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BEFORE THE  
STATE WATER RESOURCES CONTROL BOARD

PERIODIC REVIEW OF THE 1995  
WATER QUALITY CONTROL PLAN  
FOR THE SAN FRANCISCO BAY/  
SACRAMENTO-SAN JOAQUIN DELTA  
ESTUARY

**CLOSING MEMORANDUM ON  
FLEXING**

**I. INTRODUCTION**

The San Luis & Delta-Mendota Water Authority, State Water Contractors, and Kern County Water Agency (Export Water Users) present this closing memorandum for the workshop held on August 31, 2005. This memorandum summarizes the presentation by the Export Water Users and responds to comments of other workshop participants.

**II. THE PROPOSAL FOR A FLEX PROCESS**

The Export Water Users seek three types of actions by the State Water Resources Control Board (SWRCB or State Water Board).

1           The first action seeks a change to the outflow objective to address over-compliance –  
2 meeting the outflow objective more days in a particular month than required in the 1995 Water  
3 Quality Control Plan (1995 WQCP). The change would recognize the difficulties inherent in  
4 operating to meet the X2 outflow objective and not treat minor under-compliance in any month as  
5 a violation of the objective as long as the under-compliance is made up the following month. See  
6 SLDM-EXH-15C.

7           The second action seeks (a) continued flexibility of the export objective, (b) authority to  
8 flex the outflow objective, and (c) authority to flex the Rio Vista objective. See SLDM-EXH-  
9 15A; SLMD-EXH-15B.

10           The third action seeks to have the State Water Board impose a process the agencies  
11 responsible for management of fishery and wildlife resources – United States Fish and Wildlife  
12 Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Department  
13 of Fish and Game (DFG) (collectively, the Management Agencies) – and the agencies responsible  
14 for operation of the Central Valley Project and State Water Project – United States Bureau of  
15 Reclamation (Reclamation), and the California Department of Water Resources (DWR)  
16 (collectively, the Project Agencies) – would follow when considering a proposal to flex either the  
17 outflow, export, or Rio Vista objective. See SLDM-EXH-15D (as amended).

18           **A.     Over-Compliance**

19           The flex games carried out by the parties disclosed just how difficult it is to precisely  
20 operate to meet the X2 outflow objective. X2 was recommended for use as a fishery protection  
21 objective based on *multi-month averages* that appeared to be correlated with fishery population  
22 indices. In spite of the fact that the correlations are based on multi-month data, for convenience  
23 of implementation, X2 compliance (or non-compliance) is determined on a calendar month basis.  
24 The location of X2 on the last day of the current month, combined with the current months  
25 hydrology, determines how many days during the following month X2 must be maintained at a  
26 given location.

27           Reclamation and DWR must then try to analyze future weather conditions, tides, winds,  
28 etc., and determine how best to meet the X2 obligation over the next calendar month. In many

1 years X2 will be met with excess natural flows; but in years when stored water releases may also  
2 be needed, the decisions become more difficult. Should the CVP/SWP immediately begin  
3 releasing previously stored water? Should they rely on weather forecasts and trends that indicate  
4 that the objective may be met with excess natural flows later in the month?

5 Prudent water management in the winter months with normally high precipitation would  
6 seem to call for husbanding stored water resources and relying as much as possible on natural  
7 flows associated with rainfall events. However, the result of misguessing can be a violation of  
8 the CVP and SWP water rights terms and conditions. Therefore, the CVP and SWP operate very  
9 conservatively, and, as a result and at a cost of may thousands of acre-feet of stored water, often  
10 over-comply with the X2 objective at times when it cannot be made up in the subsequent month.

11 The Export Water Users are proposing a modified definition of what constitutes monthly  
12 compliance that will allow the CVP and SWP to plan X2 operations in a manner that aims at  
13 precise compliance with the objective. This can be accomplished by the simple act of providing a  
14 compliance buffer that states that monthly compliance can occur within the month or within three  
15 to five days after the end of the month. The Export Water Users suggest that the State Water  
16 Board staff consult with the CVP/SWP operators to determine what minimum number of days  
17 would provide an appropriate buffer.

18 **B. Flexing**

19 The 1995 Bay-Delta Plan established the concept that water quality objectives should be  
20 allowed to flex when such an action can be carried out without significantly affecting the  
21 beneficial use the objective was designed to protect. However, in 1995, this decision was only  
22 applied to the export limit objective (although in limited circumstances the outflow objective may  
23 also be relaxed).

24 Ten years later, the Export Water Users believe the time has come to add the X2 outflow  
25 objective and the Rio Vista flow objective to the list of objective for which flexes can be  
26 considered. For X2, in particular, the reservoir releases required in 2003 and 2004 absolutely  
27 demonstrate that a process needs to be in place to, at least, consider whether stored water releases  
28 of that magnitude are warranted given the resulting impacts on downstream flows, cold water

1 pools, and water badly needed to support the California economy. No one can or should try to  
2 predict how those deliberations would turn out, but the structure needs to be in place to allow  
3 them to occur.

4 **C. The Process**

5 The Export Water Users have provided the State Water Board with a decision tree that  
6 establishes reasonable sideboard and creates a science-based process for considering flexes. The  
7 process would be carried out as follows:

8 1. The Management and Project Agencies (collectively the "Agencies") shall meet to  
9 determine whether a variation or flex of the outflow, export, or Rio Vista objective should  
10 be considered:

- 11 A. Immediately before the relevant objective begins controlling Delta operations, and  
12 B. If, during the time a particular objective is controlling Delta operations, there is a  
13 change in the fishery or hydrologic conditions that existed at the time the objective  
14 became controlling.

15 Full consideration of a flex will be initiated if, during any such consultation, any one of  
16 the Agencies requests it.

17 2. When full consideration is initiated, the Agencies shall:

- 18 A. Develop an alternative or alternatives for how the objective could flex ("Action  
19 Alternative(s)").  
20 B. Consider for each Action Alternative how the water that would otherwise be  
21 necessary to meet the objective ("saved water") would be subsequently used.  
22 Saved water shall revert to the CVP and SWP for authorized uses, unless the  
23 Management Agencies can provide a scientific basis showing a need by fish and/or  
24 wildlife for additional water, in which case no more than 50 percent of the saved  
25 water can be used for that (those) purpose(s).  
26 C. In determining how saved water will be used, provide for multiple use of the saved  
27 water whenever possible.  
28 D. Provide science-based evaluations of a "no action" alternative and each Action  
Alternative developed, including: (i) quantified estimates of population level  
effects on fishery resources, (ii) quantitative estimates of effects on water supply  
and water quality, and (iii) quantified estimates of uncertainty for both population  
level, water supply, and water quality effects.  
E. Not propose an Action Alternative that:  
i. During the February through June period (other than during a VAMP  
flow/pumping restriction), and for the export objective, would cause an  
increase in the E/I ratio of more than ten percent (i.e., 35% to 45%).  
ii. During the VAMP 31-day pulse period, and for export objective, would  
cause pumping to exceed 200% of 3-day running average of San Joaquin  
River flow at Vernalis.  
iii. During the July through January period and for the export objective, would  
cause an increase in the E/I ratio of more than ten percent (i.e., 65% to

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- 75%).
- iv. For the outflow objective, would (a) occur when the Port Chicago standard is not triggered, (b) cause Delta outflow to fall below 20,000 cfs, or (c) cause the February through June average location of X2 to move more than one kilometer further upstream from the Golden Gate Bridge.
- v. For the Rio Vista objective, would cause the minimum monthly average flow rate to be reduced by more than 1,000 cfs.
- vi. For any objective, would impair the ability of Reclamation or DWR to meet their respective contractual obligations.
- vii. For any objective, would cause a significant adverse environmental effect.

3. If the Agencies agree on a single Action Alternative, the Agencies shall immediately notify the Executive Officer of the SWRCB of the decision. The Agencies shall, within 24 hours of reaching the decision, provide the Executive Officer with a written description of the Action Alternative and the reason for the decision. The Agencies may begin implementing the Action Alternative 24 hours after the Agencies notified the Executive Officer. If the Executive Officer does not object to the decision within 5 days, the decision by the Agencies will remain in effect. If the Action Alternative is implemented 24 hours after the Agencies provided the Executive Officer notice, but the Executive Officer objects to the decision within the 5-day period, the SWRCB shall consider the CVP and SWP in compliance with the objective during any under-compliance that results directly or indirectly from implementing the Action Alternative.

4. On or before January 1 of each year, the Agencies shall prepare and transmit to the Executive Officer of the SWRCB a report summarizing flexing activities, accounting for the changed water use, describing how the saved water was allocated among beneficial uses, and estimating the effects on beneficial uses of flexing over the course of the prior year, consistent with the requirements under paragraph 2.<sup>1</sup> The report shall provide the information required under paragraph 2 for each occasion when full consideration of a flex was initiated, whether or not the Agencies agreed on an Action Alternative. For instances when full consideration of a flex was initiated but agreement not reached, a majority and a minority report may be included in the report. As soon as possible, the Executive Officer shall make the report available for public review.

5. The Agencies shall include one SWRCB staff member who may participate in, but not vote on, all deliberations required to reach a decision on an Action Alternative. The funding for this staff member shall be provided by the Agencies. The staff member shall:

- A. Participate in all actions required under paragraphs 2 and 4.
- B. Assist the Executive Officer of the SWRCB in determining whether or not to object to an Action Alternative.
- C. Assist in developing and amendments or supplements to this Decision Tree.

**III. RESPONSE TO COMMENTS**

Generally, the comments made that recommend no change to the 1995 WQCP to address

<sup>1</sup> The Export Water Users would also support a requirement that the Agencies provide the State Water Board with a report after each flex consideration.

1 flexibility fall within three categories. They request no change because of: (1) concerns with the  
2 decline in pelagic organisms; (2) a belief that there is no need for flexibility, and (3) a belief that  
3 technical information shows significant effects of a flex on fish and wildlife. As is shown below,  
4 none of those comments provide any justification for the State Water Board to reject a flex  
5 process.

6 **A. The Decline In Pelagic Organisms In Fact Supports The Flex Process**

7 Through written comments, the Water Operations Management Team, in WOMT-EXH-  
8 02, and the NMFS, in NOAA-EXH-18, asked the State Water Board to delay developing a flex  
9 process at this time because of the recent decline in pelagic organisms. Representatives from the  
10 Management Agencies presented oral comments at the workshop, expressing the same concern.  
11 As suggested by the questions of Chairman Baggett during the workshop, those concerns simply  
12 make no sense when considering the proposal by the Export Water Users.

13 As the Export Water Users have stated repeatedly, the proposal before the State Water  
14 Board, if adopted, would not command any change in the objectives. It would only provide the  
15 Agencies the ability to propose a flex and, more important, to provide any one of the Agencies the  
16 power to preclude any such proposal. They will, however, have to explain to the State Water  
17 Board and the public why they acted as they did.

18 Ironically, USFWS, less than one year ago, made presentations that explained a process it  
19 adopted during ESA consultations, which is almost identical to that which the Export Water Users  
20 advance in this forum. Those presentations, made as part of CalFed's 2004 EWA Technical  
21 Review Panel Meeting Presentations and 2004 EWA Technical Workshop Presentations, are  
22 respectively entitled "Interface Of Policy And Science: The Evolving Dynamic Between  
23 Prescriptive Standards And Flexible Tools" and "An Introduction To The Delta Smelt Risk  
24 Assessment Matrix."<sup>2</sup> The presentations explained a change in approach from the 1995 Delta  
25 smelt biological opinion to the 2004 biological opinion on CVP/SWP operations. The change  
26 abandoned the prescriptive approach contained in the 1995 opinion and adopted, in its place, the

27 <sup>2</sup> Copies of the presentations are attached hereto as Exhibits A and B, but are also found at  
28 [http://science.calwater.ca.gov/workshop/ewa\\_presentations.shtml#tech\\_04](http://science.calwater.ca.gov/workshop/ewa_presentations.shtml#tech_04).

1 "Delta Smelt Risk Assessment Matrix" – a new decision process to be "[b]ased on latest  
2 knowledge of smelt", "developed using an iterative, consensus process", that "codified [a]  
3 flexible . . . approach." Interface Of Policy And Science at slide 10.

4 Just a cursory review of these presentations shows that the Delta Smelt Risk Assessment  
5 Matrix provides a flexible process, very similar to that which the Export Water Users propose in  
6 their Decision Tree. Both are presumably premised on science-based guidelines or sideboards;  
7 both call for an iterative process; both are flexible, allowing for changes in the process without  
8 changing the underlying document, both are intended to provide opportunities to improve water  
9 supply reliability. Presumably, a process that is good for delta smelt when considering the  
10 impacts of CVP and SWP operations on ESA listed species should be good enough when  
11 considering how to best implement water quality objectives.

12 **B. Significant Information Supports The Potential Need For Flexibility**

13 The Bay Institute claimed during the workshop that there is no demonstrated need or  
14 biological basis that justifies flexibility. Neither statement is true. The need for flexibility is  
15 clear and strong.

16 1. Fish Issues

17 The January 2005 report entitled "Impacts on Lower American River Salmonids and  
18 Recommendations Associated with Folsom Reservoir Operations to Meet Delta Water Quality  
19 Objectives and Demands" ("Impacts Report"), WF-EXH-01, documents actual and predicts  
20 potential impacts on fish from releases of water to meet water quality objectives.

21 For example, the Impacts Report explains that changes in flow rates and water levels in  
22 rivers can adversely impact salmonids. In particular, rapid reductions in flow rates and water  
23 levels after releases can impact salmonid embryos in redds by dewatering and/or isolating those  
24 redds. WF-EXH-01 at 3. Those same flow reductions can also trap juvenile salmonids in  
25 isolated pools of water, which no longer connect to the main river, and strand them on dewatered  
26 gravel bars. *Id.* Indeed, releases in February 2003 were reported to have caused in the American  
27 River dewatering and isolation of steelhead redds, and stranding of up to 10,000 Chinook salmon  
28 fry. *Id.* at 11. Also releases beginning in April 2004 were reported to have caused in the

1 American River the isolation of juvenile Chinook salmon and steelhead. *Id.* at 13.

2 At times, releases to meet Delta water quality objectives also raise concerns because of the  
3 potential reduced "water available for instream flows during the Chinook salmon adult  
4 immigration and spawning period (September through December)," *id.* at 4, and quantity of cold  
5 water in reservoirs, which reduces the ability to manage water temperatures to benefit the  
6 fisheries. *Id.* The Impact Report indicates that these factors may have contributed in 2001 to the  
7 approximately 67 percent pre-spawning mortality rate for fall-run Chinook salmon in the  
8 American River. *Id.* at 7.

9 The impacts to fish caused by the water quality objectives have been recognized by more  
10 than just the Water Forum. For example, the Sacramento Bee published articles on the impacts to  
11 fish caused in 2003 by the operations of the CVP to meet Delta water quality objectives. In  
12 particular, one article notes:

13 Last month, the Bureau of Reclamation increased flows in the American River  
14 from 3,500 to 5,500 cubic feet per second. Bureau officials say the extra flows  
15 prevented saltwater from creeping up the Delta and violating standards set in the  
Bay-Delta Accord, a state-federal pact for restoring the Delta.

16 "Water Conservation Efforts in Sacramento, Calif., Area Kill Thousands of Fish", dated March 5,  
17 2003, a copy of which is attached as Exhibit C.

18 Another article explains that as a result of the operation to meet the water quality  
19 objective:

20 [The higher flows] flooded gravel bars along the American River that became  
21 habitat for spawning steelhead trout, an endangered species. The fish laid their  
eggs in the gravel, only to have the river recede a few weeks later.

22 "Federal Officials Revisit Sacramento, Calif.-Area Habitat Protections", dated March 6, 2003, a  
23 copy of which is attached as Exhibit D. The article provides further:

24 The deaths of thousands of young fish in the American River are prompting some  
25 environmentalists and federal officials to rethink water allocations that favor  
habitat in the Sacramento-San Joaquin Delta over tributaries upstream.

26 *Id.*

27 Indeed, even The Bay Institute acknowledged these potential effects in papers filed with  
28



1 the State Water Board, providing, in part:

2 Flow fluctuations as a result of these releases have the potential to dewater and  
3 isolate salmon redds; strand fry; isolate juveniles; and deplete cold water pool  
4 storage. In both of these years [2003, 2004] some adverse impacts were observed.

5 BAY-EXH-04 at p. 11.

6 The State Water Board itself has also recognized the potential impacts in "Staff Report,  
7 Periodic Review Of The 1995 Water Quality Control Plan For The San Francisco  
8 Bay/Sacramento San Joaquin Delta Estuary", adopted by the State Water Board in Resolution  
9 2004 - 0062. The Report states:

10 [I]n some years, releasing water for Delta outflow can increase river stages such  
11 that spawning salmonids, especially steelhead trout, utilize spawning gravels in  
12 areas that are only temporarily inundated. When the Delta outflow release ends,  
13 river stages are reduced, redds may be dewatered and fry can be stranded. These  
14 parties suggest that an adaptive management system may be helpful in avoiding  
15 this kind of situation, and would be possible if the objectives were modified to  
16 allow more flexibility.

17 Report at p. 44.

## 18 2. Water Supply Issues

19 The comments of The Bay Institute also ignore the broader public interests the State  
20 Water Board must consider. The Bay Institute assumes that the only interest of the State Water  
21 Board is fish and wildlife. That is obviously not true. The State Water Board must set objectives  
22 "to attain the goal of the highest water quality which is reasonable, considering all demands being  
23 made and to be made on those waters and the total value involved, beneficial and detrimental,  
24 economic and social, tangible and intangible." 1995 WQCP at 3-4.

25 That principle applies to implementation of existing objectives as well. When looking at  
26 all of the uses of Delta water, it becomes clear that in addition to providing water for broader fish  
27 and wildlife needs, flexibility is a tool that could be used to address existing unmet water needs  
28 for other beneficial uses. For example, Bulletin 160-98 predicts that by 2020, the average water  
shortage for irrigation, municipal, industrial and environmental uses will be 2,400,000 acre-feet.  
Bulletin 160-98 at Appendix 1A. That shortfall is expected to be even greater in dryer years. If  
the existing objectives can be implemented more flexibly to achieve similar results while saving

1 water for other purposes, the State Board is authorized, if not obligated, to provide that flexibility.  
2 Water Code §§ 13000, 13241. The flexing process advanced by the Export Water Users can  
3 provide a mechanism that allows demands being made and to be made on Delta water to be better  
4 met, while still maintaining a high level of protection for fish and water quality. In fact, as the  
5 gaming demonstrated, at times, flexing of objectives could "save" significant amounts of water,  
6 with relatively minimal, if any, adverse impact to the beneficial uses of Delta water; saved water  
7 that could be available to the CVP and SWP for their authorized purposes as well as for other  
8 fishery needs.

### 9 3. Riskier Operations Is Not The Solution

10 The sections above demonstrate that there is a need to address issues raised by the  
11 outflow, export and Rio Vista objectives. The true difference of opinion thus lies in how the  
12 issues should be addressed. The Export Water Users seek to provide the Management and Project  
13 Agencies with a tool that will allow flexes to be considered because they believe flexibility can in  
14 many circumstances enhance protection of the totality of the beneficial uses of Delta water. The  
15 information presented by the Export Water Users supports the conclusion that all uses of water  
16 will ultimately benefit from flexibility.

17 Others apparently believe that the benefits provided by flexing should be accomplished by  
18 different, more risky CVP and SWP operations. *See, e.g.,* The Bay Institute June 3, 2005 Letter,  
19 Appendix C: "Alternative water management strategies (e.g., earlier increases in releases to  
20 maintain compliance via EC) could have avoided the extreme flow fluctuations and upstream  
21 impacts....").

22 In responding to these types of claims one needs to keep in mind that the X2 standard is  
23 different than all other D-1641 requirements. The very large flows required to meet the X2  
24 objective at Port Chicago, combined with the difficulty of predicting salinity responses to  
25 hydrologic changes so far down the estuary, can force the CVP/SWP operators to make large  
26 changes in either releases or export rates at a time when background conditions are also changing  
27 rapidly. Since the Port Chicago X2 compliance can require such a large amount of CVP/SWP  
28 water, the operators naturally want to respond in as efficient a manner as possible. They not only

1 have a need to meet the objective, but also to meet it in a manner that does not cause an  
2 unacceptable risk to meeting other project purposes.

3 The Export Water Users have reviewed the operations of the CVP/SWP and the  
4 compliance actions they took the last two years in order to comply with Port Chicago X2 and  
5 believe that the actions taken were appropriate and represented the best operations possible given  
6 the circumstances at the time. Therefore, the Export Water Users take strong exception to the  
7 Bay Institutes comments.

8 The major problem with The Bay Institutes position is that it is premised on the false  
9 notion that the CVP/SWP operators have the luxury of operating in hindsight. Obviously, they do  
10 not. They only know what has happened, not what will happen tomorrow, next week, or next  
11 month. While they have forecasts of what might happen as far as the weather, river flows, and  
12 water quality conditions, etc., those factors obviously vary widely during the period of concern.  
13 Contrary to what The Bay Institute suggests, CVP/SWP operators cannot wait to see how the  
14 month turns out and then go back in time and tweak their operations only the minimum amount to  
15 comply with the objective, nor can they look ahead a week or two to see that the electric  
16 conductivity is going to be at a given location, and then retroactively make operational changes to  
17 releases.

18 The Bay Institute also suggests that if the CVP/SWP operators would only make decisions  
19 sooner, they could avoid upstream impacts. Since the upstream reservoirs that would be required  
20 to make earlier changes are 3-5 days (travel time for water) away from the Delta, the CVP/SWP  
21 operators once again have to be able to see into the future in order to have the correct amount of  
22 water reach the Delta in a timely fashion. Not only is such a precise operation not possible  
23 because of the inability to foresee the future, but The Bay Institute is proposing a type of  
24 operation that will more often than not waste water, since the further into the future the  
25 CVP/SWP operators need to try to predict operational conditions the more uncertain conditions  
26 become.<sup>3</sup> In other words, because of the uncertainties in future hydrology, the "Monday morning

27 <sup>3</sup> The Bay Institute also states: "In 2002, use of the Port Chicago EC trigger eliminated high  
28 flows in all four months specified by the PMI." They also state that this was the year that many  
pelagic fish species declined and so it insinuates that if Port Chicago X2 would have been further

1 quarterbacking” The Bay Institute has done cannot apply to real-time decision making, unless  
2 significant risk were place on water supplies; water supplies available for all authorized uses.

3 C. A General Belief That Technical Information Shows Significant Effects Of A  
4 Flex On Fish And Wildlife Provides No Support For A Rejection Of The Flex  
5 Process

6 The Bay Institute spent a great deal of time during the workshop presenting its assertion  
7 that flexibility will adversely impact fish and wildlife. Its presentation suggested that if the State  
8 Water Board were to accept the proposal by the Export Water Users, there will be reductions in  
9 longfin smelt, Bay shrimp, and Pacific herring of 20%, 10%, and 8%, respectively. BAY-EXH-  
10 15. The State Water Board should treat this as the red herring that it is. The suggestion by The  
11 Bay Institute simply ignores the substance of the Export Water Users’ proposal.

12 Although stated numerous times, the central purpose of the proposal obviously bears  
13 repeating: to introduce a process for considering flexes, not to mandate a flex. The process is not  
14 predisposed to a particular outcome. In fact, the process explicitly allows, as an initial protection,  
15 any Agency to veto a proposed flex action, for any reason. As an additional layer of protection,  
16 the State Water Board can veto any flex action approved by the Agencies. If those protections  
17 were not sufficient, there are other important protections, inherent in the process – the sideboards.  
18 The Bay Institute references one – the 1-kilometer limit on a change to the location of X2, but  
19 that is not the only parameter. Additional constraints on the flex actions that are proposed  
20 include:

- 21 • The general environmental protection that precludes any alternative that  
22 would cause a significant adverse environmental effect.
- 23 • The general water quality protection that precludes any alternative that  
24 causes Delta outflow to fall below 20,000 cfs,
- 25 • The general water supply protection that precludes any alternative that  
26 would impair the ability of Reclamation or DWR to meet their respective  
27 contractual obligations.

28 downstream that this decline would not have occurred. CVP/SWP operational experts employed  
by the Export Water Users estimated, based on the graphs displayed in The Bay Institute’s  
presentation, that maintaining X2 at Port Chicago for the specified days would have cost about  
1,500,000 acre-feet of water.

1 In other words, the Export Water Users would not expect a flex to be approved that impacted a  
2 species' population index by such large numbers unless an overwhelming need existed elsewhere  
3 for the water saved and it could be shown that such a one time impact would not have a  
4 significant impact on the species. The Bay Institutes argument ignores all the sideboards and  
5 other protections that are built into the flexing process.

6 1. The Letter From The United States Environmental Protection Agency Adds  
7 Nothing

8 The letter by the United States Environmental Protection Agency (EPA) refers to the X2  
9 standard as a "broad ecosystem standard." The Export Water Users agree that X2 has been so  
10 characterized. However, the sole justification for this characterization is the abundance-X2  
11 relationships for several estuarine species, some adults and some at lower life stages. Without  
12 these relationships, the characterization would be baseless. More important, the "broad  
13 ecosystem effects" cannot be separated from the X2-abundance relationships. It is not, as EPA  
14 and others have asserted, that there are the X2-abundance relationships and "broad ecosystem  
15 effects." The former is the only evidence of the latter. Thus, the evidence is that the X2-  
16 abundance relationships make it possible to quantify effects.

17 EPA also asserts that the "structure" of the X2 standard "does not lend itself to real time  
18 manipulation." EPA implies that there is a cause and effect relationship between the structure of  
19 the objective and the inadvisability of real time manipulation. No basis for this assertion is  
20 provided. It also makes no sense. Substantial real time manipulation of outflows, involving  
21 hundreds of thousands of acre-feet of stored water, is an all too common means of compliance  
22 with the objective. Indeed, historical data on abundance in combination with real time data on  
23 flows and reservoir storage can be used to evaluate real time decisions about flexing X2. Real  
24 time data could also be made available for upstream effects. EPA's position is also undermined  
25 by the fact that it readily uses the abundance-X2 relationships to justify the X2 standard and to  
26 argue that it is, by virtue of those relationships, a "broad ecosystem standard." It is thus  
27 surprising, EPA is now unwilling to acknowledge that these relationships can be used to estimate  
28 the abundance effects of changes in Delta outflow.

1 EPA argues further that the recent decline in pelagic species (actually, a few pelagic  
2 species) makes it "inadvisable to trade lower protection of the in-Delta aquatic ecosystem  
3 (targeted by the X2 standard) for higher protection of relatively healthier migrating salmonids  
4 upstream." First, if there is a problem with pelagic fish in the Delta and if the cause(s) of this  
5 problem is unknown, it is logical to provide the greatest flexibility to respond to whatever causes  
6 might be identified. For example, less Delta outflow (higher X2) might be desirable to manage  
7 an alien species sensitive to salinity. It might turn out to be desirable to save water in upstream  
8 reservoirs to offset export curtailments necessary to reduce delta smelt entrainment. In addition,  
9 it is possible that the decline in pelagic fish abundance might cause the abundance-X2  
10 relationships, that are the basis for the X2 standard, to break down. This would render the X2  
11 standard as baseless and might give rise to the need for flexibility in how that standard is applied.

12 As noted above, EPA and others assert that "advocates of X2 flexing have not defined a  
13 clear problem that requires this additional flexibility in system regulation." However, in addition  
14 to the information presented above, modeling shows that when the potential effects of flexing are  
15 quantified, they often turn out to be so small as to be undetectable, especially when Delta outflow  
16 is relatively high. It is in part for that reason, the Export Water Users recommend a flex process  
17 be put in place for the outflow objective. Maybe EPA views the release of 250,000 acre-feet of  
18 water from upstream reservoirs to achieve a 4% (with uncertainty in the range of 1-2%) increase  
19 in longfin smelt abundance (and even less effect on other adult species) as not a problem since it  
20 does not have the State Water Board's responsibility for balancing California's water needs.  
21 Water Code § 13000. However, releases with such relatively small effects on unlisted species  
22 could be a matter of serious concern to the State Water Board.

23 In sum, it is most ironic that EPA bases its support for the X2 standard on the statistically  
24 significant relationships of abundance of selected estuarine species with months-long averages of  
25 X2, but now argues against flexing by saying that those same relationships cannot be used to  
26 evaluate how abundance changes with changes in average X2. Quite simply, EPA's positions  
27 cannot be reconciled. The assertions made by EPA seem to arise from a dogged adherence to  
28 rigid and perhaps counter-productive implementation of the X2 standard as is, without regard to

1 reason, logic, or the additional information that has been developed since the standard was first  
2 implemented.

3 **IV. CONCLUSION**

4 The proposal before the State Water Board provides the Agencies the ability to consider  
5 the implementation strategy that best meets the fishery protection purpose of the X2 objective. It  
6 avoids over-compliance. The Export Water Users ask the State Water Board to add to the 1995  
7 WQCP the ability to "carry-over" unmet outflow days from one month to the next. That will  
8 reduce the over compliance with the objective, and allow the CVP and SWP to be operated in a  
9 more efficient manner. As a result, it will be less likely that the quantity of water used for  
10 outflow will exceed that required to provide the level of protection the State Water Board deemed  
11 reasonable in the 1995 WQCP.

12 It would also have the State Water Board maintain, in terms of the export objective, and  
13 interject, for the outflow and Rio Vista objective, in the 1995 WQCP implementation flexibility.  
14 The ability to flex allows for adaptive management of objectives, as our understanding of the  
15 environment changes, as the environment itself changes and demand for Delta water changes.  
16 The ability of any Agency to veto a proposed flex provides a high level of protection for the  
17 resources those agencies are charged with defending. The proposed "sideboards" for any flex  
18 action provides the first level of assurance for the State Water Board that no flex impairs overall  
19 protection for beneficial uses. A second level of assurance is provided by the proposed  
20 involvement by a State Water Board staff member, and the State Water Board ultimate power to  
21 veto a flex action, a decision that would be made with the assistance of its staff member.

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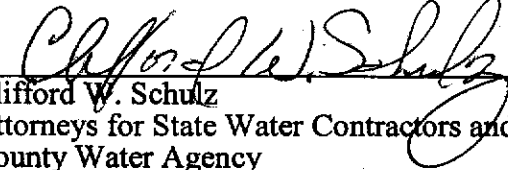
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In sum, the record before the State Water Board is clear. Removal of the existing risk of over-compliance will reduce the risk of a waste of water. Further, the authority to flex the export, outflow and Rio Vista objectives, with the process presented by the Export Water Users, will, at a minimum, maintain the existing level of protection, and could if the appropriate circumstances arise, at a maximum, improve conditions for all uses of Delta water.

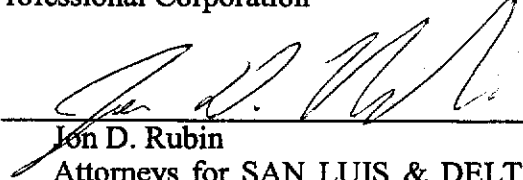
Dated: September 19, 2005

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