

MANAGEMENT STRATEGY · THE DELTA AS A LIVING PLACE · ENVIRONMENT

Increase Delta outflows (65% unimpaired flow target)

A management strategy in the COEQWAL scenario library

This strategy adapts USBR's “Alternative 3” or “Modified Natural Hydrograph” scenario configuration — increased Delta outflow requirements supported by upstream actions and limits on Delta exports — with the December–May outflow targets set to a combination of 65% of estimated unimpaired flow or a condition-dependent enhanced flow schedule, as in the original USBR studies. The 65% of unimpaired flow target is the highest level among the four Delta-outflow strategies in the library.

This brief describes *a scenario that increases Delta outflows (up to 65% of unimpaired flow) for part of the year*, one of 28 management strategies in the COEQWAL scenario library. Each strategy is simulated once under each of five hydroclimates; the references note at the end of this brief lists the model runs.

§2 WHAT THIS STRATEGY CHANGES

USBR undertook an exploratory modeling exercise while developing scenarios for what became the 2024 Long-Term Operations consultation. One set of scenarios, informed by discussions with environmental and non-governmental organizations, included increased Delta outflows and upstream actions to conserve water for environmental and ecological purposes, attempting to balance flows in rivers and the Delta with reservoir storage in Shasta to support cold-water salmon habitat. USBR formalized these actions as its “Alt3” (modified natural hydrograph) scenario; a detailed description appears in Chapter 3 of the Final Environmental Impact Statement for the consultation, published in November 2024.

This member of the set applies the maximum Delta outflow requirement at 65% of estimated unimpaired flow, as was done in the original USBR studies. The companion strategies apply the same configuration at the 55%, 45%, and 35% levels.

The unimpaired-flow requirement applies only December through May and carries numerous overriding and off-ramping contingencies — simulated Delta outflow should not be expected to strictly match a 65%-of-unimpaired condition. Where unregulated flows are available (runoff on the valley floor during storms, for example), outflows can exceed the requirement level.

§3 THE CONFIGURATION IN DETAIL

The table compares the eight operational fields that define this strategy against current operations — the strategy that represents existing operational rules, recent (2020) land use, and TUCPs. Rows that match current operations are shown in light gray; rows that differ are highlighted.

ASPECT	CURRENT OPERATIONS	THIS STRATEGY
TUCP actions	Active	Active
SGMA actions	None	None
Land use	2020 LandIQ	2020 LandIQ
Delta regulations	Standard	Modified Delta outflow (65% unimpaired); limits on exports
BiOps	2019 / 2020 ITP	Modified versions of 2019 / 2020 ITP
Infrastructure	Standard	Standard
Flows	Standard	Delta outflow up to 65% unimpaired, supported by contributions from select tributaries
Allocation / priorities	Standard	Allows CVP Settlement allocations down to 0%

§ 4 LINEAGE AND SOURCE

This configuration was adapted from USBR's Alt3 scenario, made available after the Long-Term Operations consultation concluded in December 2024. The COEQWAL team replaced the hydrology with DWR's adjusted historical dataset and updated agricultural demands to the 2020 LandIQ-based land-use dataset; the 65% unimpaired and enhanced outflow targets are carried over from the original USBR studies. The CalSim model files for this strategy are referenced by the run IDs in the references note at the end of this brief.

§ 5 RELATED STRATEGIES

RELATED STRATEGIES — THE DELTA AS A LIVING PLACE

Reduce Delta outflows (35% unimpaired flow target). USBR Alternative 3 for the Long-Term Operation of the Central Valley Project, with Delta outflow requirements set to roughly 35% of unimpaired volume.

Maintain Delta outflows (45% unimpaired flow target). USBR Alternative 3 for the Long-Term Operation of the Central Valley Project, with Delta outflow requirements set to roughly 45% of unimpaired volume.

Increase Delta outflows (55% unimpaired flow target). USBR Alternative 3 for the Long-Term Operation of the Central Valley Project, with Delta outflow requirements set to roughly 55% of unimpaired volume.

Increase Shasta carry-over storage. Spring CVP allocation reductions that raise the target carry-over storage in Shasta reservoir by 20% relative to current operations.

Relax Delta salinity standards. Current operations with the fall X2 salinity requirement removed; other Delta flow and salinity requirements remain in place.

Delta Conveyance Project. The Delta Conveyance tunnel (6,000 cfs North Delta Diversion capacity) with 2025 voluntary-agreement flows and Sacramento Valley rice-fallowing actions.

RELATED STRATEGIES — ENVIRONMENT

No flow requirements. Current operations without minimum flow requirements on Central Valley rivers.

Winter-run refuge flows. Sacramento River flow requirements and Shasta cold-water storage protection to support Sacramento River winter-run Chinook salmon life-cycle needs.

Functional environmental flows with reduced crop acreage. Functional flow requirements combined with reduced irrigated acreage across the Central Valley, reflecting groundwater management under SGMA.

Winter-run refuge flows with reduced crop acreage. The winter-run refuge flows combined with reduced irrigated acreage across the Central Valley, reflecting groundwater management under SGMA.

Increase Delta outflows (55% unimpaired flow target). USBR Alternative 3 for the Long-Term Operation of the Central Valley Project, with Delta outflow requirements set to roughly 55% of unimpaired volume.

Functional environmental flows. Functional minimum flow requirements on tributaries to the Sacramento and San Joaquin rivers, derived from natural-flow estimates.

§6 WHAT THIS DOESN'T SAY

This brief describes a scenario representation in CalSim, not a real-world policy proposal or implementation plan. The strategy as modeled may not capture all details necessary to support direct translation to actual operations. The brief does not predict, evaluate, or recommend any outcome — it describes what the scenario changes about CalSim's representation of the system. For what the model produces under this strategy, see the result briefs referenced in §7.

§7 SEE RESULTS FOR THIS STRATEGY

To see modeled outcomes under this strategy across all nine key outcomes at the reference hydroclimate, see the *The Delta as a living place* theme brief.

To see outcomes at a specific location of interest, see the relevant LOI briefs — particularly those for Delta locations and the tributaries that contribute to Delta outflow.

Compare this strategy in the data explorer → (<https://coeqwal.org/explore?strategy=s0039>)

REFERENCES — MODEL RUNS

Each strategy is simulated once under each of five hydroclimates. The table lists the model run behind this strategy and the current-operations run it is compared against, for each hydroclimate, so any reader can trace this page to specific CalSim runs.

HYDROCLIMATE	THIS STRATEGY	CURRENT OPERATIONS
Historical hydroclimate (adjusted)	s0039	s0020
Moderate climate stress (EC-Earth3-Veg)	s0150	s0134
Moderate-high climate stress (cc50)	s0078	s0047
High climate stress (cc95)	s0098	s0056
Extreme climate stress (TaiESM1)	s0124	s0108

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