

As part of the Track 1 ROC on LTO process, Reclamation has shared several alternatives to Action IV.2.1 (the I:E ratio action in the RPA of the 2009 NMFS LTO BiOp):

- 1:1 I:E ratio regardless of year type
- Another variation with <1:1 I:E ratios at higher Vernalis flows

**CCVO WODC IDEAS FOR ALTERNATIVES TO THE I:E RATIO IN ACTION IV.2.1**

1. Follow the water year ratios given in RPA Action IV.2.1 except when flows at Vernalis are in excess of 6,000 cfs, regardless of water year type, then exports can go to 1:1. However HORB must be installed when exporting at 1:1 (installed prior to allowing flows to go to 6,000 or higher at VNS. [*HORB can't be constructed at flows over 5,000 cfs; can operate up to 10,000 cfs*])
2. If Vernalis flows are already greater than 6,000 cfs, and HORB cannot be installed, then 1:1 exports allowed if for the April and May period the SH loss triggers are made more sensitive (for example something like 4 and 8 fish / TAF) to protect Southern Sierra Diversity Group Steelhead.
3. (*Variation of #1, but not conditioned on high Vernalis flows*) Manage to a less restrictive I:E ratio if, as a backstop, also manage to steelhead loss density triggers more restrictive than the current steelhead triggers (listed as daily loss limits, but are effectively 8 fish/TAF and 12 fish/TAF).
4. Operationalize/streamline WIIN Sec 4001 I:E flex on transfers, voluntary sales, releases, as long as water is “additional to that which would otherwise occur [at Vernalis]”. Defining additional water could be relative to the 2-E flows on the Stanislaus, or relative to the Vernalis flow requirement (which is disputed between Reclamation and the SWRCB).
5. Design an experiment to go along with flexed operations, as in the 2012 Joint Stipulation.
6. Propose to operate under the existing water year type index and the associated ratio tables listed under Phase II of the RPA IV.2.1 action. If hydrologic conditions and runoff forecasts change, add a stipulation that a modification to the current water year type index I:E ratio would warrant 1:1 ratio or less restrictive I:E “on top” of the existing ratio.
7. If the barriers are not going to be constructed then the following should occur. Since few if any SH that move through the Old River route make it north of the Highway 4 location to exit the Delta at Chipps Island under any export condition, all “survivors” must go through the export facilities as salvage. If 1:1 exports are to occur, then all available exports should go through the CVP to reduce exposure to the CCFB environment and its predation field. SH loss triggers should be made more sensitive to insure protection of SSDG SH moving through the Old River corridor route to the Projects. Operations of the SWP should be constrained to the minimum needed to supply BBID and any diverters between Banks and the intertie. Perhaps CCFB gate operations should be confined to daytime ops to avoid fish movements at night (need to check more on this).
8. If the fish collection facility is undergoing maintenance and salvage is not 100% functional, then exports should be reduced or steelhead loss density triggers made more sensitive.