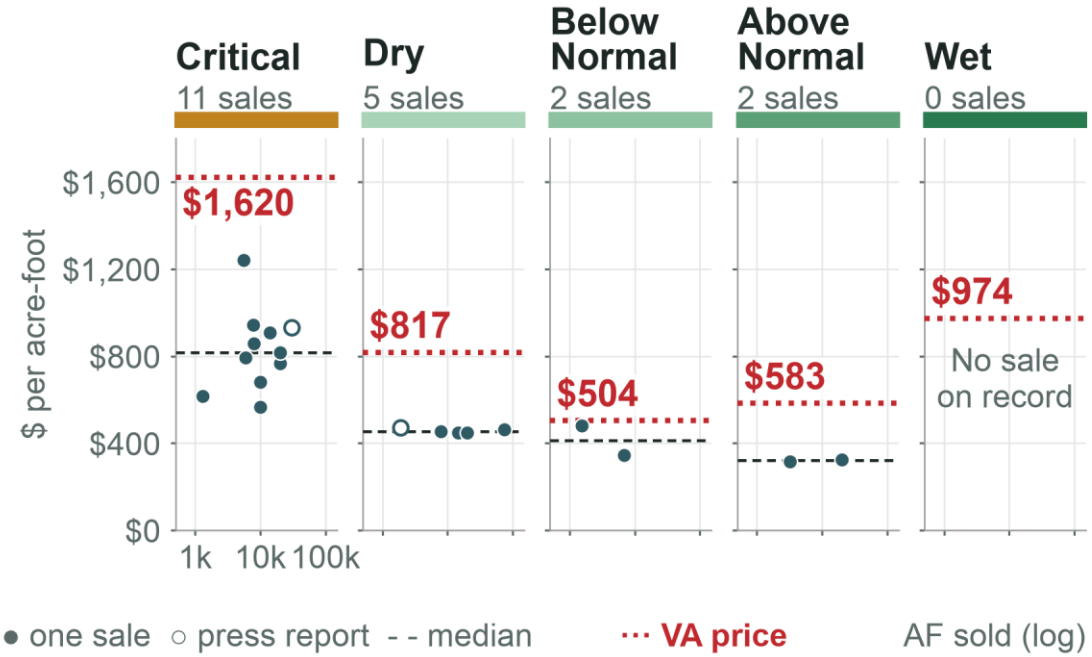
2 Replayed over 2000–2024, Fair Ranch never reaches 16,000 AF and falls below its floor in a 2022-type year



KEY MODEL INPUTS

- Every eligible acre idled (the owner idled 40% in its 2021 transfer)
- RD 108 Tract 6 left out of totals, as supply provisions have no enforcement mechanism if >5,000 AFY
- Drought Protection Program and HRL holdback provisions are incorporated
- Crop baseline: the crop mix of 2016, 2019, 2023 and 2024 (full supply, no transfer); Rice: 2.9 AF/ac; no groundwater pumping in non-transfer years
- A 2022-type year (2,104 AF, below the floor) is not in the average due to rare occurrence
- Full contract cost of $179.95m included, annualized as a perpetuity at real rate of 7%

3 The VA purchases would pay 200% of volume-weighted long-term transfer market prices, running about $910m over budget



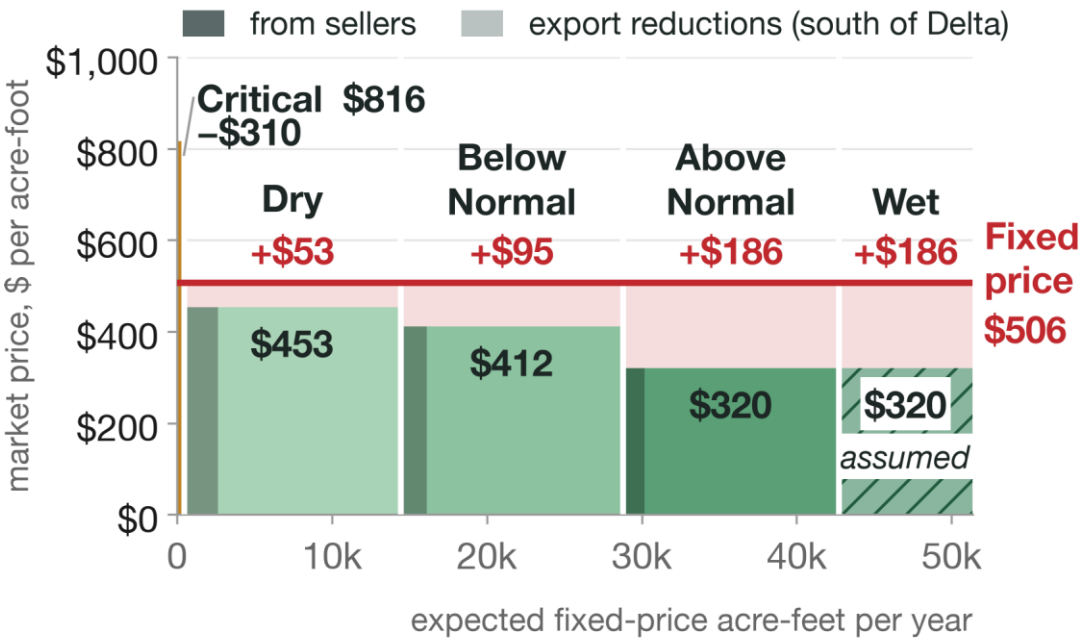
Price bands: stable over past 15 years, when adjusted for inflation

Permanent purchases drive VA prices: at Fair Ranch's price the permanent purchase volumes would cost $1.38B, 2.8x the $490m budget line

20 north-of-Delta seller sales, 2009–2026, price at the point of transfer, real 2026 $ (CPI-U). Weights: share of years 0.15 / 0.22 / 0.17 / 0.14 / 0.32 (HRL App. 1 Table 1b). No north-of-Delta sale in a Wet year, uses Above-Normal price. Below Normal and Above Normal rest on two sales each. VA price: everything the VAs buy in a year of that type (market at the median, fixed at $500/AF, permanent at Fair Ranch's annualized price) ÷ AF bought.

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4 Fixed-price purchases also appear to overpay, by about 30% more than market prices



The VAs overpay for the fixed-price contracts by about 30%

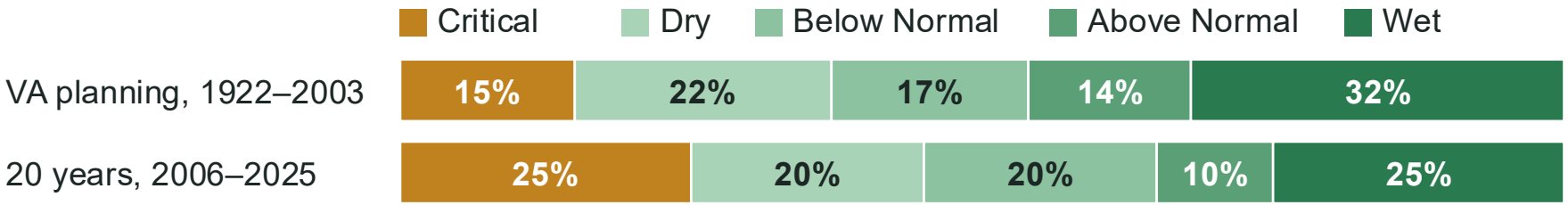
Bars are market prices: the median north-of-Delta sale in each year type

About 90% of the volume is south of the Delta, expected to come from export reductions (the lighter shade); in Critical and Wet years all of it

$506/AF = the $208m budget line over the Plan's fixed-price volumes and 8 years. Bar width = expected fixed-price AF/yr; height = median north-of-Delta sale of each year type. Weighted by when the program buys, the market price is $386: $506 ÷ $386 = +31%. Wet (hatched) uses the Above Normal median, an assumption. Export reductions: the Plan's term for SWP and CVP pumping forgone south of the Delta. VA MOU App. 3 Table 4; Plan p. 75, App. B.1 Table B.1-6.

5 Only 6% of VA purchased water is delivered in critical years when the ecosystem needs it most

SHARE OF YEARS by water year type



SHARE OF VA WATER by water year type, each weighted by its AF and share of years



Share of years: Sacramento Valley water year index (DWR, CDEC WSIHIST); the VA basis is HRL Global Agreement App. 1 Table 1b, which matches CalSim II's 1922–2003 record. VA water: the Plan's purchases by year type (Final Draft Bay-Delta Plan § 4.4.9.3 p. 75), each weighted by the HRL share of years.

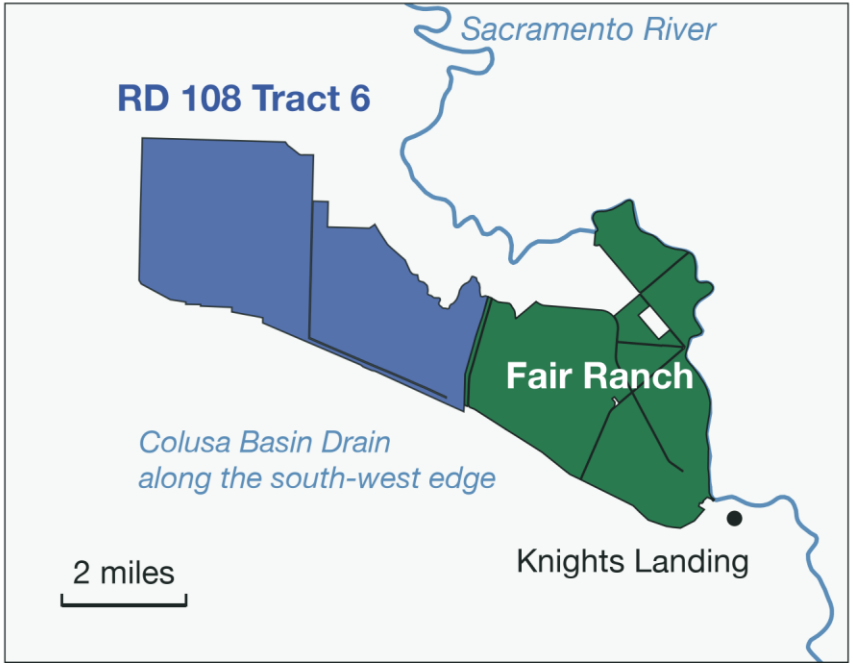
Detailed writeups

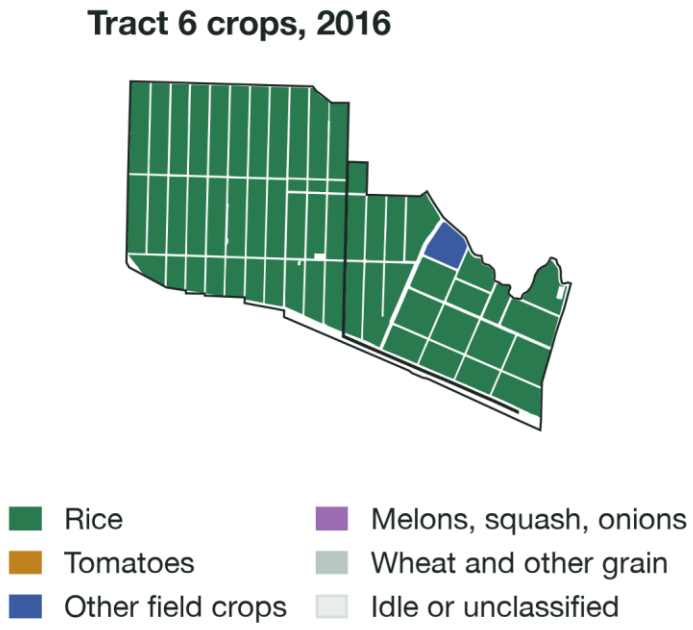
Memo: goes over findings in detail

Explainer: detailed explanation of model mechanics and inputs

APPENDIX

A RD 108's Tract 6 adjoins Fair Ranch: approx. 7,000 irrigated acres, 98% of them rice





Map: MBK Engineers map, overlayed with 22 tax-exempt Yolo County parcels, RD 108 ownership inferred; USGS NHD; DWR/Land IQ 2016.

A Closing the gap to 16,000 AF would mean idling 1,486 to 5,779 of Tract 6's ~7,000 acres, but no hard enforcement provision exists

Year type	Fair Ranch delivers, AF	Gap to the 16,000 AF target, AF	Tract 6 acres to idle to close the gap
Wet	11,690	4,310	1,486
Above Normal, Below Normal, Dry	10,746	5,254	2,218
Shasta Critical	8,767	7,233	2,686
Drought Protection Program	5,968	10,032	5,779
2022-type (18% supply)	**2,104**	**13,896**	**not reachable**

FA § 6.b.iv asks RD 108 only to "jointly and in good faith coordinate" Tract 6, with no volume. Remedies attach only to the 5,000 AF Minimum Volume (§ 13.c.i).

In a 2022-type year Tract 6 would have to idle 6,256 of its 6,947 acres just to lift Fair Ranch to the 5,000 AF floor; 16,000 AF is out of reach (Tract 6 alone yields 4,639 AF). Tract 6 counted the way contract Exhibit D-2 counts Fair Ranch (D-2 never mentions Tract 6): crop-mix baseline, every eligible acre available, RD 108's own Settlement Contract supply, Drought Protection Program, and Tract 6's share of RD 108's HRL commitment (1,749 HRL AF, 1,179 AF of credit).

A The first three permanent deals use 47% of the budget for 12% of the Critical-year water the Draft Plan expects

Award	Price	Share of $490m	Water in a Critical year
Fair Ranch	$179.95m	37%	7,536 AF in an average Critical year
Upper Swanston Ranch	$14.28m	3%	None: water is due only in Dry, Below Normal and Above Normal years (about 3,300 AF each, 39,600 AF in total)
Westside Agriculture	$35.83m	7%	Usually none: about 3,000 AF only when SWP allocations exceed 20%, true in one of five Critical years since 2000
Together	**$230.06m**	**47%**	**About 7,536 AF, 12% of the 65,000 AF the Plan expects**

Any shortfall “must be fulfilled through additional market price water purchases” (Plan p. 75). **No budget line covers it, and it falls in the years water costs the most.**

DWR Instream Flow Water Purchase Program awards and project descriptions, May 28, 2026. Fair Ranch volumes: Prairie Creek Labs compliance model, central case. Westside: replay on final SWP allocations 2000–2024.