



September 8, 2017

CWFhearing@waterboards.ca.gov via Email

Chair Felicia Marcus
Board Member Tam Doduc
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812-0100

Re: August 31, 2017 Ruling Regarding Scheduling of Part 2 and Other
Procedural Matters

Dear Chair Marcus and Board Member Doduc:

The California Department of Water Resources ("DWR") and the U.S. Bureau of Reclamation ("Reclamation")(jointly "Petitioners") are responding to your ruling of August 31, 2017. In that ruling you requested that, by September 8, 2017, Petitioners provide an "updated summary of operating criteria that makes explicit whether particular criteria are proposed conditions of operation or are set forth solely as modeling assumptions."

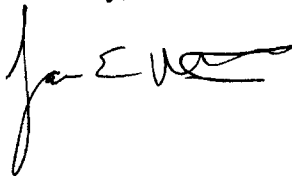
The attached tables describe a summary of the operating criteria for the project that was approved by DWR on July 21, 2017 and is described in the Final Environmental Impact Report and additional information made available to the public at that time. The tables also describe the operating criteria for the projects permitted by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife.

Petitioners propose that the California WaterFix be conditioned upon the terms contained in Water Rights Decision 1641 ("D-1641"). Modeling assumptions demonstrate it is possible to meet existing regulatory requirements inclusive of D-1641 and the 2008/2009 Biological Opinions. For purposes of this hearing, these modeling assumptions are not proposed as conditions but are presented in order to demonstrate compliance with the existing Water Quality Control Plan, which sets forth the thresholds for protecting beneficial uses.

The California WaterFix includes an adaptive management process. In Part 1 of this hearing Petitioners presented the boundary analysis of B1 to B2 in order to demonstrate no impact to legal users of water within the range of foreseeable outcomes of the adaptive management process. Through the adaptive management process, that was made a requirement of the Biological Opinions and 2081(b) Incidental Take Permit for the California WaterFix, new information can be assessed and, if appropriate, incorporated into the ESA/CESA permits. Therefore as part of this project, Petitioners are requesting that the Hearing Officers incorporate the adaptive management process into the water rights permits, and Petitioners are not proposing as conditions the operational criteria contained within the Biological Opinions and 2081(b) Incidental Take Permit.

Petitioners look forward to presenting evidence in Part 2 of the water rights hearing.

Sincerely,



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Modeling Parameter	Final EIR/EIS Criteria	NOD & Biological Opinion Criteria	2081(b) Incidental Take Permit Criteria
NDD intake bypass flows	<ul style="list-style-type: none"> • Bypass Flow¹ Criteria (specifies bypass flow required to remain downstream of the north Delta intakes): <ul style="list-style-type: none"> ○ October, November: Minimum flow of 7,000 cfs required in river after diverting at the north Delta intakes. ○ December through June: see below ○ July, August, September: Minimum flow of 5,000 cfs required in river after diverting at the north Delta intakes. • Initial Pulse Protection: <ul style="list-style-type: none"> ○ Low-level pumping of up to 6% of total Sacramento River flow such that bypass flow never falls below 5,000 cfs. No more than 300 cfs can be diverted at any one intake. ○ Low-level pumping maintained through the initial pulse period. ○ Sacramento River pulse is determined based on the criteria specified in Table 3-34 (Sub Table A shown below), and real-time monitoring of juvenile fish movement. ○ If the initial pulse begins and ends before Dec 1, post-pulse criteria for May go into effect after the pulse until Dec 1. On Dec 1, the Level 1 rules defined in Table 3-34 apply unless a second pulse occurs. If a second pulse occurs before June 30, the second pulse will have the same protective operation as the first pulse. • Post-pulse Criteria (specifies bypass flow required to remain downstream of the north Delta intakes): <ul style="list-style-type: none"> ○ December through June: once the initial pulse protection ends, post-pulse bypass flow operations will not exceed Level 1 pumping unless specific criteria have been met to increase to Level 2 or Level 3. If those criteria are met, operations can proceed as defined in Table 3-34. The specific criteria for transitioning between and among pulse protection, Level 1, Level 2, and/or Level 3 operations, will be developed and based on real-time fish monitoring and hydrologic/behavioral cues upstream of and in the Delta. During operations, adjustments to the default allowable diversion level specified in Table 3-34 are expected to be made to improve water supply and/or migratory conditions for fish by making real-time adjustments to the diversion levels at the north Delta intakes. These adjustments are expected to fall within the operational bounds analyzed for the BA and will be managed under real 	<ul style="list-style-type: none"> • Same as Final EIR/EIS Criteria • Real-time Operations (RTOs) are as discussed in Section 3.3.3.1 of the project description 	<ul style="list-style-type: none"> • Same as NOD/BO Criteria • Condition of Approval 9.9.5.1 includes description of RTOs

¹ Sacramento River flow upstream of the intakes to be measured flow at Freeport. Bypass flow is the Sacramento River flow quantified downstream of the Intake 5. Sub-daily north Delta intakes' diversion operations will maintain fish screen approach and sweeping velocity criteria.

Modeling Parameter	Final EIR/EIS Criteria	NOD & Biological Opinion Criteria	2081(b) Incidental Take Permit Criteria
	time operations (RTOs).		
South Delta operations ²	<ul style="list-style-type: none"> • October, November: No south Delta exports during the State Water Board Water Right Decision 1641 (D-1641) San Joaquin River 2-week pulse, no Old and Middle River (OMR) flow restriction during 2 weeks prior to pulse, and a 3-day average of -5,000 cfs in November after pulse. • December: OMR flows will not be more negative than an average of -5,000 cfs when the Sacramento River at Wilkins Slough pulse (same as north Delta diversion bypass flow pulse defined in Table 3-34) triggers³, and no more negative than an average of -2,000 cfs when the delta smelt 2008 USFWS BiOp action 1 triggers. No OMR flow restriction prior to the Sacramento River pulse, or delta smelt action 1 triggers. • January, February⁴: OMR flows will not be more negative than an average of 0 cfs during wet years, -3,500 cfs during above-normal years, or -4,000 cfs during below-normal to critical years, except -5,000 in January of dry and critical years. • March⁵: OMR flows will not be more negative than an average of 0 cfs during wet or above-normal years or -3,500 cfs during below-normal and dry year and -3,000 cfs during critical years. • April, May⁶: Allowable OMR flows depend on gaged flow measured at Vernalis, and will be determined by a linear relationship. If Vernalis flow is below 5,000 cfs, OMR flows will not be more negative than -2,000 cfs. If Vernalis is 6,000 cfs, OMR flows will not be less than +1,000 cfs. If Vernalis is 10,000 cfs, OMR flows will be at least 1,000 cfs. If Vernalis exceeds 10,000 cfs, OMR flows will be at least +2,000 cfs. If Vernalis is 15,000 cfs, OMR flows will be at least +3,000 cfs. If Vernalis is at or exceeds 30,000 cfs, OMR flows will be at least 6,000 cfs. • June: Similar to April and May, allowable flows depend on gaged flow measured at Vernalis. However, if Vernalis is less than 3,500 cfs, OMR flows will not be more negative than -3,500 cfs. If Vernalis exceeds 3,500 cfs and up to 10,000 cfs, OMR flows will be at least 0 cfs. If Vernalis exceeds 10,000 cfs and up to 15,000 cfs, 	<ul style="list-style-type: none"> • Footnote ⁹ • October, November: To be determined based on real time operations and protection of the D-1641 San Joaquin River 2-week pulse. • December through September: Same as Final EIR/EIS Criteria 	<ul style="list-style-type: none"> • Same as NOD/BO Criteria

² OMR measured through the currently proposed index-method (Hutton 2008) with a 14-day averaging period consistent with the current operations (USBR 2014).

³ December Sacramento River pulse determined by flow increases at Wilkins Slough of greater than 45% within 5-day period and exceeding 12,000 cfs at the end of 5-day period, and real-time monitoring of juvenile fish movement. Reclamation and DWR will require lead time of no less than 3 days to change operations in response to the pulse.

⁴ Water year type based on the Sacramento 40-30-30 index to be based on 50% forecast per current approaches; the first update of the water year type to occur in February. CALSIM II modeling uses previous water year type for October through January, and the current water year type from February onwards.

⁵ Water year type as described in the above footnote.

⁶ When OMR target is based on Vernalis flow, will be a function of 5-day average measured flow.

Modeling Parameter	Final EIR/EIS Criteria	NOD & Biological Opinion Criteria	2081(b) Incidental Take Permit Criteria
	<p>OMR flows will be at least +1,000 cfs. If Vernalis exceeds 15,000 cfs, OMR flows will be at least +2,000 cfs.</p> <ul style="list-style-type: none"> July, August, September: No OMR flow constraints⁷. OMR criteria under 2008 USFWS and 2009 NMFS BiOps or the above, whichever results in more positive, or less negative OMR flows, will be applicable⁸. 		
HOR Gate operations	<ul style="list-style-type: none"> October 1–November 30th: RTO management – head of Old River gate will be closed in order to protect the D-1641 pulse flow designed to attract upstream migrating San Joaquin origin adult fall-run Chinook Salmon. Head of Old River gate will be closed approximately 50% during the time immediately before and after the San Joaquin River pulse and that it will be fully closed during the pulse unless new information suggests alternative operations are better for fish. January: When salmon fry are migrating, (determined based on real time monitoring), initial operating criterion will be to close the gate subject to RTO for purposes of water quality, stage, and flood control considerations. February–June 15th: Initial operating criterion will be to close the gate subject to RTO for purposes of water quality, stage, and flood control considerations. Reclamation, DWR, NMFS, USFWS, and DFW will actively explore the implementation of reliable juvenile salmonid tracking technology which may enable shifting to a more flexible real time operating criterion based on the presence/absence of covered fishes. June 16 to September 30, December: Operable gates will be open. 	<ul style="list-style-type: none"> October 1–November 30: RTO management – with the current expectation being that the HOR gate will be operated to protect the D- 1641 pulse flow. January-March 31, and June 1-15: RTO will determine exact operations to protect salmon fry when migrating. During this migration, operation will be to close the gate subject to RTO for purposes of water quality, stage, and flood control considerations. April-May: Initial operating criterion will be to close the gate 100% of time subject to RTO for purposes of water quality, stage, and flood control considerations (Section 3.3.3, Real-Time Operational Decision-Making Process). Reclamation, DWR, NMFS, USFWS, and DFW will actively explore the implementation of reliable juvenile salmonid tracking technology that may enable shifting to a more flexible real time operating criterion based on the presence/absence of listed fishes. June 16 to September 30, December: Operable gates will be open. 	<ul style="list-style-type: none"> Same as NOD/BO Criteria
Spring Outflow	<ul style="list-style-type: none"> March, April, May: Initial operations will maintain the March–May average Delta outflow that would occur with existing facilities under the operational criteria described in the 2008 USFWS BiOp and 2009 NMFS BiOp (U.S. Fish and Wildlife Service 2008; National Marine Fisheries Service 2009). The 2009 NMFS BiOp Action IV.2.1 (San Joaquin River i-e ratio) will be used to constrain Apr–May total Delta exports under 	<ul style="list-style-type: none"> NOD Objective: Maintain spring (March–May) outflow consistent with existing water conveyance/operations under current climate conditions Eight River Index based outflow targets for March¹¹ to be achieved to the extent possible through export curtailments; April and May same as Final EIR/EIS criteria, up to a maximum outflow target of 44,500 cfs. 	<ul style="list-style-type: none"> Objective: Maintain spring (March–May) outflow consistent with existing water conveyance/operations under current climate conditions March 1 – May 31¹²: Condition 9.9.4.3.

⁹ The criteria do not fully reflect the complexities of CVP/SWP operations, dynamic hydrology, or spatial and temporal variation in the distribution of aquatic species. As a result, the criteria will be achieved by operating within an initial range of real time operational criteria from January through March and in June. This initial range, including operational triggers, will be determined through future discussion, including a starting point of -1250 to -5000 cfs based on a 14-day running average, and will be informed by the Adaptive Management Program, including real time monitoring. Further, the 3-day averaging period may be modified through future discussion. Modifications to the 3-day average period and the range of operating criteria may be needed, in part, because: 1) the water year type is forecasted in February but not finalized until May and 2) 0 cfs, or positive, OMR in wet and above normal years may be attained coincident with unimpaired flows.

⁷ Permittee shall include a preference for south Delta pumping July 1 to September 30 up to total pumping of 3,000 cfs; No specific intake preference beyond 3,000 cfs to provide limited flushing flows to manage water quality in the south Delta.

⁸ Change in CVP/SWP pumping from the south Delta will occur to comply with OMR targets will be achieved to the extent exports can control the flow. The OMR targets would not be achieved through releases from CVP/SWP reservoirs. The combined CVP/SWP export rates from the proposed north Delta intakes and the existing south Delta intakes will not be required to drop below 1,500 cfs to provide water supply for health and safety needs, critical refuge supplies, and obligation to senior water rights holders.

Modeling Parameter	Final EIR/EIS Criteria	NOD & Biological Opinion Criteria	2081(b) Incidental Take Permit Criteria
	Alternative 4A to meet March–May Delta outflow targets per current operational practices (National Marine Fisheries Service 2009). ¹⁰		
Rio Vista minimum flow standard ¹³	<ul style="list-style-type: none"> January through August: flows will exceed 3,000 cfs September through December: flows per State Water Resources Control Board Water Right Decision 1641 (D-1641) 	<ul style="list-style-type: none"> January through August: No requirement September through December: Same as Final EIR/EIS Criteria 	<ul style="list-style-type: none"> Same as NOD/BO Criteria
Fall Outflow	<ul style="list-style-type: none"> No change. September, October, November implement the 2008 USFWS BiOp Fall X2 requirements in wet and above normal year types. 	<ul style="list-style-type: none"> Same as Final EIR/EIS Criteria 	<ul style="list-style-type: none"> Same as Final EIR/EIS Criteria
Winter and Summer Outflow	<ul style="list-style-type: none"> No change. Flow constraints established under D-1641 will be followed if not superseded by criteria listed above. 	<ul style="list-style-type: none"> Same as Final EIR/EIS Criteria 	<ul style="list-style-type: none"> Same as Final EIR/EIS Criteria
Export to inflow ratio	<ul style="list-style-type: none"> Operational criteria are the same as defined under D-1641, and applied as a maximum 3-day running average. The D-1641 ratio calculation was designed to protect fish from south Delta entrainment. For Alternative 4A, Reclamation and DWR propose that the north Delta diversion be excluded from the export/inflow ratio calculation. In other words, Sacramento River inflow is defined as flows downstream of the north Delta diversion and only south Delta exports are included for the export component of the criteria. 	<ul style="list-style-type: none"> Same as Final EIR/EIS Criteria 	<ul style="list-style-type: none"> Same as Final EIR/EIS Criteria

Sub Table A. Post-Pulse Operations for NDD Bypass Flows

Permittee shall implement following bypass flow requirements to (1) maintain fish screen sweeping velocities, (2) minimize potential increase in upstream transport of productivity in the channels downstream of the intakes, (3) support salmonid and pelagic fish movements to regions of suitable habitat, (4) reduce losses to predation downstream of the diversions, and (5) maintain or improve rearing habitat conditions in the north Delta. Allowable diversion will be greater of the low-level pumping or the diversion allowed by the following bypass flow rules.

¹¹ Table 5.3-1 of the CWF 2081(b) application.

¹² To minimize impacts of the Project on LFS Permittee shall operate to achieve spring outflow criteria (see Condition of Approval 9.9.4.3).

¹⁰ For example, if best available science resulting from collaborative scientific research program shows that Longfin Smelt abundance can be maintained in the absence of spring outflow, and DFW concurs, an alternative operation for spring outflow could be to follow flow constraints established under D-1641. Any changes in the PA will be implemented consistent with the Collaborative Science and Adaptive Management Program, including coordination with USFWS and NMFS.

¹³ Rio Vista minimum monthly average flow in cfs (7-day average flow not be less than 1,000 below monthly minimum), consistent with D-1641.

Level 1 Post-Pulse Operations			Level 2 Post-Pulse Operations			Level 3 Post Pulse Operations		
If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...
December 1 to April 30								
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping
15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May 1 to May 31								
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
June 1 to June 30								
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs

20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs
Bypass flow requirements in other months:								
If Sacramento River flow is over...			But not over...			The bypass is...		
July 1 to September 30								
0 cfs			5,000 cfs			100% of the amount over 0 cfs		
5,000 cfs			No limit			A minimum of 5,000 cfs		
October 1 to November 30								
0 cfs			7,000 cfs			100% of the amount over 0 cfs		
7,000 cfs			No limit			A minimum of 7,000 cfs		

Sub Table B. Spring Outflow Criteria Upon initiation of the Test Period and throughout the rest of the permit term, Permittee shall provide average Delta outflow for LFS based on the 50% exceedance forecast for the current month's ELT 8 River Index (8RI), as described in Condition of Approval 9.9.4.3.							
February ELT 8RI (TAF)	February Average Delta Outflow Target (cfs)	March ELT 8RI (TAF)	March Average Delta Outflow Target (cfs)	April ELT 8RI (TAF)	April Average Delta Outflow Target (cfs)	May ELT 8RI (TAF)	May Average Delta Outflow Target (cfs)
0	0	0	0	0	0	0	0
450	7100	450	7100	450	7100	250	4000
900	7100	1000	7100	1000	7100	850	4000
1000	9100	1625	7100	1500	7100	1545	4000
1100	11000	1700	8700	1855	7100	1600	4700
1200	13000	1800	10900	1900	8100	1700	6000
1300	14900	1900	13000	2000	10300	1800	7300
1400	16900	2000	15200	2100	12500	1900	8600
1500	18800	2100	17400	2200	14700	2000	9900
1600	20800	2200	19500	2300	16900	2100	11300
1700	22700	2300	21700	2400	19100	2200	12600
1800	24700	2400	23800	2500	21300	2300	13900
1900	26600	2500	26000	2600	23500	2400	15200
2000	28600	2600	28100	2700	25700	2500	16500
2100	30500	2700	30300	2800	27900	2600	17800
2200	32500	2800	32400	2900	30100	2700	19100
2300	34400	2900	34600	3000	32300	2800	20400
2400	36400	3000	36800	3100	34500	2900	21700
2500	38300	3100	38900	3200	36700	3000	23000

2600	40300	3200	41100	3300	38900	3100	24300
2700	42200	3300	43200	3400	41200	3200	25600
2815	44500	3360	44500	3500	43400	3300	26900
> 2815	44500	> 3360	44500	3550	44500	3400	28300
				> 3550	44500	3500	29600
						3600	30900
						3700	32200
						3800	33500
						3900	34800
						4000	36100
						4100	37400
						4200	38700
						4300	40000
						4400	41300
						4500	42600
						4600	44000
						4650	44500
						> 4650	44500