

MANAGEMENT STRATEGY · THE DELTA AS A LIVING PLACE · ENVIRONMENT

## Increase Delta outflows (55% unimpaired flow target)

A management strategy in the COEQWAL scenario library

This strategy adapts USBR's "Alternative 3" or "Modified Natural Hydrograph" scenario configuration which features increased Delta outflow requirements supported by upstream actions and limits on Delta exports. The Delta outflow targets are assigned December–May according to a combination of 55% of estimated unimpaired flow and a condition-dependent enhanced flow schedule, following the structure of the USBR study from which this scenario was adapted. This scenario represents an increase in Delta outflow relative to conventional flow requirements but is less than the 65% unimpaired flow scenario.

This brief describes *a scenario in which upstream allocation adjustments and Delta export limits are combined with Delta outflows targets to increase flow up to 55% of unimpaired flow*, 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. 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 of four similar scenarios applies the maximum Delta outflow target at roughly 55% of unimpaired flow, scaled down from the 65% level used in the original USBR Alternative 3/Modified Natural Hydrograph studies. The flow schedule that substitutes for the unimpaired flow percentage requirement under certain, relatively frequent, conditions is scaled back proportionally. Existing Delta outflow requirements are kept in place such that if the modified Delta outflow targets are less than pre-existing flow requirements, the pre-existing requirements are used.

The scaled and modified natural hydrograph requirement applies from December through May and carries numerous overriding and off-ramping contingencies. Simulated Delta outflow should not be expected to strictly match a 55%-of-unimpaired condition but will reflect a mix of the enhanced flow schedule and the 55% target. 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 (55% unimpaired); limits on exports                             |
| BiOps                   | 2019 / 2020 ITP    | Modified versions of 2019 / 2020 ITP                                                   |
| Infrastructure          | Standard           | Standard                                                                               |
| Flows                   | Standard           | Delta outflow up to 55% 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, updated agricultural demands to the 2020 LandIQ land-use dataset, and set the outflow requirement to this strategy's level. 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

**Increase Delta outflows (65% unimpaired flow target).** USBR Alternative 3 for the Long-Term Operation of the Central Valley Project, with Delta outflow requirements set to roughly 65% of unimpaired volume.

**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 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 (65% unimpaired flow target).** USBR Alternative 3 for the Long-Term Operation of the Central Valley Project, with Delta outflow requirements set to roughly 65% 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=s0042>)

## 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)      | s0042         | s0020              |
| Moderate climate stress (EC-Earth3-Veg) | s0153         | s0134              |
| Moderate-high climate stress (cc50)     | s0081         | s0047              |
| High climate stress (cc95)              | s0101         | s0056              |
| Extreme climate stress (TaiESM1)        | s0127         | s0108              |

---

COEQWAL · Collaboratory for Equity in Water Allocation

RunID s0042\_USBRAlt3\_2020LU\_DeltaOut55 Web platform ID 5.3 Brief v0.1 (generated draft)

Updated August 21, 2026

---

[COEQWAL](https://coeqwal.org) (https://coeqwal.org)

[Return to COEQWAL Documentation](https://coeqwal.org/data) (https://coeqwal.org/data)