

**NoName Group
Draft Toolbox Measures**

Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost	Implement ability	Time Frame	Mitigation potential
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Near-term tools

Banks PP permit to 10,300 cfs	+		o	+	low, but environmentally related processing costs could be high	+,o	2-4 yrs	+
S. Delta facilities with new screened intake of 5,000 to 7,000 cfs capacity at CCFB	+		+	o	ref: CALFED costs for screens	+,o	>2 yrs	+
JPOD (ref. SWRCB alternatives, unlimited)	+		o	+	wheeling costs	+,o	0-2 yrs	+
DMC / Calif. Aqueduct intertie	+,o		+	o	\$12-15M, \$20/AF	+,o	2-4 yrs	+
Madera Ranch	+		o	o	\$110-125 million, 40% land / 60% facilities, \$150-175/AF total	+,o	3-5 yrs	+

Add-ons

Raise Shasta Dam	+		o	o	?	o	3-7yrs	o
In-Delta Storage (e.g., Delta Wetlands)	+		o	o	?	o	>4 yrs.	o

Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost	Implement ability	Time Frame	Mitigation potential
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Other Near-term tools

Kern Waterbank:								
Reschedule SWP deliveries	+		+	o	\$25-50/AF	+	0-2 yrs	+
Pre-deliver to groundwater	+		+	o	\$110-175/AF	+	0-2 yrs	+
Semitropic expansion	?		+	o	\$200-\$300/AF	+	0-2 yrs.	+
MWD demand shift	+		+	o	\$25/AF for same yr, \$50-75/AF for multi yr.	+	0-2 yrs.	+
Exchanges involving the Cross Valley Canal	+		+	o	?	+,o	0-4 yrs	+
Variable pumping at Tracy PP	+		+	o	?	+	1-5 yrs	+

Market acquisition of water/incentives

Purchase reduced demand (2)								
Long-term deals for long term water purch.	+	?(3)	o	o	?	o+	3-5 yrs	o
Long-term deals for short term options	+	?	o	o	?	o+	3-5 yrs	o
Short-term purchase program	+	?	+	o	?	+	1-3 yrs	+
Project water purchases:								
Purchase USBR 215 water								
Purchase DWR interruptible water								
Purchase turnback water	+	+, conditional on timing of pumping	+	o	10-20/AF	+, but only if storage can be accessed	1-2 yrs	+
Purchase releases from hydro producers	?+	-(4)	o-	o	?	o-	3-5 yrs	o-
Time-based pricing (5)								
Incentives for GW banking and exchange	+	o, depends on ops	+	o	?	o-	3-5 yrs	+
Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost	Implement ability	Time Frame	Mitigation potential

Acquisition of level 4 refuges supplies for banking (6)	+	+	+	o	?	+	1-3 yrs	+
Increased usage of Colorado R. water via conj. use or financial incentives (7)	+	+	NA	+	?	-	3-5 yrs	+
Upstream purchases (w/ or w/o operational shifts)	+	?	+ short term, o long term	o	?	+ short term, o long term	1-3 short, 3-5 long	o

- 1) Many of these costs may be estimated in the CVPIA PEIS
- 2) Assumed to be environmental purchases south of the Delta only. Purchases by water users are already ongoing
- 3) Stakeholder support contingent upon structure of CALFED water transfer package.
- 4) Assumed opposition from downstream users, recreational interests, and some environmentalists
 Although potentially some opportunities, unresolved water rights issues can create "black holes" and delay eventual implementation.
- 5) Covered by incentives for GW banking and level 4 water categories. Therefore not scored.
- 6) Unclear. Assumed involves placement of level 4 water into storage ahead of schedule.
- 7) Not clear what CALFED could add to existing purchases. Assumed that intent is to retain full aqueduct.

Reop'ed, shifted, conj. use, existing storage

CCSF / SCVWD Exchanges	+				\$10M for 60 cfs		3 yrs.	+
Mendota Pool pumping shifts	+				low (ref: CVPIA toolbox group)	o	0-2 yrs.	could enhance SJR flow
Los Vaqueros	+		o	o	low	o	0-2 yrs.	o
American Riv. Exchanges								
Amer. Riv. / Mok. Riv.	+		o	o	\$138/AF for EBMUD water + wheeling	o (over and above FSC connectn, no sig. hurdles if supported by enviros.)	5 yrs.	+
Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost	Implement ability	Time Frame	Mitigation potential

Temporary storage of drainage water	+							
Desalination	+							
Expansion of Delta Cross Channel	(tool needs more definition to evaluate)							
Central Delta intake	(tool needs more definition to evaluate)							
Fullerton exchange proposal	+							

Removal of smaller reservoirs/dams for ecosystem access

Battle Creek	+		+	o	\$ 12 M		Depends	+
					\$ 14.7 M (DWR believes this estimate is order of magnitude too low)		Depends on negot. w/ stkhldrs	
Englebright	+		+	o				+

Procedural Tools

COA revisions								
Review upstream responsibility to reflect shifted CVP/SWP burdens since the Accord								
Section 1707: Dedication of instream flows for enviro. purposes and/or Delta outflow								
CVPIA yield augmentation								

Combination Tools

VAMP: modification of WQCP flows + acquisition of water through market and non-market means								
b(2)/b(3) water: Flexibility between the two to meet fish objectives								

Tool	Ecosystem Benefits	Water Supply Benefits	Water Quality Benefits
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Near-term tools

Banks PP permit to 10,300 cfs	+(could alter export timing, decrease take),o (could increase take, affect Delta flows)	Now 118 TAF avg, 71 TAF in crit. yr.	o
S. Delta facilities with new screened intake of 5,000 to 7,000 cfs capacity at CCFB	+(could reduce take)	could allow projects to export more if take is reduced	o
JPOD (ref. SWRCB alternatives, unlimited)	+(could alter export timing),o (could increase take)	0-175 TAF depending on alts	o
DMC / Calif. Aqueduct intertie	+(could alter export timing),o (could increase take)	max. capacity is about 180AF/yr	o
Madera Ranch	+(could alter export timing)	350 TAF available storage cap., 400 cfs put, 200 cfs take capacity	depends on export ops rules and timing and extraction quality

Other Near-term tools

Raise Shasta Dam	+, could be used for instream flows and temp. control	>0, but unknown, depends on ops., and size of enlargement	
In-Delta Storage (e.g., Delta Wetlands)	o, depends on ops and mitigation programs	200-250 TAF cap., yield: <100 TAF long-term, 0-50 TAF in crit.year, depends on ops. Revised program and ops may change yield	o, depends on ops

Tool	Ecosystem Benefits	Water Supply Benefits	Water Quality Benefits
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Kern Waterbank: Reschedule SWP deliveries	+(alter export timing)	50-100 TAF/yr shift (AN, Wet)	o, depends on ops
Pre-deliver to groundwater	+(alter export timing)	?	o, depends on ops
Semitropic expansion	+(alter export timing)	0-200 TAF of avail. storage	o, depends on ops
MWD demand shift	+(alter export timing)	50-100 TAF shift	o, depends on ops
Exchanges involving the Cross Valley Canal	+(alter export timing)	?	o, depends on ops
Variable pumping at Tracy PP	+(could alter export timing),o (could increase take)	?	o, depends on ops

Market acquisition of water/incentives

Purchase reduced demand (2)			
Long-term deals for long term water purch.	+	0 TAF	+ (12)
Long-term deals for short term options	+	0 TAF	+
Short-term purchase program	+	0 TAF	+
Project water purchases:			
Purchase USBR 215 water			
Purchase DWR interruptible water			
Purchase turnback water	o+ (8)	get from models, < 100 TAF.	o
Purchase releases from hydro producers	? (9)	?	o
Time-based pricing (5)			
Incentives for GW banking and exchange	+	?	o+, could reduce salt loading
Tool	Ecosystem Benefits	Water Supply Benefits	Water Quality Benefits

Acquisition of level 4 refuges supplies for banking (6)	?	< 250 TAF	o
Increased usage of Colorado R. water via conj. use or financial incentives (7)	+	? < 4.4 MAF- rights	?
Upstream purchases (w/ or w/o operational shifts) (10)	o (11)	?	o+ depends on details

8) Low impact at worst. If dedicated for enviro. benefits e.g., to produce diversion timing shift, then positive

9) Depends on operations, when water is moved, etc...

10) Implementability of transfers will depend on the details. SOD to SOD transfers may have few problems.

NOD to SOD transfers may be more problematic. All else being equal, short term transfers are easier

11) Possible benefits if purchased for the environment

12) If purchases in drainage problem areas.

Reop'ed, shifted, conj. use, existing storage

CCSF / SCVWD Exchanges	? (higher SJR flow)	0-30 TAF shift (SCVWD to check)	o, could enhance SJR flows
Mendota Pool pumping shifts		20-45 TAF shift	
Los Vaqueros	+(alter export timing)	5-15 TAF/yr	
American Riv. Exchanges			
Amer. Riv. / Mok. Riv.	+, could enhance Mokelumne flows for fish, impacts to American Riv. need to be addressed	o, neutral	+, o may provide better quality in S. and Central Delta if Mokelumne flows are increased
Tool	Ecosystem Benefits	Water Supply Benefits	Water Quality Benefits

Amer. Riv. to SSJID/OID	+, could enhance Stanislaus flows for fish, fish impacts on Amer. need to be addressed	+,?, could help supply upstream of Vernalis if Vernalis WQ objective is met w/ less flow	+, may provide better quality in S. Delta if Stanislaus flows are increased
Folsom So. Canal GW/East SJ exchange	Fish impacts on Amer. need to be addressed	?	?
Alameda Co. GW banking / conj. use		? - might not be viable	
San Luis Reservoir (re-operation)			

New Groundwater Storage

Gravelly Ford Project (?)		?	
Contra Costa GW banking/conj. use		TBD	

New Surface Storage

Raise Friant Dam		>0, but unknown, depends on ops.	
Expansion of Pacheco Res.		>0, but unknown, depends on ops.,	
Pine Flat companion reservoir		>0, but unknown, depends on ops.	

Other modification of operating pattern tools

Exchanges not using Ops Group - unbalanced exchanges		depends on ops rules	
Exchanges for water quality		depends on ops rules	
Reschedule water or shifting to GW to get past low point in San Luis		50-100 TAF in wetter years	
Real-time operations with crediting (adaptive exports limits)		100's TAF?, DWR says much less	
Friant-Kern/ Calif. Aqueduct intertie		depends on ops rules	
Contributions from other CVP contractors and other water users to meet enviro. objectives			
Tool	Ecosystem Benefits	Water Supply Potential/Benefits (yield/cap/shifted)	Water Quality Benefits
Recirculation		about 100 TAF, DWR thinks amount is much smaller	

Temporary storage of drainage water		<20 TAF	
Desalination		?	
Expansion of Delta Cross Channel		depends on ops rules	
Central Delta intake		depends on ops rules	
Fullerton exchange proposal		small	

Removal of smaller reservoirs/dams for ecosystem access

Battle Creek	# miles of habitat	x miles of habitat, dams not currently	o
	# miles of habitat TBD	y miles of habitat, dams not currently used for flood control or supply (?)	
Englebright			o

Procedural Tools

COA revisions			
Review upstream responsibility to reflect shifted CVP/SWP burdens since the Accord			
Section 1707: Dedication of instream flows for enviro. purposes and/or Delta outflow			
CVPIA yield augmentation			

Combination Tools

VAMP: modification of WQCP flows + acquisition of water through market and non- market means			
b(2)/b(3) water: Flexibility between the two to meet fish objectives			

Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues
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Near-term tools

Banks PP permit to 10,300 cfs	+/o, could decrease or increase take, depending on ops rules			ops rules, need to address SDWA concerns
		+	+	
S. Delta facilities with new screened intake of 5,000 to 7,000 cfs capacity at CCFB	+	+	+	ops rules
JPOD (ref. SWRCB alternatives, unlimited)	+/o, could decrease or increase take, depending on ops rules			ops rules, need to address SDWA concerns
		+	+	
DMC / Calif. Aqueduct intertie	+/o, could decrease or increase take, depending on ops rules			
		+	+	relation to JPOD
Madera Ranch	o, would require local mitigation for terrestrial species, but could provide wetland habitat			
		+	+	

Other Near-term tools

Raise Shasta Dam	o,could be impacts related to new lake level and downstream of dam. Benefits could occur though.			
In-Delta Storage (e.g., Delta Wetlands)	o	+	o, depends on ops	storage of water on peat soils and wq impact

Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues
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Kern Waterbank:				
Reschedule SWP deliveries	+	+	+	
Pre-deliver to groundwater	+	+	o, extracted wq?	
Semitropic expansion	+	+	o, extracted wq?	Current storage available
MWD demand shift	+	+	o, extracted wq?	
Exchanges involving the Cross Valley Canal	+	+	+	
Variable pumping at Tracy PP	+/o, could decrease or increase take, depending on ops rules		+	

Market acquisition of water/incentives

Purchase reduced demand (2)				
Long-term deals for long term water purch.	+		neutral	
		+, assuming no injury rule		
Long-term deals for short term options	+		neutral	
Short-term purchase program	+		neutral	
Project water purchases:				
Purchase USBR 215 water				
Purchase DWR interruptible water				
Purchase turnback water	o	+	neutral	
Purchase releases from hydro producers	o	o-	o, depends on ops	
Time-based pricing (5)				
Incentives for GW banking and exchange	+	+	neutral	
Tool				
	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues (13)

Acquisition of level 4 refuges supplies for banking (6)	+	+	neutral	
Increased usage of Colorado R. water via conj. use or financial incentives (7)	+	+	-	
Upstream purchases (w/ or w/o operational shifts)	o	+, assuming no injury rule	could be negative, depends on ops	

13) see footnotes throughout.

Reop'ed, shifted, conj. use, existing storage

CCSF / SCVWD Exchanges	+	+		
Mendota Pool pumping shifts	+	+	o, extracted wq?	overdraft problem?
Los Vaqueros	+	+	+	CCWD assurances, effects on Rock Sl. compliance
American Riv. Exchanges				
Amer. Riv. / Mok. Riv.	+,o (fish impacts on the Amer. need to be addressed, though)	?	+	enviro support must be evaluated, water supply impacts/benefits must be evaluated
Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues (13)

Amer. Riv. to SSJID/OID	+,o (fish impacts on the Amer. need to be addressed, though)	?	+	local support must be evaluated, water supply impacts/benefits must be evaluated
Folsom So. Canal GW/East SJ exchange	+,o (fish impacts on the Amer. need to be addressed, though)			
Alameda Co. GW banking / conj. use				
San Luis Reservoir (re-operation)				

New Groundwater Storage

Gravelly Ford Project (?)				need project description
Contra Costa GW banking/conj. use				

New Surface Storage

Raise Friant Dam	Too far out to evaluate -----			
Expansion of Pacheco Res.	Too far out to evaluate -----			
Pine Flat companion reservoir	Too far out to evaluate -----			

Other modification of operating pattern tools

Exchanges not using Ops Group - unbalanced exchanges				ops rules
Exchanges for water quality				
Reschedule water or shifting to GW to get past low point in San Luis				
Real-time operations with crediting (adaptive exports limits)				ops rules
Friant-Kern/ Calif. Aqueduct intertie				
Contributions from other CVP contractors and other water users to meet enviro. objectives				Eastside supply reduction
Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues
Recirculation				VAMP conflict

Temporary storage of drainage water				
Desalination				
Expansion of Delta Cross Channel				
Central Delta intake				
Fullerton exchange proposal				

Removal of smaller reservoirs/dams for ecosystem access

Battle Creek	+	probably small	+	negotiations w/ locals
Englebright	+	probably small	+	negotiations w/ locals

Procedural Tools

COA revisions				
Review upstream responsibility to reflect shifted CVP/SWP burdens since the Accord				
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Combination Tools

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