

occasional contingencies would tend to reduce capacity for transfers. In consideration of those factors, proposed transfers would be up to 360 TAF in most years when capacity is limiting.” The project description of the proposed project is not specific as to how much of the potential 511,000+AF are proposed to be transferred by water year type. Therefore, the project description is inconsistent with the limitations for water transfers set in the FWS OCAP BO.

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- FWS OCAP BO pg 230, p3, “for this assessment proposed exports for transfers (months July-September only) are as follows:

Water Year Type	Maximum Amount of Transfer
Critical	up to 600 kaf
Consecutive Dry	up to 600 kaf
Dry after Critical	up to 600 kaf
All other Years	up to 360 kaf”

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Note that the FWS OCAP BO addresses these transfer amounts only during the period of July through September.

- NMFS OCAP BO pg 729 p3, “...this consultation does not address ESA section 7(a)(2) compliance for individual water supply contracts. Reclamation and DWR should consult with NMFS separately on their issuance of individual water supply contracts, including analysis of the effects of reduced water quality from agricultural and municipal return flows, contaminants, pesticides, altered aquatic ecosystems leading to the proliferation of non-native introduced species (*i.e.*, warm-water species), or the facilities or activities of parties to agreements with the U.S. that recognize a previous vested water right.”, The NMFS OCAP BO appears to provide that the water transfer seller and recipient agencies will require ESA consultation.

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- Pg ES-10, ES 4.1 – Specific measures are not set forth to assure that the Seller substitutes groundwater for surface water..

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- Pg ES-10, ES 4.2 – “Reclamation would limit transferred water to what would not have otherwise been released downstream absent the transfer.” Specific measures to assure that this is the case are not spelled out.

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- Pg ES-10, ES 4.2 – “Each reservoir release transfer would include a refill agreement between the seller and Reclamation (developed in coordination with DWR) to prevent impacts to downstream users following a transfer.” “Refill of the storage vacated for a transfer may take more than one season to refill if the above conditions are not met in the wet season following the transfer.” The reduction in storage from the transfer, that according to the document could take years to replace, could cause significant impacts to downstream users, reservoir resources (recreational boat launch access and marinas, warmwater fisheries reproduction success, exposure of sensitive archaeological sites in the reservoir fluctuation zone and other significant impacts). The project must only be allowed to release water it has already stored, not release water that it does not yet have as appears to be proposed by the project. If the project is only allowed to release water it has already stored then the impacts to other resources are dramatically reduced. If the release only of water that is already stored is not a part of the project description, it must be a requirement for mitigation of the impacts caused by releasing water before it is stored.

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- Pg ES-11, ES 4.3 – If weed cover is not removed then the consumptive use conservation the project claims to be using for the water transfer is not supportable..

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- Pg ES-11, ES 4.3 – Consideration must be given to protecting adjacent properties from herbicide spray drift and weed pressure from fallowed adjacent fields. Mitigation should include monitoring and funding to address these significant project impacts. 44
- Pg ES-11, ES 4.4 – “Transfer water generated by crop shifting is difficult to account for. Farmers generally rotate between several crops to maintain soil quality, so water agencies may not know what type of crop would have been planted in a given year absent a transfer. To calculate water available from crop shifting, agencies would estimate what would have happened absent a transfer using an average water use over a consecutive 5-year baseline period. The change in consumptive use between this baseline water use and the lower water use crop determines the amount of water available for transfer.” Due to the speculative aspects of the determination of true water savings this alternative should be deleted. 45
- Pg ES-12, ES 5 – “The No Action/No Project Alternative considers the potential for changed conditions during the 2015-2024 period when transfers could occur, but because this period is relatively short, the analysis did not identify changes from existing conditions.” Based on this quote from the document, the No Action/No Project baseline is incorrectly defined. The current OCAP Biological Opinions of NMFS and FWS include many Reasonable and Prudent Alternatives and Actions that the CVP and SWP must legally implement during this period. Some of these actions, e.g. bypass flows to inundate floodplain habitat and fish passage, have flow and operational implications that must be included in the No Action/No Project that do not exist (other than current legal obligation) in the Existing Conditions. The EIS/R analysis must be revised to correct for this error in the definitions of the baselines for comparison. 46
- Pg 1-2, 1.1.2 - A project objective identified is, “Develop supplemental water supply for member agencies during times of CVP shortages to meet existing demands. “ New plantings, the maturing of already planted crops, new service connections in M&I areas and increased use of existing service connections are examples of new demand. The analysis is inconsistent with this objective and there are no significant measures to preclude increased reliance on diversions from the Delta. 47
- Pg 1-2, 1.1.2 – “Because shortages are expected due to hydrologic conditions, climatic variability, and regulatory requirements, transfers are needed to meet water demands.” As pointed out in other comments, the regulatory requirements constrain CVP/SWP operations and when CVP/SWP operations are constrained by regulations there is no excess capacity to support water transfers. This component of the project objectives is not satisfied by any of the project alternatives. 48
- Pgs 1-10 & 11, 1.3.1 – “According to the CVPIA Section 3405(a), the following principles must be satisfied for any transfer.”... “Transfer will not adversely affect water supplies for fish and wildlife purposes. “ The impact analysis in the EIR/S identifies several adverse, significant and less than significant proposed project and project alternative impacts to water supplies for fish and wildlife purposes both before and after mitigation. The statute does not limit affects based on significance. The proposed project and its alternatives are in violation of the CVPIA Section 3405(a). 49
- Pg 1-11, 1.3.1.2, – “The biological opinion concluded that continued long term operations of the CVP and SWP, as proposed, were “likely to jeopardize” the continued existence of delta smelt without further flow conditions in the Delta for their protection and the protection of 50

designated delta smelt critical habitat.” As identified in other comments, reverse Old and Middle River flow limitations, X2 and net delta outflow requirements of the FWS OCAP BO RPAs have (theoretically) been implemented, but other required RPAs such as restoration of delta smelt habitat have not been implemented and are obviously not on schedule for compliance. FWS OCAP BO Action 6, “A program to create or restore a minimum of 8,000 acres of intertidal and associated subtidal habitat in the Delta and Suisun Marsh shall be implemented.” “The restoration efforts shall begin within 12 months of signature of this biological opinion and be completed within a 10 year period.” Reclamation and DWR do not appear to have met this requirement in that they have not completed project specific designs for these actions, started project specific EIS/R environmental documents or initiated the permitting or contracting processes to implement this action that is required to be implemented by 2018. Since Reclamation and DWR have failed to implement this RPA, then the species are still in jeopardy and the proposed water transfers would only further exacerbate the conditions that led to the original FWS jeopardy opinion.

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- Pg 1-11, 1.3.1.2, – “The USFWS developed a Reasonable and Prudent Alternative (RPA) aimed at protecting delta smelt, improving and restoring habitat, and monitoring and reporting results.” Reclamation and DWR have not implemented and complied with many of these RPAs and have missed the deadlines for submitting plans, reports, implementations and accomplishing the specific goals of most of the RPAs. Since DWR and Reclamation have not implemented most of the protections that were designed to protect the ESA listed species for jeopardy, the proposed water transfers will only add to and exacerbate the impact of the CVP and SWP operations on those species, which could only result in further jeopardy to these species.

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- Pg 1-11, 1.3.1.2, – “(NOAA Fisheries 2009). This biological opinion concluded that continued long term operations of the CVP and SWP, as proposed, were “likely to jeopardize” the continued existence of Sacramento River winter run Chinook salmon, Central Valley spring run Chinook salmon, Central Valley steelhead, and the southern Distinct Population Segment of North American green sturgeon and were “likely to destroy or adversely modify” designated or proposed critical habitat of these species. NOAA Fisheries also concluded that CVP and SWP operation both “directly altered the hydrodynamics of the Sacramento-San Joaquin River basins and have interacted with other activities affecting the Delta to create an altered environment that adversely influences salmonid and green sturgeon population dynamics.” The biological opinion identified an RPA to address these issues and protect anadromous fish species.” Reclamation and DWR have not implemented and complied with many of these RPAs and have missed the deadlines for submitting plans, reports, implementations and accomplishing the specific goals of most of the RPAs. Since DWR and Reclamation have not implemented most of the protections that were designed to protect the ESA listed species for jeopardy, the proposed water transfers will only add to and exacerbate the impact of the CVP and SWP operations on those species, which could only result in further jeopardy to these species.

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- Pg 1-12, 1.3.1.2, – “The Opinions included the following operational parameters applicable to water transfers: A maximum amount of water transfers is 600,000 AF per year in dry and critical dry years. For all other year types, the maximum transfer amount is up to 360,000 AF.” This EIS/R statement is incorrect with regard to the NMFS BO.

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- Pg 1-12, 1.3.1.2, – “Transfer water will be conveyed through DWR’s Harvey O. Banks (Banks) Pumping Plant or Jones Pumping Plant during July through September unless Reclamation and/or DWR consult with the fisheries agencies.” The operations of the proposed project may not be altered from what is proposed, analyzed and disclosed in this environmental document or the modification of the BOs must be subjected to subsequent piecemealed environmental analysis of altered impacts.

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- Pg 1-12, 1.3.2, – “Several sections of the California Water Code provide the SWRCB with the authority to approve transfers of water involving post-1914 water rights.” Since almost exclusively post-1914 water rights would be transferred under the proposed project, all of the applicable SWRCB and CVRWQCB codes must be disclosed. Reference to and compliance with the applicable Basin Plans must be evaluated in the EIS/EIR.
- Pg 1-12, 1.3.2,, – “Section 1725 defines consumptively used water as “the amount of water which has been consumed through use by evapotranspiration, has percolated underground, or has been otherwise removed from use in the downstream water supply as a result of direct diversion.” Evapotranspiration is defined as “the sum of **evaporation** and **plant transpiration** from the Earth's land and ocean surface to the **atmosphere**. Evaporation accounts for the movement of water to the air from sources such as the **soil**, **canopy interception**, and **waterbodies**.” (Wikipedia) When crops are reported by the universities on their total consumptive use to complete a crop cycle, these water use calculations include the water that is resident in the soil profile at planting from natural precipitation and precipitation that occurs during the crop growth cycle. The EIS/R analysis appears to take credit for saving the entire consumptive use of a crop as estimated by the universities. The project fails to take into account in their water savings calculations that a significant fraction of the water consumption for a crop is not saved by simply not planting the crop. Soil and water surface evaporation from precipitation still occurs even if the crop is not there. A certain amount of precipitation that falls is leached below the soil root zone and is lost to groundwater and that occurs if the crop is planted or not. The proposed project and the EIS/R analysis has made an error in taking credit for water saved for the entire evapotranspiration attributed to a crop when the fallowing of a field (provided it is kept free of vegetation) only saves the crop “transpiration” component of the water consumption attributed to a crop, not the “evaporation” component of water consumption that happens whether the crop is planted or not. The water savings credited for water transfer used by the project for “crop idling” and “crop shifting” are wrong and must be corrected to reflect the continued loss of water through evaporation and natural percolation to groundwater. Even the amount of groundwater substitution actually occurring from foregone surface water diversions is wrong in the EIS/R because of the mistaken project use of the entire evapotranspiration associated with a crop. Only the irrigation component of the crop’s total evapotranspiration reported by the university would be saved by the groundwater conjunctive use. The natural precipitation component of the universities reported crop consumptive use would not be saved by the groundwater substitution and cannot be credited to water savings for water transfers as the EIS/R water accounting has proposed. This significant error in the water savings from crop idling, crop shifting and groundwater conjunctive use distorts the analysis and minimizes the impacts to ground and surface water.
- Pg 1-18, 1.5, – “Alternatives considered in this EIS/EIR only analyze transfers of to CVP contractors that require use of CVP or SWP facilities. SWP contractors may also transfer water originating north of the Delta to areas south of the Delta. The cumulative analysis evaluates potential SWP transfers, but they are not part of the action alternatives for this EIS/EIR.” As a result of this statement and how the alternatives have been formulated and analyzed, no SWP contractor can sell water to the project proponents regardless of whether they use CVP or SWP conveyance to deliver it. Only sales of or from CVP contractors that are delivered through the CVP or SWP to the project proponents are covered by this EIS/R or any agency decisions or permits that are issued based on this EIS/R.

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- Pg 1-18, 1.5, – “Buyers and sellers must prepare transfer proposals for submission to Reclamation. Proposals must also be submitted to DWR if the transfers require use of DWR facilities or the transfers involve a seller with a settlement agreement with DWR.” The EIS/R fails to define what information must be included with the transfer proposal.

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- Pg 1-18, 1.5,– “Reclamation reviews transfer proposals to ensure they are in accordance with NEPA, CVPIA, and California State law.” This statement fails to include that Reclamation must also consider Warren Act Contract requirements when federal facilities are wheeling non-federal water (seller or buyer) through federal facilities. A Warren Act Contract Water Wheeling Assessment is required for any non-federal water from either transfer source or recipient that uses any CVP facility. This would appear to include use of San Luis Reservoir even if only SWP conveyance was used.

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- Pg 1-18, 1.5, – “DWR may also be involved in conveying water for transfers and is interested in verifying that water made available for transfers does not compromise SWP water supplies. For water conveyed through the SWP system, DWR must also determine if the transfer can be made without injuring any legal user of water and without unreasonably affecting fish, wildlife, or other instream beneficial uses and without unreasonably affecting the overall economy or environment of the county from which the water is being transferred.” It should be made clear that DWR will be required to develop and approve a separate environmental document for any water transfers that use SWP facilities. San Luis Reservoir is a joint SWP facility so use of these facilities, even if other SWP facilities or water are not involved, should result in the requirement of a separate environmental document from DWR..

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- Pg 1-18, 1.6, – The EIS/R omitted that if the project proposes to use SWP facilities DWR has decisions it must make. DWR must decide if there is available capacity, if they will conduct the transfer, and they do decide to do the transfer, they must do an EIS/EIR as the SWP transfers are not covered under the proposed project or any of the project alternatives (see EIS/R section 1.5 and the related comment ).

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- Pg 2-4, Table 2-1 – Ag conservation in the Buyer Service Area was inaccurately screened. Some types of ag conservation can be immediate, as an example, crop switching and improvements in irrigation scheduling or irrigation system distribution uniformity. Some ag conservation can be nearly immediate, such as improvements to irrigation systems to more water efficient types, e.g. sub-surface drip instead of flood furrow. Each of these ag conservation examples “provides water” for transfer within the buyer area.

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- Pg 2-4, Table 2-1 – The alternatives considered failed to include: Increase water conservation for municipal and industrial uses in Seller Service Area to reduce water demands. It would have provided immediate and flexible water supplies as the buyer service area alternative concept to this option determined, but also would have provided water.

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- Pg 2-4, Table 2-1 – The determination that reuse of water for ag was not possible for immediate implementation does not appear supportable. This option requires more full investigation for feasibility and consideration in a fair and evenly applied alternatives screening process.

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- Pg 2-4, Table 2-1 – Permanent land retirement could be immediate and provides water. It seems a logical compliment to the other concepts of fallowing and crop switching. Permanently retiring marginal farmland has less of an impact than fallowing productive ground. Permanent retirement of land would allow that land to be restored to wildlife habitat. There is no

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significant habitat value to the fallowed field kept free of vegetation as compared to one that is farmed or one that is permanently retired. Retiring land in the buyer service area is part of the No Action/No Project, including additional permanent land retirement in the buyer area should be part of one of the project alternatives..

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- Pg 2-4, Table 2-1 – Purchasing water entitlements in the Buyer area is as immediate and creates just as much water as the proposed project long term water transfers. This alternative concept must be fully evaluated in the revised EIS/R.

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- Pg 2-4, Table 2-1 – Groundwater substitution should equally apply to the buyer area in the project alternatives.

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- Pg 2-4, Table 2-1 –The characterization that not applying rice decomposition water does not result in saving (providing) water is unsupportable. Approximately 350,000 acres of rice is flooded for rice straw decomposition

(<http://www.arb.ca.gov/cc/capandtrade/protocols/rice/pbcs-12-20-13.pdf>) and this flooding consumes approximately 175,00AF of water. There are several viable alternatives to applying rice decomposition water including rice straw baling and application of inputs to speed rice stubble decomposition. There are commercially available agricultural inputs that are designed to speed crop residue decomposition (<https://www.soiltechcorp.com/product/stubble-digest/>, <http://www.midwestbioman.com/biocat.htm>). Rice straw decomposition loads can be significantly reduced by baling and removing the rice straw

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(<http://calrice.org/pdf/Sustainability+Report.pdf>) and is used for erosion control (water quality benefits), cattle feed and power cogeneration (greenhouse gas emission benefit). The best part about this water conservation option (other than the fact it is immediate, flexible and provides water) is that the impacts are beneficial on the local communities by actually increasing the number of jobs rather than destroying them as crop idling does. This project alternative is too good of an opportunity not to be included as an alternative and must be included in the revised EIS/R.

- Pg 2-4, Table 2-1 –Transfer of water stored in CVP or SWP reservoirs should be considered?

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- Pg 2-4, Table 2-1 –Transfer of water within a buyer area provides water. This alternative and transfers from areas of the State other than upstream of the Delta should be analyzed.

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- Pg 2-4, Table 2-1 –Developing groundwater wells within a buyer service area provides water and implementing them is fairly immediate. This alternative should be analyzed.

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- Pg 2-4, Table 2-1 – The EIS/R must include an alternative that includes continuation of one year transfers.

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- Pg 2-7, 2.3.1, – The No Action/Project should have included the assumption that single year water transfers would still have occurred absent the proposed project. The lack of the implementation of the proposed project or alternatives does not preclude these single year transfers so the project analysis must be revised to correct the current flawed baseline assumption.

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- Pg 2-9, 2.3.2.1, – “A similar case regarding the NOAA Fisheries biological opinion is before the court. If new biological opinions are completed, the new biological opinions or the findings of the NEPA analysis could change the quantity or timing of transfers. If the

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biological opinions alter the timing and quantity of transfers, the Lead Agencies will determine if supplemental environmental documentation is necessary to address any changes in potential impacts.” An alternative for continuing with short term transfers should be included.

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- Pg 2-11, Figure 2-3 – The figure shows water transfers starting approximately May – June (when the lines are diverging), but the FWS OCAP BO only allows transfers from July – September.

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- Pg 2-11, 2.3.2.1, – “The seller could request that Reclamation store the non-CVP water in the CVP reservoir until Delta capacity is available, which would require contractual approval in accordance with the Warren Act of 1911.” This statement indicates, as an example, that PCWA could sell water from its’ reservoir, PCWA would release the water when they needed to into their tributary, Reclamation would release less water from Shasta into the Sacramento River during the PCWA release and make the saved Shasta reservoir water available for transfer for the project later in the season. There are multiple fisheries impacts in both tributaries and downstream of them from these interbasin proposed changes in water operations. These inter-basin operational changes to proposed project impacts include changes to water temperature suitability for coldwater fisheries resulting in adverse modification of critical habitat for ESA species, increased fish mortality and reduced fecundity; altered attraction flows and water temperatures for migrating fish causing straying which in turn increases redd superimposition, prespawn mortality, reduced fecundity, egg mortality and genetic introgression. These are all serious significant impacts to endangered species that the EIS/R failed to identify, evaluate, characterize, quantify, mitigate or disclose. The EIS/R must be revised to include these impact analyses and to rectify these material deficiencies in this document.

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- Pg 2-12, Table 2-3 – The table assumes that the amount of water saved for each crop is the same regardless if the crop is idled or it is shifted to another crop. If the field is shifted to another crop it will consume moisture from the soil profile and any precipitation that occurs even if it is not actively irrigated. The water savings for shifting a crop is not the same as for idling a crop.

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- Pg 2-12, Table 2-3 – The proposed project plan of crop shifting is fatally flawed for its vulnerability to gaming by the sellers. There is nothing in the proposed project to assure that real water savings will be realized by crop shifting.

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- Pg 2-12, 2.3.2.1, – “To calculate water available from crop shifting, agencies would estimate what would have happened absent a transfer using an average water use over a consecutive five-year baseline period.” The proposed project and the EIS/R analysis fail to provide any reasonable assurances that real water savings will occur to offset these proposed transfers..

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- Pg 2-13, 2.3.2.2, - “Modeling analysis indicates that using hydrology from 1970-2003, transfers could occur in 12 of the 33 years.” The project description, analysis and range of permit conditions should be limited to the same type of water years used for the analysis.

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- Pg 2-13, 2.3.2.2, - “Sellers that are not specifically listed in this document may be able to sell water to the buyers as long as: the water that is made available occurs in the same water

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