SOUTH DELTA WATER AGENCY

4255 PACIFIC AVENUE, SUITE 2
STOCKTON, CALIFORNIA 95207
TELEPHONE (209) 956-0150
FAX (209) 956-0154
E-MAIL Jherrlaw@aol.com

May 6, 2011

Mr. Joe Grindstaff, Executive Director
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Re: Third Draft Plan; Comments by South Delta Water Agency

Dear Mr. Grindstaff:

These comments will first address a number of errors, omissions and clarifications contained with the Third Draft Plan ("Draft"), and will then address the issue of salinity in the southern Delta. First with regard to errors, omissions and clarifications.

Page 8, line 25. It is not clear why there is a reference to "moral" issues. It would seem that the problems facing the State and the Delta have enough issues without adding the "morality" of any position to the mix.

Page 9, lines 32 and on. The summary suggests that the loss of habitat due to reclamation of Delta lands is responsible for current fishery declines. However, there is no data I am aware of which indicates that there has been any significant change in habitat acreage over the last 20-30 years; the time in which sharp declines have been occurring.

Page 9-10. In the summary of the changes in the Delta I see no mention of the loss of the Suisun Bay as rearing habitat for many species of concern. The shift from relying on the mixing zone being at/near/in Suisun Bay to farther upstream must be discussed in order for an accurate picture to emerge.

Page 9. The summary fails to mention how the SWP was unable to develop an additional 5 MAF of water from North Coast Rivers. That supply was intended to be added to the Sacramento system by 2000 in order to have sufficient surplus water for some exports. Without

this supply, the SWP is without a water supply in many years. The original planners mapped out how much additional flow was needed in the system before fulfilling export needs. Without the 5 MAF, the "cushion" between amounts sought for export and amounts flowing through the system is over half as small as originally intended. This likely explains the crash of the fisheries. Decreased exports via regulation and court mandates appears to be addressing this lack of cushion; that is to say each time exports have been diminished, the result is to move back towards the originally anticipated relationship between supply and exports. This is important in that the DSC is to address water supply reliability. Before that can be done, there must first be an evaluation of the supply, the needs for higher priority uses, and then the amount available for export. Seeking "reliable supply" before such supply availability calculations are done is a waste of time.

Page 10, line 27 and on. The statement that annual diversions in the Deltas are unknown is grossly misleading. Although diversion amounts are not currently measured or reported, diversions are irrelevant. Any extra, surplus or wasteful diversions have no effect on the supply in the channels or the availability of water for other users. This is because all of the water diverted which but not used by the crops is (almost) immediately returned to the channels either via the subsurface connection of ground water and surface water, or via the drainage return systems which cover the entire area. In recognition of this unique situation, the projects have over the past 40 or 50 years developed modeling which predicts the net consumption of water (via evaporation and evapo-transpiration) in the Delta. The projects use this modeling for near real-time management of the Delta; calculation of X2, outflow, water availability, etc. Hence, at any given moment, DWR can give any party who requests it an estimate of the net amount of water being removed from the system due to in-Delta agriculture. Any other method (measuring diversions) produces unusable information. This is because diversion measurements do not tell us the amount of water being returned via drainage, the amount being returned via ground water, or the amount of water in the drainage which seeped from the ground water into the surface ditches and canals. The statements in the Draft indicate a lack of knowledge regarding the hydraulics in the Delta.

Page 10, line 29-31. This statement is false. All agricultural lands in the Delta are under water quality Coalitions sanctioned and regulated by the Central Valley Water Quality Control Board under its Irrigated Lands Program. That program requires sampling, testing, reporting and remedial actions to address virtually all water quality parameters. If a sample indicates discharges in excess of a water quality parameter or objective, the Coalition is required to develop and implement a plan to address the problem. With regard to the specific obligations to meet water quality objectives adopted by the SWRCB, that agency has, and will continue to have periodic water right hearings whereby it assigns responsibility for meeting such objectives. For example, in D-1641, the SWRCB found that the operation of the CVP was the cause of the salinity problem in the southern Delta and assigned it the responsibility to meet four water

quality objectives (DWR was also assigned responsibility for three of the four). For the Draft to state that in-Delta diverters are not participating in programs to meet water quality standards indicates a lack of understanding of how the system works and what is going on.

Page 11. Line 19 and on. The listed anticipated changes seem biased to say the least. First, the probability of floods from high water "assumes no additional levee improvements." That's like estimating what our roads will look like in 100 years if we assume no repairs. Each reclamation district has a short term maintenance program and a long term improvement program. Why would anyone assume "no additional improvement?" Second, the sea level rise issue encompasses a longer discussion than can be had in these comments. The DSC should be aware of and address (i) the US Army Corps of Engineers comments to the DRMS report, included herewith, (ii) the reasons why two CalFEd scientists critique of the lowered IPCC estimation of sea level rise (23 inches over 100 years) resulted in 55 inches being the goal, (iii) the tide gauge information being provided by CDWA (Alaskan tide gauges show steady decline in sea level), and (iv) why model results showing maximum sea level rise are chosen over model runs showing less rise or showing decline.

Page 12, line 7-10. The DSC must explain what "water supply reliability" means for purposes of the Plan. Does reliability apply to all water needs, or are some given preference? How are the existing water rights priorities (including but not limited to area of origin laws) under current law to be addressed? Does a water user have to mitigate its adverse impacts to others or will it be assured a reliable supply notwithstanding the impacts on third parties? Does "reliable" take into account the lack of developed supply for the projects? Does the DSC seek to protect a certain level of exports notwithstanding the above?

We now turn to the issue of salinity.

The Draft appears to ignore the issue of southern Delta salinity notwithstanding its numerous references of how it will address Delta water quality, protect Delta agriculture, and protect the Delta as a whole. Perhaps the authors are unaware of the conditions in the southern Delta and the causes of those conditions, and thus may develop a plan which ignores these important issues. The southern Delta was not excluded from protection when the laws creating the DSC were enacted. A short listing of the statements in the Draft indicate that Delta water quality protection for all uses, including in-Delta agriculture, is required by the controlling statutes. In addition, the issue of a reliable supply for in-Delta uses is also required.

(6) Improve water quality to protect human health and the environment consistent with achieving water quality objectives in the Delta.

(5) Improve water quality to meet drinking water, agriculture, and ecosystem long term

goals.

(b) Protect and enhance the unique cultural, recreational, and agricultural values ...

... limit new or additional practices ... that ... Further erode water supply reliability or water quality;

The current situation in the southern Delta is as follows. For the past 10-15 years, the USBR has made sufficient releases of fresh water from New Melones on the Stanislaus River to maintain the water quality objective for agricultural beneficial uses at the compliance location of Vernalis. However, the three downstream objectives have been regularly exceeded, with the measurement at the compliance location of Old River at Tracy Blvd. Bridge being regularly exceeded during most summer months. To date, the SWRCB has undertake no actions to enforce these standards. The SWRCB did adopt a Cease and Desist Order against DWR and USBR because of "threatened violations" (ignoring the ongoing, actual violations). The CDO required the projects to "obviate" the threat to violations (not address or cease current, ongoing violations), but later extended the deadline. Exports and other project operations have remained unaffected by the CDO even though certain exports should have been precluded during times when the violations occurred. Given the authorizing statutes, it should be the goal of the DSC's Plan to improve the water quality in the southern Delta channels, especially since the quality regularly exceeds the standards.

The history/cause of the southern Delta salinity problems is instructive. The operation of the CVP results in the export of between 600,000 - 1,000,000 tons of salt from the Delta to the CVP service area in the San Joaquin Valley. Some of the water carrying this salt is used by the agricultural crops being grown in the area. This concentrates the salts in the remaining water. Some of this water reaches the San Joaquin River (either via subsurface or surface drainage) where it enters that channel in concentrations which are many times the maximum levels in the standards. The result is that the San Joaquin river is very salty; receiving 400,000 - 600,000 tons of salt annually from the CVP. The salts are diluted as fresher tributary water enters the sytem at certain points.

It should be noted that even when the San Joaquin River water has been diluted by releases from New Melones to meet the current standards, it is still saltier than the river ever was prior to the CVP operations. The historical data clearly shows a "clean" river before CVP, though one which slowly was being degraded as upstream development increased.

The CVP also (generally) separated the upper San Joaquin from the lower reaches by diverting and transporting most of the River's flow to other areas. Thus, in addition to the saltier water, the CVP also decreased the flow and assimilative capacity of the River. This decrease of

downstream flow did not take into account any downstream water right holders (except those in the upper reaches) and thus has adversely impacted Delta water right holders.

In addition to these adverse impacts, the operation of the SWP and CVP pumps significantly lower southern Delta water levels as they draw water for export. These lowered levels sometimes prevent local diversions from operating, and if not mitigated, would preclude much of the local diversions during many spring and most summer months. The partial mitigation of these lowered water levels is the temporary barrier program, which each year installs rock barriers at three locations. The barriers trap and hold the incoming tide to maintain sufficient height to allow local diversions to occur. However, even with the barriers (and during times when they are not in or not allowed to operate) some parties still cannot adequately divert water.

Originally it was thought that the barriers would also improve local water quality, but those expectations proved unfounded. It is correct that the barriers trap the fresher Sacramento flow being drawn to the export pumps and thus dilute to some extent the saltier San Joaquin River water, but as we have discussed, this is insufficient to adequately dilute that polluted stream. Absent the CVP and the export pumps bringing in the fresher Sacramento water, the southern Delta would be receiving a much fresher San Joaquin flow. Hence, although the exports help bring in fresher water, that benefit does not mitigate the adverse impacts being visited on southern Delta interests.

The export pumps also reverse the flows in some channels, and in combination with the barriers, create and exacerbate "null zones" in the area. A null zone is a channel stretch where water enters it from both directions such that there is no net flow in either direction. In these zones, salts (and numerous other constituents) collect and concentrate, thus explaining to a large degree the regular violations of salinity standards. Without net flows, water quality cannot be controlled. The result is that local diverters who are supposed to be protected by standards end up having to divert water which is of a quality twice (or more) that of the standard.

Where does all this salt go? The only study that has been done indicates that the lands of the southern Delta act as a salt sump during the lower flow times (especially summer and fall) by holding much of the salt in the soil profile or in the shallow ground water (which is directly connected to the channel water). These salts are sometimes "flushed out" when higher flows in the channels provide enough "push" to move some of the shallow ground water downstream. However, one must keep in mind that high flows on the San Joaquin are not common; sometimes the highest winter flows do not exceed 3-4000 cfs; hardly sufficient to move much of the shallow ground water. It is not commonly understood that the San Joaquin flow is rarely enough to escape the export pumps and thus the River is disconnected from the Bay. This condition obviously affects the fisheries also.

The salts that are in the channels (generally) only exit the system in one way; via the export pumps. During virtually all summers, none of the San Joaquin reaches the Bay, only exported water leaves the area. Hence, the projects are the sole means by which the salts they caused to enter (and stay) in the southern Delta leave the area. It has been a 40+ year struggle/battle for the southern Delta interests to try to get the projects to stop harming them and to have the regulators cease sanctioning the ongoing harm.

The DSC Plan contemplates an isolated conveyance system. By definition, this would decrease (or sometimes end) exports from the current CVP and SWP pumps. If the export pumps take less water from the channels of the southern Delta, they would naturally take less of the salts from the southern Delta. If you take less of the salts out of the area, the concentration of the salts will increase. Increased concentrations in an area where standards are regularly exceeded will result in worse exceedences. The result is that any isolated facility would salt up the southern Delta to the point where local agriculture could not survive. Contrary to the odd statements by many "scientists" there are no "salt tolerate crops" which could be grown in the southern Delta by using stagnant, salty water. Some have even suggested agriculture could use water of a quality of sea water, exemplifying the degree to which some contributors lack knowledge.

DWR representatives have periodically noted that "preliminary modeling" indicates only small and thus insignificant affects on southern Delta salinity resulting from an isolated facility. Such statements equate to those about using sea water for irrigation; they are false. Any honest investigation of the magnitude of the effects from removing less salt from the area will show that Delta agriculture could not survive if an isolated facility were used. There are not two sides to this discussion; salt in; salt out. Its physics, not argument.

We look forward to providing additional information and documents in coordination with the Central Delta Water Agency. We of course join in their comments regarding the proposal to limit land use practices in areas where future flood control of habitat needs may arise. Such a taking would never survive a legal challenge.

Please feel free to contact me if you have any questions.

Very truly yours,

JOHN HERRICK

Enclosures

EXTRACTS OF USACE MAY 23, 2007 COMMENTS

The assumption that the 23 large watershed's 100-year flows can be added together to produce the 100-year Delta flow is invalid.

The assumption that failures in a levee system will not significantly reduce stage elevations along channel is questionable.

Annual mean number for seismic levee failures is 3.41 . . . . 341 failures per 100 years which is 341 more than observed in the past 100+ years . . . . Surely, these numbers cannot be credible results.

The average of 7.35 flood failures per year is three times the (undocumented) 2.60 number and nearly 6 times the observed flood failure rate from 1950 to 2006. Thus, as with the seismic failure number above, this flood number simply appears way outside the bounds of credibility.

Return periods of 2.7 or 5 years for many levees just seem incorrect and incompatible with decades of recent data.

Overall, the seismic fragilities simply appear unrealistic - with far too many breaks to be credible.

Figure 6-40 implies that for a M 7.5 event this type of levee has a 10% chance of displacing 10 ft. at all PGAs > 0.10. This seems Really Extreme.

Conclusion that 40% of historical failures (2.6) are from through seepage results in over 1.0 per year is different than historical rate and needs to be explained.

At first glance, the calculated annual number of failures is, to be polite, "extraordinary" albeit not as extreme as the seismic results above.

The estimated 30 or more island breaches in the next 25 years due to flood events seem too high/pessimistic.

The BAU assumption that levee crest elevations will not be raised in response to increased tidal and flood elevations is not realistic.
1 ft easy, 3 ft maybe doable for 100 years of effort.