

American River Brainstorming Workshop

MEETING DATE AND TIME: 9:30 am - 4:15 pm

MEETING LOCATION: West Room, Sacramento Public Library, 828 I Street, Sacramento

MEETING OBJECTIVES:

- Developing a shared understanding of significant issues
- Idea generation around solutions (e.g. suggestions for operational and infrastructure changes, habitat restoration projects)

Item			
#1	9:30 am	<ul style="list-style-type: none"> • Registration • Issues Identification Exercise 	KW & USBR Staff
# 2	10:00 am	<ul style="list-style-type: none"> • Welcome and Introduction • Today's Agenda and Objectives 	Mike Harty
# 3	10:20 am	<ul style="list-style-type: none"> • Intro to Reinitiation of Consultation on Long Term Operations (ROC on LTO) Idea Generation Phase • Explanation of Functional Analysis (Presentation) 	Katrina Harrison
#4	10:50 am	<ul style="list-style-type: none"> • CVP Operations Overview (Presentation) • Q&A 	Peggy Manza
	11:20 am	BREAK	
#5	11:30 am	<ul style="list-style-type: none"> • Biology Overview (Presentation) • Q&A 	John Hannon
#6	12:00 pm	<ul style="list-style-type: none"> • Issues Discussion 	Mike Harty
	12:30 pm	LUNCH BREAK	
#7	1:45 pm	<ul style="list-style-type: none"> • Idea Generation Exercise 	KW & USBR Facilitators
	2:50 pm	BREAK/Transition Time	
#8	3:00 pm	<ul style="list-style-type: none"> • Small Group Reports and Discussion 	Mike Harty
#9	4:00 pm	<ul style="list-style-type: none"> • Next Steps 	Katrina Harrison
	4:15 pm	Adjourn	

Action Items from Morning Presentations & Discussion

- Pull together documents (“new information”) that justified re-initiation and distribute to the group.
- Schedule interested party kickoff meeting for power customers.
- In the diagram depicting the ROC on LTO pre-NEPA brainstorming process, make the purpose of the “integration” workshop more explicit (i.e. addressing the need to balance operations across the system and not be so Shasta-heavy).
- Include additional Water Forum representatives to the attendees list in the future (i.e. Coordinating Committee) – get Tom’s list.
- Consider allowing other stakeholders to listen in as “observers” at agency meetings.
- Prioritize getting more NGOs to participate in these meetings.
- Send out a link to all the materials and presentations from this meeting to attendees.
- Compile drought studies and distribute to attendees.

Idea Generation Exercise

Table 1: System-Wide Issues

Facilitator: Terra Alpaugh

Notetaker: Elissa Buttermore

American River Issues (identified in AM exercise)

- Identify additional options to improve WQ management through other reservoirs than Folsom (salinity calls) [one sticker]
- Delta cross channel closures to reduce salmon strays on return and outmigration survival
- survival below Sac confluence [one sticker]
- integration with CVP issues: 1) reduce demand on Folsom releases for purpose’s below LAR by better integration and re-evaluation of regulatory requirements in Delta. 2) Improve flood management with JFP and WCM to maintain high carryover storage.
- How will Oroville and COA issues be addressed?

- Schedule Shasta releases to take pressure off of Folsom as first responder for Delta water quality.
- outflow requirements
- Am. has stress because of obligations outside
- tensions between Am. fish and delta fish being managed
- process incorporates water manual
- relationships to other groups
- unknowns associated with Phase II WQCP update
- hydropower market flexibility
- How will CVP power costs remain competitive? [one sticker]
- schedule power generation during peak periods
- assure all generators are in operation, if necessary contract out repairs to private companies
- scheduled maintenance of 3 power units-avoids high flow seasons
- appropriate steelhead brood stock [one sticker]
- hatchery produced fish overwhelm naturally produced fish
- hatchery impacts on natural origin fish [two stickers]

Ideas Generated

- When there are curtailments, optimize release schedules for multiple benefits
- Ability to move water more flexibility → water rights
- Gate closures for water quality vs. salmon survival: side channels weirs
- Flexibility in X2 requirement
- Look at efficacy of actions outside American
- Pulse from Shasta for spring run
- Timing for scheduled maintenance—to maximize power generation
- Bigger reservoirs
- Raising Folsom (Shasta?)
- Better optimize storage vs. flows
- Build Auburn [reservoir] – [in conflict with] ESA listed species and tribal artifacts
- Better tools for modeling to see how all projects can equitably meet Delta needs [better than DSM2]
- Coordination of pulse flows of Shasta and Oroville (role in LTO)
 - Concern: water quality
- Terminal fishery (downstream imprinting)
 - Side-channels and weirs
- Emphasize non-flow solutions
- Municipalities take actions to reduce turbidity (below Sacramento)
- 100% marked select fishery (fall-run Chinook)
- Super-impose turbidity to facilitate out-migration with less predation

- Terminal fisheries
- Use Nimbus to flood during drought years
- Water quality concerns and challenge bureaucratically > Nimbus- gates change release -> increase turbidity

Summary of System-wide Discussion

External pressures strongly influence the issues on the American river. Interested parties are concerned with how other components of the CVP and SWP adversely impact the operations at Folsom, and consequently the ability to meet their needs. Interested parties would like to see Reclamation better communicate the burden placed on stakeholders to meet the needs of the Delta. Reclamation should identify actions to improve water quality management consisting of outflows from reservoirs (e.g., Shasta) other Folsom. Additionally, Reclamation should re-evaluate the regulatory requirements in the Delta to reduce demand on water from Folsom Reservoir. Water could be used more efficiently if we improved flood management with JFP and WCM to maintain high carryover storage. It was suggested that more reservoirs be constructed and that existing reservoirs be raised to increase storage capacity.

The group expressed the need for better coordination within the CVP and SWP. For example, the need for Oroville and Shasta to coordinate pulse flows to more effectively provide cues for fish migration. A rule could be proposed that requires the dams to coordinate with other dams when arranging pulse flows. Another coordination need expressed by the interested parties group is that Folsom should avoid scheduling maintenance for power during times when water was available for power generation, so that power generator is not sitting idle unnecessarily. In other words, Reclamation should avoid scheduling maintenance during high flow times. Another need expressed by the interested parties was that release schedules should be optimized during curtailments to benefit all water users.

Interested parties were concerned about how other regulatory processes (e.g., Oroville, COA, and CalWater Fix) would affect the American River. There was some discussion about the uncertainty surrounding these processes, therefore it was recommended that we shift the discussion to focus on what actions we could take within the American River to improve conditions and meet the needs of the interested parties. The ROC on LTO process includes Integration Workshops that will consider the entire system and trade-offs between water releases at different reservoirs.

Hatchery and Other Fish Management

The group discussed some issues with fish management. Fish require a number of different environmental conditions during the summer—not just flows. Meaningful metrics need to be developed in order to accurately account for management actions. There is a need to improve and create new predictive tools to support management decisions. Creating multiple terminal hatcheries would help provide more spawning habitat. One idea that could help re-nourish spawning habitat would be to operate Nimbus Dam in a way that drains it, but it would provide

a flood pulse while not requiring any releases from Folsom. Dam operators could also manipulate the releases strategically to allow for turbidity increases downstream that could provide refuge from predators for young fish.

There was some discussion on how hatchery fish may impact wild fish. An idea was to use 100 percent marking methods on hatchery-raised fall-run Chinook salmon to better monitor fish and reduce harvesting impacts to wild populations. Marking all hatchery fish would enable people to easily identify hatchery fish, allowing them to be targeted for harvest. Installing a weir and only allowing wild fish to move upstream could help reduce hatchery fish impacts to native fish.

Table 2: Habitat/Funding Issues

Facilitator: Mike Harty

Notetaker: Armin Halston

American River Issues (identified in AM exercise):

- Stable flows to minimize potential for Redd Dewatering
- Return on investment, many dollars spent with no real results, don't throw good money at bad projects
- Dedicated sustained funding to improve Lower American River habitat (side channel rearing, spawning, etc.)
- Need for emigration pulse flows
- Timing of floodplain inundations
- Spawning habitat volume
- Rearing habitat volume
- Flood plain/ rearing habitat
- Is non-jeopardy feasible? Impossible or unlikely for some species
- Lack of biological performance based requirements
- Operating for recreation without funding
- Flood concerns and recreation limit habitat- management opportunity
- Redd Scour
- Fish stuck above weir and leaky weir
- Prioritize CVPIA for annual gravel additions into the Lower American River
- Expedite permitting to avoid delays in gravel placement
- Gravel Augmentation below Nimbus combined with high flows to sort gravel, promote POM filtering and primary production
- CVPIA dollars are not unlimited, prioritize and set limits

Ideas Generated

- Increase monitoring to show results and support conclusions about rate of investment

- Identify an additional funding source to supplement CVPIA
- Fish and Wildlife habitat management element “All the best available science”
- Improve prioritization for spending and include process and who participates
- Create the most habitat that’s useable for the least water
- Habitat is a proxy for survival- indicators for operations
- Plan habitat modification- Type, deficiencies, design, how much and predation
- Limit/ manage water cost for pulse flows
- Consider water pollution and fixes as a way to benefit fish (E.g. tertiary Treatment)
- Explore changes to funding structure for CVPIA
- How much habitat is needed- Develop habitat improvement program to accommodate varying water year types or supply
- Coordinate habitat generation with flexibility of operations
- Methodical evaluation of the missing habitat and why, informs funding decisions
- Methodical evaluate of stressors that are impairing fish in the Lower American River
- More off-stream habitat could replace some reservoir storage reserved for flood control, allowing for greater flexibility for other purposes

Notes from group discussions:

Group 1

Rod- Wasn’t a common understanding of an operations plan, Peggy please detail

Peggy- An operations plan details the guidelines to operate a system to meet the needs sustainably with equal and balanced set of goals

Dan- You have to do’s, and I can do’s, Can’t lose focus of what you have do to

Dan- Habitat can be divided, needs water management and non-flow activities

Ben- Expanding habitat projects and flow is handled by the standards

Mike- Habitat equals flow

Rod- Habitat can be divided by three categories, all driven by flows, CVPIA has funded many habitat projects

Ben- You can design habitat enhancement within operations

Rod- Seasonal inundation needs to be built in to operations

Shelia- Plan habitat modification, look at predation

Tish- Funding is a problem during drought years, due to lack of power generation

Rod- Coordination of habitat generation with operational flexibility

Shelia- Biological performances, such as growth rate need to be included

Ben- It's hard to have the same performances for all rivers

Rod- Need more rearing habitat according to models

Shelia- Habitat is not just rocks and water but also food, first biological performance could be fish presences

Group 2

Mike- Need to maximum perennial habitat while seasonal habitat is flow dependent

Jessica- Different standards on different rivers, pulse flows connects habitat in the floodplain

Mike- Everything needs to live within the budget

Ammon- Pulse flows would affect power production

John- Pulse flows don't need to be extra, can be shaped, what are the conditions that are needed

Shane- There are trade-offs

Jessica- What conditions are needed and when

John- Most habitat with the least amount of water

Shane- Water has multiple proposes just not to house fish

Jessica- Only so much cold water

Shane- Giving water is not sufficient if the water is polluted

Jessica- You should conduct monitoring to get the best bang for the buck but monitoring is always the first to go

Shane- Further water treatment is needed at sewer plants

Jessica- Water pollution in the winter is worse than summer

John- If we are paying for habitat enhancement with no change in abundance, Why?

We need to recognize the "why"

Jessica- You can use pluses to help water quality, if we know where the Redds are we should be able to model what is needed to keep them wet

Group 3

Garwin- As much gravel as they need, should be the answer

Steve- CVPIA funding is not unlimited and needs to be prioritized spending

- No return on investment

Mike- Who makes the habitat funding decisions

Steve- CVPIA not enough spent on monitoring with intent to see increase in abundance

Ammon- CVPIA is a small bucket to cover all environmental issues

Steve- Drought years are on the CVPIA because power money is not there

Tom- Where is a CVPIA status report for the last 30 years?

Steve- Monitoring needs to be directly connected to funding, don't spend money without monitoring built in

Jeni- Upstream habitat is good but needs to be engineered

Table 3: Cold Water Temperature Issues

Facilitator: Cici Vu

Notetaker: Luke
Davis

Group 1:

Russ, Tom, Garwin, Frances, John Hannon, Jeni

Group 2:

Peggy, Steven, Greg, Mike, Sheila, Greene, Dan, Ben, Ken

Group 3:

Jessica, Rod, Shane, Sheila

Group 1

- Temperature increases below the Nimbus dam, would be good to add a bypass.
 - o Question: What's the source of the water to Nimbus? Answer: Cold snow melt.
 - o Question: Was a bypass brainstormed at the agency workshops? Answer: The agencies' brainstorming list shouldn't be used to influence ideas right now.
 - o Would be useful to have a dedicated bypass facility to move cold water.
 - Garwin commented he wishes to add a "happy face" to that idea.
 - o John Hannon commented: Would be good to change Lake Natomas back to a river.
 - It was suggested that Nimbus dam could be removed.
- Frances: What is Nimbus dam's purpose?
 - o Answer: Regulates upstream of Folsom. Helps with flexibility regarding power peaking*.
 - It also makes Lake Natomas smaller.
 - o There's still issues of heating between Nimbus and Folsom dam.
- Power peaking upstream of Folsom dam could be considered.

- Question: Do the same customers take power from Folsom and upstream?
Answer: Probably not.
- Question: How often were the temperature shutters on Folsom dam taken apart in smaller segments? Is it necessary? Answer: The temperature is not met most years, so it is necessary.
 - Due to the drought, 2017 was the first time in a while, if not the first time.
 - It would be useful to remove the current intake and modernize it.
 - This is part of the current Folsom dam (Corps) project and may eventually occur.
- Would be useful to reconfigure habitat on the American River.
 - This is limited downstream due to the current levee system.
 - More shading along the riverside would help with temperature and habitat.
 - The levees would have to be widened and that's not possible.
- There's also the issue of the dead pool space (area of cold water, behind Folsom dam) and how to utilize/acquire it.
 - An elephant trunk may work, or some form of pumping.
 - Settlement contractors would find this problematic.
- The American River Water forum showed that cold temperature and water deliver goals are not collectively attainable. Maybe a modified flow regime would help.
- Moving temperature compliant point upstream would be useful.
 - Would also be useful to consider this on an annual basis, not just once. Similar to what's being done on the Sacramento River.
- Question: Could a fish ladder over Folsom dam work?
 - An actual bypass would likely be better. Use of fish cannons would be another idea.
 - Getting fish over Nimbus dam would be probably easier. An Olympic Kayak course exists by Nimbus dam, could act as a bypass.
 - Removing Nimbus dam would require an act of Congress.
- To discourage the bunching of spawning nearby Nimbus, it may be useful to construct an inflatable weir downstream to encourage spawning there.

Group 2

- Dan Corcoran suggests looking over the 2014 Value Planning Study related to Structural Improvements on the American River. There are similar ideas to those being proposed in this workshop.
- The shutter system on Folsom Dam is offset. This leaves a gap where cold water is not being utilized.
 - Leakage issues need to be fixed as well.
 - The current Corps project would address most of these issues.

- Ben suggested the use of an additional tool for future analysis. The CEQuaW2 (Water Quality temperature) model. This has been shared with the Bureau of Reclamation.
 - o This is not an operations tool, however.
- The use of fiber optic cables to improve data collection would be useful.
 - o There is an issue of theft if this was implemented.
 - o Peggy commented that the temperature profile information is already very complete and not much of an issue.
- Question: Regarding the cold water pool, are there any early actions to be taken?
 - o Avoiding use of the lower level outlets and max peak storage.
 - o Mike Tognoli* (EBMUD) suggested their willingness to store extra water in the first year rather than the second year. Dry-year carryover storage. Contracts would forgo supply and leave water in the reservoir.
 - Policy level would not allow for this rescheduling.
- Sheila commented that temperature is one aspect of habitat and shouldn't be considered separate from other habitat stressors. Other stressors may be as or more important to focus on.

Group 3

- A temperature control device, similar to Shasta dam would be useful.
- The connection between cold water temperature and additional riparian vegetation should be looked at.
 - o It's questionable as to what riparian vegetation can do temperature-wise.
 - Geographic shading tends to be more important than vegetative shading.
- One idea is to build tributaries coming out of the dam sides to promote spawning habitat.
 - o A spiral version (i.e. condensed spawning run) is another idea.
- An analysis on cold water and its benefits to listed species/habitat should be conducted.
 - o Would be nice to know the economic value.
- More focus should be done on habitat quality and less on flow.

Table 4: Miscellaneous

Facilitator/Notetaker: Ben Nelson

American River Issues (Identified in AM exercise)

- Fish passage for steelhead past Nimbus/Folsom Dams
- Increase groundwater storage in CVP contractors' service areas
- USBR to prioritize groundwater storage
- Take into account cost and consequences of proposed plans
 - o to all functions

- Use results to set reasonable limits
- (Give this high priority) Address the problem of invasive predatory species *
 - No catch and release, must take
 - Remove size and take limits
 - Active removal programs
- Lack of non-power and water representation – need to integrate into combined ROC meetings
- Lack of representation of Water Forum parties (20 years of collaboration) *

Discussion Notes

- Groundwater bank needs to be acknowledged – American River bank ready and willing
- Utilize groundwater to keep water in Folsom and/or release water downstream at different times
- Needs to be holistic with state
- Less stress on system
- Basin Plans
 - Climate Change is not a project obligation to mitigate
 - Help species adapt
 - Nuts to insulate species from climate change impacts
- X2 with possible sea level rise
 - Operations forced to mitigate not within control
- Facilitate transfers – specifically CVPIA
- Advocate to leadership – elevate policy decisions – Fight for regulatory balance
- Balance demands/requests
- Supportive of FISH Act to pull NMFS anadromous program into DOI (Calvert bill)
- Other factors
- Is it possible to achieve non-jeopardy? Look at CVPIA doubling goals
- Need cooperating from agencies, even if it is still doable?
- Inform Commissioner of power issues – what's happening during drought with power
 - Proactive discussions – Reclamation and FWS – Secretary, assistant secretaries
- Maintain function of snowpack – bypass flow
- Spring power surplus
- 2019 off-ramps if no economical
- Avoid ISO markets – ISO tariffs – negative pricing – bill if can't spill
- Regulatory constraints
 - Less reliable means higher costs (acre feet and megawatt hours)
 - Big power too high leave, need to stay competitive
 - Hydro > 30 mw not renewable RPS (only Nimbus and Lewiston)
 - Accountability for work/success of regulatory constraints

