

DRAFT
DNCT Steering Committee
Meeting Notes
4/13/99
9:30-4:00

Attendees: Pete Chadwick, Jim White, Bruce Herbold, Sushil Arora, Art Hinojosa, Speck Rosekrans, Dave Forkel, Karl Halupka, Dave Fullerton, BJ Miller, Tom Zuckerman, Sheila Greene, Paul Fujitani, Dave Briggs, E. Roe, P Grateinger, Dale Sweetnam, Earl Nelson

Agenda:

1. Review of evaluations
2. Biology – Bruce Herbold
3. Water Supply – BJ Miller
4. Water Quality – Dave Briggs
5. End of Stage 1 Actions – Dave Fullerton
6. Lunch
7. Design next game – data needs
8. DEFT discussion of Hood Diversion
9. Contract and Credit alternatives to EWA.

Highlights

- Agreed to have two games simultaneously – Credit and EWA – with WQ, WS, and Fish in each game.
- Will keep biol, WQ, and WS score in each game;
- We will try to improve each – WS goal should be 200-400 TAF above Accord.
- Will add full array of tools and consider different amounts or levels of implementation.

Biology – Bruce Herbold

Basic approach:

<u>Species</u>	<u>Parameter of Concern</u>	<u>Triggers for Action</u>
Splittail	Entrainment	San Joaquin spawning; Vernalis abundance.
Salmon – Sacramento	Flow, exports inputs to Sac equations from Sheila Green.	Carryover storage, temperature model, flow rates
Salmon – San Joaquin	Flow, exports inputs to SJ equations from Pat Brandes.	
Salmon fry	No measures	
Steelhead	Not from salvage	

Delta smelt	X2 days in Suisun Bay; Entrainment (May-Feb) Mar-May larvae entrainment (function of SJ flows versus export rates) X2 movement	
Striped Bass	As for delta smelt	Would not trigger action.

- Loss at pumps was small factor for Sac salmon survival
- Other more important factors for Sac salmon were not included in the game.
- Other issues no addressed in game.
- Need to have models involved in game so that we can make decisions based on fish performance.
- Need to look at targets for carryover storage.
- We may not have accounted for all streamflow benefits.
- We should consider what if analyses.

Water Supply – BJ Miller

The Problem: Need more water supply benefit (200 early in Stage 1 – 400 TAF later in Stage 1 more than 1995 Accord).

<u>Model Run</u>	<u>1928-34</u>	<u>72-year average</u>
A. Accord + Upstream AFRP	3985	5551
B. Accord + all AFRP	3881	5381
C. Last Game of EWA	3953	5541

- Water supply benefits of #3 are not sufficient – need +200 TAF to + 400 TAF
- This group is not to discuss merits of these needs, only consider how they might be achieved.
- BJ will email some ideas for generating this water.
- Basic options to get more yield for water supply:
 - Larger EWA
 - Change allocation/demands
 - flex additional fixed elements/standards
 - (e.g., no X2 requirement when outflow is below 20 kcsf)
 - Allow fully expanded Banks pumping to 10,300 cfs.
 - Give portion of enlarged Shasta to WS.
 - Give some of GW to WS.
- Need to ID runs for George to run.
- C: 200-400 TAF more water from Delta is OK from wet years but not dry years.
- C: We could simply purchase the 200-400 TAF from Delta exporters.
- C: GW allows exporting in wet years and using in dry years. Good thing.

Discussion of Sprecht’s Notes on Credit Approach

- Wants to stay away from allowing more consumptive use of water.

- Simply give environment credits to reduce exports or increase inflow/outflow from relaxing Accord + AFRP standards.
- The size of the credit account differs depending on the how much relaxation we would allow.
- Need to be smart with our water with this approach.
- Contract/Credit approach will require more effort on the part of operators and EWA account managers.
- Renegotiate Coordinated Operating Agreement – better divvy up pie.
- We could allow operators to run model to see if this could work.
- Contract approach sets an amount for EWA given assets and year conditions.
- Credit approach simply provide pump credits.

Model Runs from Sushil

- Only did runs B and C in table.
- Will try last run in gaming with Shasta going to WS.
- It will be difficult to get more water supplied to either ENV or WS.
- SWP demands vary while CVP are steady.
- There are years when we already can not meet demands.
- There is a permanent shortage for CVP demands.
- CVP is an average problem, while SWP is a dry year problem.
- WS costs are 0.5 MAF in average and dry year.

What to do with next game? Dave Fullerton

- List all the assets/tools and divvy them up to satisfy WS, WQ, and ENV.
 - Need to decide what assets are in the game and which are used for what.
 - Need to decide how to get water into EWA and what are the rights for that water.
 - Suggests adding the following tools to assets for EWA in Stage 1:
 - Expanded Banks to 10.3 kcfs.
 - Add more “Efficiency Water” (more toilets)
 - Add more GW storage and greater capacity
 - Add more Delta storage – not just Bacon
 - Add the dead-pool for Santa Clara to San Luis (100 TAF?)
 - Think about how we can use these to add more ENV protection
 - Concerned about cost of slowing down 10.3 Banks pumping if we allow unrestricted use of that to WS.
 - Can we do three games simultaneous – WS, WQ, and EWA?
 - Should we allow each tool to be used for any of the these?
 - If we do simultaneous then better for comparing.
- C: We should get our assets as large as possible by year 4 of Stage 1.
- C: Have we identified other assets that work like Delta storage? Las Vacaros? Pacheco?
- C: Las Vacaros is not a flexible as Pacheco or Delta storage.
- C: DWRSIM runs could show us how some of these new assets would help. See if we can squeeze another 200-400 TAF for WS.
- C: If storage is going to be added to asset list then we need to get those options into the 404

process.

C: Can we allow the EWA to cover In-Delta AFRP costs? This would be credited against the 200-400 TAF.

C: Agencies would not buy into the game without In-Delta AFRP and big EWA.

C: Relaxing X2 is not something agencies are comfortable putting on table to get new WS or EWA water.

Q: How do we get more EWA water as well as WS. R: split new assets and relax more standards.

Water Quality – Dave Briggs

- Concerned with TDS, bromide, DOC
- Two step process – evaluate WQ before and after EWA
- WQ is an outlier issue
- Barrier in South Delta and HOR each have their effects on WQ
- Also effects of land use and habitat restoration
- Use of Delta storage is a big issue. Peak leaching in Feb/Mar. If we pump to fill Bacon and Webb in Feb/Mar water will be at peak TOC levels.
- We still do not understand relationship of source water factors and our WQ contaminant problems
- Closure of DCC is a big issue.
- Suggests look at seawater intrusion differences between Accord+AFRP and Accord+AFRP+EWA.

C: We need to decide a base for WS and WQ.

Q: We should not forget benefits to WQ from the Accord. R: More exports in fall has not been good for WQ.

C: The maximum water to Webb is 100 TAF; that is a drop in the bucket especially given urbans use the water for blending down other sources. R: Agree. Will look into effect.

C: Operations of Delta storage can add additional TOC than just source water – peat on island and algae growth.

C: We have to add something more than CCF water to make WS people happy. We should try to have a SOD storage available to improve WQ. R: GW is also a problem for WQ.

C: We could use Webb water to meet VAMP outflow requirement, while we pump high quality San Joaquin reservoir VAMP releases. R: Yes, but Webb capacity would be limited.

C: We are putting too much of a burden on the gaming to solve problems. Our job is to show how real-time gaming in the future could be used to solve problems.

Russ's Handouts for Biology Scoring – to be accounted for in daily model.

- Credits for moving X2 downstream so much per KM.
 - Credits for HOR barrier.
- C: Entrainment credits are much less interesting than survival survival credits.

Ron's Report for DEFT Hood Diversion

- Upstream migrant impacts are too questionable to say that a Hood diversion would be ENV benefit.

- Will be kept in preferred, but as a tool for WQ.
- Concern for impacts to migration will be kept in to deal with in adaptive management.

Back to Gaming Discussion

C: Need to define our most useful list of assets.

C: We should develop criteria for performance of each of the assets.

C: Last game we had big assets and high flexibility, but we changed standards little – we did minimal for WS and hurt WQ slightly. We need to do more for WS and WQ, and some more for fish.

C: Suggest: 1) provide max flex by end of Stage 1. 2) look at consequences of a range of WS alternatives run with DWRSIM.

Scorecard

<u>Quantity</u>	<u>Tool</u>	<u>Purpose</u>			<u>Priority</u>	<u>Cost</u>	<u>Value</u>
		<u>fish</u>	<u>WQ</u>	<u>WS</u>			
	Big pumps	A		A+			
	Delta Storage	A		A			
	DW Screens	A					
	Ground Water	B		A			
	Raise Shasta	B		B			
	Borrow Shasta	A					
	Pacheco/San Luis	B					
	\$\$\$\$\$\$ Money	A		B			
	Efficiency	C					
	Relax E/I	A		A			
	JPOD	?		A			
	Screen CCF	A					
	Relax X2	?		A			
	Los Vacaros	A		A			

	Relax B2	?		A			
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- C: Will we be confined by the number of games we can accomplish? Will we not look at everything? How does our schedule affect our options? R: This is game for May deadline – to show that EWA is viable tool. There will be more gaming after May to make it work. Simply trying to see if its possible to provide benefits for WS, WQ, and Fish.
- C: Why are we concerned with a screen at CCF when we have VAMP? R: for salmon?
- C: Efficiency?
- C: We need to show how valuable each tool is to meeting EWA goals. How valuable for WS and WQ.
- C: We are looking for maximum flexibility.
- C: We will be dealing with size of each tool as we go.
- C: Tools are simply ways of capturing surplus water – shifting timing of exports within and among years.
- C: EWA puts out water even in a wet year.
- C: There are tradeoffs among tools. We need to look at adjusting tradeoffs among tools to make the whole toolbox more efficient.
- Q: How do we avoid the increased fall pumping in Accord to help WQ? R: we should deal with CCWD’s problem as one problem and other exporters problems as another.
- Q: Could we use options/ exchanges to help WQ?
- Q: How do we deal with increasing demands for more high quality water from Delta?
- C: We need to compare to historical supply not just Accord baseline.
- C: We could have a subaccount for WQ as we go.
- C: We could build in benefits of Hood for WQ and impacts of closing DCC.
- Q: Does WQ have priority over fish at DCC ? R: yes.
- C: Why not purchase WQ.
- C: Suggest we allow options to increase WQ at CCWD and keep track of it. Suggest
1. Allow increase pumping at times of good WQ
 2. Move or eliminate Veale Track discharge
 3. Purchase DOC reductions from dischargers.
- C: We should consider operating against FWS baseline.

Contract Approach (see Bruce’s notes)

- C: Contracts could be for most anything we do. Need to see if DWR/BOR could contract these amounts.
- C: for Credit approach we need set of trigger rules that roughly balances credits over years. Fill the credit account with relaxations.
- C: Pros: predictable; no conveyance problems; less management
 Cons: average, but benefits vary. Can’t trade assets. Water may not be available in all years (we can’t multiyear store credits like you can EWA water. You don’t have own assets.
- C: all three approaches are tied to increase delta demands. Credits are toward prescriptive standard relaxation.
- C: Contracts are automated rather than a variance procedure.

Q: Do we contracting and EWA and Credit gaming at same time? R: NO Different baselines.
C: Contracting will add complexity to our daily model gaming.

Agreement:

- Two games – EWA and Credit games
- Intent to satisfy everyone.
- Same infrastructure
- Check back after each year in game.
- Will require more prep to get ready for Credit game
- Games will be head to head with similar resource base.
- Games will have \$30 million each as base. Both can borrow.
- Use same set of years as before.
- Include WQ and WS in each of the games
- Operators should participate.
- Should consider other means than water if too costly or not feasible.
- Find out which tools are most effective for fish, WQ, and WS.
- Need Russ's scoring for biology in both games.

Assignments

- Art will check on targets for urbans; Dave will check for CCWD.
- Victoria and connections – Ron
- Credit approach – Sprecht and Bruce
- EWA – Dave Fullerton
- Efficiency in Stage 1 – Ron

Next Meeting

- 9:30 Thursday.
- Gaming next Tuesday