

Matilija Dam Ecosystem Restoration Project
Fine Sediment Study Group
Thursday, February 24, 2011
9:30 a.m. – 3:30 p.m.
Pacific Conference Room

Meeting Objectives:

- Approve Charter
- Consensus-seeking on problem definition and data gaps
- Briefing on available funding
- Brainstorm alternatives for further analysis

Bob Thiel welcomed group. Introductions around the table were made. He discussed objectives of the meeting and constraints. Will the solution contribute to basic environmental goal of naturally sustaining system? Might be severe impacts on habitat; must prioritize the impacts and what they will be. Reconciling will be tough; lots of consideration and cooperation needed to come up with solution. Need everyone's ideas about design solutions; info needs; and concerns individual agencies have for different solutions. Need to look at how to refine 4b. If alternatives to 4b, they need to be flushed out at today's meeting. Need people to identify issues and concerns and each think about how those can be dealt with in terms of further info/studies for technical assistance. Tough issue; tough crowd; wicked problem. Great ideas and intelligence.

US Army Corps of Engineers – Darrell Buxton
US Bureau of Reclamation – Blair Greimann
State Coastal Conservancy – Bob Thiel
WPD – Jeff Pratt
Dept. of Fish and Game – Shawn Carlson
Meiners Oaks County Water District – Mike Hollebrands
Matilija Coalition – Paul Jenkin
NOAA – Brian Cluer
US Fish and Wildlife Service – Chris Dellith
LA Regional Water Quality Control Board – L.B. Nye
Ventura BOS – Steve Bennett
Casitas: Steve Wickstrum, Russ Baggerly
Ventura RCWD: Bert Rapp

Action: REVISED CHARTER ADOPTED with addition of three alternates: Ventura River Water District, CalTrout and Patagonia.

SELKIRK:

Mary reviewed the agenda. Some Priority data gaps listed on room charts – she tried to pull together from all the votes/dots that were on last meeting’s flip charts – she combined into 3 major areas: 1) water quality/supply 2) general questions to modifications to BRDA 3) natural transport. Help us organize thinking today in terms of being able to reach some agreement on general problem that needs to be solved...what scenarios should be understood more deeply and developed and what data gaps those scenarios should address.

Went over the objectives of today’s meeting: 1) Agreement on a problem - the data gaps; 2) Start to brainstorm the needed information that all the project funders and everyone at table needs to know more about to drive toward a workable solution to the fine sediment problem. Briefing in the afternoon with people who have funding or not to provide some kind of framework for looking ahead as to what funds are may be available for additional investigations; whether it’s buying more time at the Corps; whether it’s buying more time from the Bureau; whether it’s inviting in outside technical expertise. You need to know whether you’re looking at \$50,000 or a half million dollars.

Prior discussion related to BRDA fine disposal area. As Russ stated at prior meeting, need to have clear idea of being ready to go when funding is available. (Russ: Should be the foundation upon which to build consensus). Run BRDA to the ground. Before jumping into details, asked everyone to consider agreeing on some version of problem statement:

- Can BRDA/4b be modified to be buildable and affordable?
(Does that capture the essence ... not wedded to language.) Add, delete or suggest modification.

Baggerly: Buildable would include not reaching 20% trigger for reauthorization.

Pratt: Define terms “affordable” and “buildable, constructability.”

Selkirk: Buildable: umbrella term for technically feasible from a slurring engineering water quality protection standpoint.

Pratt: 4b is constructible ... so does that mean modifications being constructible? Not 4b being constructible.

Buxton: Yes 4b is constructible but not affordable. BRDA is the four sites.

Pratt: (Suggested language change): *Are there modifications to 4b that make it more affordable and/or constructible?*

Bennett: Making it clear: *4b is ALL four sites.*

(General agreement.)

Thiel: *Clarifying statement:* During DOG meetings concerns expressed by the CORPS about how technically complex 4b and BRDA solutions were. Have issues been resolved internally so that any changes needed to be made in present configuration are ... (lost audio) technical capacity of contractors or management resolved?

Buxton: Was risk reduced to zero? At this stage – no. But it was a doable alternative but took more thickening and drying than in feasibility study; it was doable. Expected cost was issue. Can we do the same type of thing with less money; the same question being entertained with this group.

Cluer: Not sure there's enough info if it's doable from perspective of how it's maintained in order to perform as expected for delivering sediment in future sediment delivery events. How it will actually perform is a data gap.

Selkirk: Requested feedback from others on problem statement.

Bennett: At 1st meeting, Pratt identified there's a big push to explore notching option; notching the dam down; statement was we don't know if it's doable but we need to run 4b into the ground so we have that. If this is our problem statement we may be saying we're not exploring the notching option. That's the questions. The notching question primarily came from Patagonia so is the problem statement trying to decide between notching and 4b or is someone saying that notching should be run to the ground as well as 4b?

Jenkin: Separate question. Question 1 was 4b; question 2 was hybrid.

Bennett: Wanted clarification on problem statement ... is this 4b?

General agreement that this problem statement was for 4b.

Selkirk: Should there be another problem statement for fine sediment disposal that captures what you agreed needs to happen? I hear that this is one statement, which is can BRDA 4b be modified that make it more affordable and constructible. I hear a second problem statement: are there other hybrid alternatives that would make it more affordable?

Bennett: They keep being raised so if we leave them still hanging out there we don't end up

Selkirk: I thought this word basically embodied the universe of modifications ...

Bennett: That's a little than Paul's statement saying it's a whole separate statement.

Pratt: Third thing that might be implied: running 4b to ground; modifications of 4b; and then there's a third category that Bennett raised - maybe it's not BRDA but something else. Might have three components of the statement.

Selkirk: Study group agrees on the following that needs to happen: run 4b to ground; look at modifications that make 4b more affordable and constructible, and consider hybrids or alternatives that include potentially include notching the dam.

MATT: I was viewing 'modifies' the same as hybrid. Are there modifications? 4b is possible but unsure if there are others. Other options are feasible; based on events around the US. We could use terminology that implies that we know 4b is possible but we're not sure if there are other feasible options that haven't been explored.

Selkirk: 4b is the authorized solution.

MATT: That's fine.

Bennett: They may be feasible in other places but we don't know for sure if they are feasible on this river with a water district underneath it. Need data to back if they are feasible here on this river (in response to Ventura River and Water District).

MATT: My point is that other options that are being implemented or have been implemented don't involve slurring. Not aware of any project like this with this kind of slurry option that has been done.

BENNETT: But to say that the others have been feasible in other rivers, we need data to show that those other options could be feasible with the water district.

Thiel: What do you mean by running 4b to the ground? Is it 80% design? Or taking current studies or does that mean further analysis?

Buxton: Speaks to the steps that Josephine spoke of – grey zone of what triggers new environmental docs and reformulation and reauthorization. These move in steps---run 4b to the ground, meaning you can tweek similar to what we've been trying to do with the MODA combinations, the upstreams, the hybrids; we've got some room to move and there are some issues as we talked about with even continuing with 4b but that first step is the lowest step that we can take and still move quickly.

Selkirk: Does that include cost review and where possibilities for cost reductions? Last time you went through line by line on "here's how we got from 'x' million to this 'new' x million.

Buxton: From this group, we'll identify gaps that need to be addressed. That will result in a new table that says what this new run 4b modified to the ground.

Selkirk: To you, running 4b into the ground means from an engineering standpoint.

Buxton: That was my other point related to the constructability issues – something that Bryan said is there's the whole permit issues; technically it can be constructed but politically and environmentally there are questions to be answered. We have an approved EIS/EIR related to that that we could ___ more from. If cannot come to agreement on that level of refinement of 4b then we would say, what else can be done.

Pratt: Agree with Buxton. What we never really got from Brian, LB, Fish and Game, Fish and Wildlife is what they wanted from that ... what the problems would be. We found when we started proposing components, we found people who had agreed to the environmental docs, who now wanted for example further mitigation on a project component basis or they disagreed with the way we were implementing it. To fairly compare with 4b to everything you need to discuss, you're going to need further information. The other thing is when we get to talk about reauthorization funding, reauthorization for funding alone, just a funding issue, it's not the same as reauthorization for a major project change. That needs to be run to the ground with the refined cost estimate.

Nika: Degrees which you can run to ground but makes most sense to look at most like impassable hurdles first: 1) feasibility as opposed to constructability (includes politics, etc.) and 2) affordability. Is there a way to make it affordable? If not, move on ... go to the next level.

Baggerly: Running 4b to ground ... look at it closer as the foundation with modifications that the group can come up with to make it acceptable to everyone within the parameters of the adoptable environmental documents. Look at it closers with some mods that this group can come up with to make it acceptable to everyone.

Selkirk: I don't want to spend a lot of time on terminology We started out with a single statement that was meant intentionally to be an umbrella statement that you have added to some specifics to or modified – can BRDA be further developed or modified to be feasible and affordable.

Matt: Agree with Russ with terminology. "Fleshing out" might be better term. Main point is there's enough interest to look at alternative to modifications of 4b and hybrids. Better to do them simultaneously.

Josephine: I'll add to what Nika was saying that there are things that were identified early on that makes it impossible then ... (lost audio). Thought there was consensus at the first couple meeting that

we really wanted to make sure we did that before we moved on; you're saying to do them simultaneously as opposed to ...

Jenkin: Seeing getting stuck in process. Mission statements and problem statements are part of the facilitative process. Concern being expressed that things are being funneled down into constrained opportunities that all opportunities are not being seen. Recommended talking about specifics as opposed to wordsmithing and other mission statement. See all brainstorming ideas. What we have there outlines the broader ideas. Specifically to modifications to the 4b; specifically to the hybrids in the document I prepared last year.

LB: People attached to this because we have environmental docs and it's already a project. Army Corps of Engineers is probably concern is "going back and start again." That could delay the project by another 10 years. See the problem and questions in terms of 4b; not because they don't want to think about the best options.

Motion with general agreement: Here to do 3 things today – revisit data gaps on 4b and BRDA; to look at potential modifications to that and also alternates/hybrids that may speak to feasibility and affordability.

Selkirk: In looking at data gaps sheet; a compilation done at last meeting; data gaps are identified on flip charts that had more than one dot at the last meeting. One suggestion to think about: make it more grounded by considering given we are starting with baseline of approved project that's proven to be highly complicated and very expensive with some unknowns .. issues raised ... fishery effects, etc., sediment, etc. Themes that emerged last time: investigating fine sediment effects on diverters; how to reduce costs on BRDA project designed to date; looking at scientific evidence with respect to sediment transport or hybrid options for BRDA option that would include notching ... just what we are talking about-these 3. Continuing to look at what's constructible, feasible, for 4b modifications and hybrids and notching.

Provide 2 or 3 scenarios you would like to see investigated that would embrace the data gaps already mentioned. (Take 15 minutes)

Russ: Natural transport; water supply; slurry. 4b and 2a require / suggest that slurring will take place. That is good for Casitas; protects their water quality. If there are going to any mods to slurring, data gaps need to be filled for their ability to divert during high nutrient sediment transport. Won't be able to divert normal NTU water; if it's laden with organics not going to want to. Might lose opportunity to divert. Look at mods to slurring.

Greimann: How much water would you lose?

Rick, NOAA: How much of a storm event do you already bypass?

Wickstrum: Operate in accordance with biological opinion for Robles that puts requirements for releases for fisheries benefits.

Jenkin: What Russ is talking about is some form of notching scenario as a modification.

Russ: Yes and could be all of the above. Have to think about the natural transport of those fine sediments that are filled with organic material – a real problem for us. It's not fine sediments alone; it's the organic material that could get into Casitas and create an algae bloom and kill all the fish.

Rick: What are the background levels of nutrients in Lake Casitas? What's currently being done to treat algae in Lake Casitas? Need to know that and see how much worse it would be over the course of the project life.

Jenkins: Project getting more expensive every time it floods.

Bennett: What are the data gaps?

Jenkin: Look at engineering feasibility and water quality changes and impacts.

Pratt: Downstream liabilities as well.

Jenkin: It would alter baseline because would see transport sooner.

Pratt: Alter the baseline that is in environmental document?

Greimann: In addition to proposal of the upstream sites, I think the objection was permanent stabilization more so than leaving sediment up there. In addition to notching was using another hybrid to leave some of the fines upstream unstabilized?

Jenkin: I did suggest it might be possible to put some under the road or something like that or incorporate into the feasibility plan sediment storage areas.

Pratt: Baseline .. might need to be revisited.

Selkirk: How would that work?

Pratt: If we don't get the project done, there's a without project, that will be the baseline. In theory you'd be dealing with all the sediment in the baseline condition and because everything's being renegotiated this has been opened up again. It needs to be realized there's a possibility the project won't get done, in which case, we'd be dealing with real impacts. If comparing the impacts of the

project we have proposed to those impacts, we don't have any essentially from a fine sediment transport perspective.

Baggerly: 2.2 cubic million yards didn't change in the project baseline and if you brought the notch down to the existing silt level it's still 2.2.

Pratt: You're right; there's a little bit that's added in some of the discussion we've had with the modelers.

Jenkin: 2004 without project as the baseline.

Selkirk: Model for redefined "without project" alternative.

Greimann: It's how you compute the mitigation cost. What it's relative to. What the water loss relatives to.

Wickstrum: Close to equilibrium now – what comes over Matilija Dam – particularly fine sediment loads.

Buxton: Data gap is what does additional 2.2 million cubic yards add.

Wickstrum: Add one more thing: What is the 2 million cubic yards truly composed of? Everyone has lost sight of what is contained and we need to take a look at the drilling logs and at the components are within those drilling logs to understand that there's large peat masses, large decomposing organics within that area, we're not just dealing with some clays and silts. When we go to any of the notching options, what is going to be released out of that 2.2 million cubic yards that is going to contribute to the current flow that's coming into Robles.

Pratt: Is that a data gap? The composition of the fines?

Wickstrum: We know a lot about it – the organic content; there's methane, etc. But when we talk baseline we're talking about additives to that baseline and going beyond when we release this it's going to be additive to what that system's already carrying. I think the data gap is providing what was just said before ... baselines into Casitas; baselines within the system itself and what's going to happen when this 2.2 and its contents are released – what it's going to add given the type of hydrologic you have.

Pratt: We were passing it by Robles during the feasibility study.

Baggerly: That presupposes that we're not going to slurry ..

Selkirk: Someone mentioned last time .. should we be looking at a hybrid of 2a and 4b?

Thiel: The hybrids that I heard were some combination of partial slurring; partial natural transport and the possibility of Storage. Some variation of those ... some may not have all three components. Can the MODA site be used such that it's a temporary site to reduce the downstream slurring costs?

Selkirk: That's another data gap.

Jenkin: This is what they call optimization in engineering. Can project be optimized by doing a combination of those things mentioned. Slurring is most costly measure in the whole project; anything that can be done to reduce the amount of slurring will reduce project costs. If we can optimize reservoir area design and downstream BRDA design and notching scenario ensuring we not impact water supply. It's a combination of what's feasible and what's cost effective. The original idea was the whole thing would be done in 3 years – and it's now 10 years later.

Bennett: Appreciate statement that Paul made – optimizing seems to be what most people are talking about. Does anyone recommend we go to full notching alternative, natural transport and no slurring. If they are, we need to say it. If no, let's not spend time on it. If you go to natural transport, what's the impact on Casitas?

Jenkin: In order to bound the problem, you need to do the analysis; might not be what's done but for optimization you want to look at natural transport of all; slurry all; then work within those bounds. In my white paper I outlined a scenario where you might design something that could control when and how much fines are released and potentially work with water district to not divert at wrong time and divert at different time.

Buxton: Optimizing ... appreciate what Paul's saying. On Corps perspective – it sounds like “do a new study.”

Josephine: Corps would call that value engineering ... look at some of what Jenkin is saying. Optimization works up to a certain point.

Jenkin: Full notching was already looked at it for the purpose of bounding the problem in feasibility analysis. Now I'm saying if we're looking at natural transport if notching in a controlled fashion, bound that in terms of cost effectiveness and environmental and other impacts. Not saying start over. Type of technical analyses needed before making an educated decision.

Pratt: Don't disagree that there are real challenges with notching.

Selkirk: Modified scenario or scenario all its own?

Pratt: In bottom of the 3rd scenario.

Pratt: We would put up ideas for modifications first so we could discuss gaps. We've gone into gaps first and jumped back and forth. Let everyone put up modification ideas and then discuss gaps.

Cluer: Interested in managing less of fine sediment and that means figuring out what the impacts are to water treatment. Reducing costs by slurring less fines and what does that mean? Is it window of time when diversions need to be larger? If there's a slug of organic going into Casitas, what does that mean for water treatment?

Jim: Natural transport associated with notching: Should we still have on the table the notching scenario that includes natural transport of all fines or just a portion of the fines and you'd stop with some sort of sequestering of them via slurring or some other method?

Jenkin: Saying if optimization study, you bound it with those two extremes just as we did in feasibility.

Thiel: Is there a distinction between full notching and the kinds of analyses on the water quality impacts to Casitas and what full natural transport would mean?

Jenkin: There is a water cost to slurring so if you can do that cheaper and still use 4500 acre feet .. that's what I mean with optimization .. whether water is diverted or not diverted .. there might be ways to work with water costs.

Voice: Is there is a distinction between studying full notching, ensuring that kind of analyses that need to make on water quality impacts to Casitas and the water districts include the full natural transport.

Selkirk: Are there other ideas out there or new scenarios or data gaps?

Matt: One scenario would be construction of a temporary coffer dam immediately upstream of Matilija reservoir. Instead of slurring past Robles diversion so there's not issue of them getting fines. The dam would also give total control over managed notching; how much flows into the project. The pipeline carrying sediment past Robles in the high flow bypass would ensure during the whole process that they're getting the water they water upstream of the project.

Nye: That scenario ensure that water quality concerns are met but not for the river as a whole. Still concerned about the effects on the habitat of the river as a whole and how long fine sediments are in the Ventura River and the potential for algae blooms in the river itself.

Selkirk: That's true to any scenario, isn't it?

Nye: Yes in any scenario – not just what goes to Casitas but what goes down the River.

Cluer: Clarify – that’s a temporary dam during construction? (Yes)

Matt: The good thing would you would have more control – 2 points of control. At any time you could bypass the project site or wait until a good flow to flush material out quickly.

Bennett: Matt – you have fines that are stacked up right now all the way up against the dam so would the temporary dam would be back ... up river .. to get the fines back up behind the dam?

Matt: (Drew on the easel.) I’m suggesting building a temporary coffer dam ... 500 cfs .. instead of slurring material past we build 2 pipelines ... 1 or 2 ... that can carry the 500 cfs and it passes the project site, comes down (here) and is able to go directly into the Robles Diverson. The high flow bypass .. this is also easily managed so that when’s there’s enough flow and we’re ready for it in combination with notching we can open this diversion up and flush the system and even while that’s happening you can still be taking water that’s the best water that Casitas is going to get and put it in the pipelines ... it seems like this could be a hybrid of 4b instead of talking about pipelines and slurry pipelines it’s more talking about pipelines delivering high quality water and allowing material to flush downstream and save a lot of money.

Bennett: So you would then during high flows when the dam is down you would have natural transport of the fines .. 2 million cy of fines that are behind the dam. (Right) Those would be natural transport? (That would be going past in the high flow bypass; Casitas would shut down the intake and be flushing everything past but even during that scenario – a high flow – Casitas could still take the 500 cfs straight into their canal.

Nye: How many years (storms) would this take if you were only moving things through during high flows.

Matt: One more twist tying into 4b hybrid approach. You could add short section of pipe that goes into one or both pipelines along with a short section (indicates here on drawing) to use as slurry setup as well. Alternate pipelines between carrying fresh water into casitas or transition into a slurry directly into river.

Matt: Bring the dam down in a couple of big steps. Slowing bringing the notch over time you also build in a flashboard set-up of a 20’ notch where you have controls in it that you can remove and allow material to flush.

Voice: This would be a pretty complex design for a coffer dam that would have to last for a long period time; would have to divert water into the pipeline system to allow water over the coffer dam for flushing ...

Selkirk: Reminder: This is brainstorming; not judgmental.....

Pratt: Data gaps – water resources, water quality, water rights, point of diversion will be issue; duration needs to be explored; effects of sediment under this scenario on regulatory agencies; have to model in detail.

Hollebands: Temporary dam sounds like a great idea but for 6 wells below it. Affects water quality in those wells – data gap. Goes back to water rights involved.

Rick: What would trigger a need to do another biological opinion – this temporary dam would require an entirely new biological opinion.

Gruemann: This was proposed in the feasibility so would have to revisit why it was tossed.

Voice: Looked at it all the way up to the dam site so very similar.

Gruemann: Building the canal would have been too expensive; could be reviewed if it was documented.

Voice: Temp down downstream as well looked at.

Gruemann: supplemental system to offset water loss. Not 500 cfs. This scenario could include a range ... diversion around the construction site.

Cluer: Couch the language and goals and objectives.

Bennett: Could foster multiple more concrete ideas but unless it's concrete we can't identify data gaps.

Selkirk: Matt's idea of temp dam that provides alternative water supply; having a public water supply less susceptible to infiltration.

Jenkin: During feasibility and final design; value engineering studies....there are cost saving measures.

Voice: Modification that Paul alluded to .. wasn't intended to address fine sediment or water quality – also coarse sediment downstream and to ocean .. don't see that going away.

Selkirk: Want to hear suggestion for goal of Scenario To Russ's scenario.

Greimann: Slurry less material and leave some behind the dam. Less volume. Material left behind let it go as water carries it. Combination of USA and BRDA...leave some on terraces and behind the dam.

Jenkin: Also tossed out idea of using that material in upstream sediment piles. Also the potential for permanently putting some of it under the road; raising the road up. That's a data gap.

Bennett: to Matt: If coffer dams didn't check out, are you supportive of some kind of indepth study of full notching, natural transport option.

Matt: If cost savings went into Robles more effective and was long-term beneficial to other water districts, then it's worth considering it.

Voice: Anyone interested in full notching; initial notch to sediment level. Not interested in full natural transport; interested in data gap of knowing how much to remove to sediment level and get that data analyzed and then 2 or more small notches that don't cause undue nutrient, sediment, downstream and not allow natural transport to continue.

Hollebrands: The main question he had is when starting to look at modifications and different alternaives to what is in approved document; how far do we modify and where's the line that says we have to go back to re-do the whole thing?

Selkirk: Echoing sentiments of what creates something that needs to go back for reauthorization. Needs to be addressed.

Dellith: Agree with Jenkin on Scenario One optimization. Intrigued with coffer dam idea. Add ideas to schematic – treating fresh water bypass as more like a manifold and would have to increase quantity of canal capacity to inject water to any impact wells. They would have to reinitate on the project if it got to that. Divert to North Fork to address steelhead spawning?

Nye: Some of the options – notching and coffer dam – data gap would be how much fine sediment and nutrient moves during storm flows and normal flows.

Greimann: As soon as you notch, the dam you move the flow. Cutting the channel would only move during high flow events. If notched slowly you could manage it .. some threshold below where it wouldn't move. The coffer dam would have to divert all around the site. The issue would be cost. What capacity is needed for such a system? If that's too expensive, maybe a smaller system would still be useful. Can we mitigate part of the water supply issue with a reduced capacity?

Achieve slurring less material. Attain drinking water less susceptible to sediment levels. Full notching, phased natural transport (avoid slurring).

Jim: Observation ... at the last meeting t here were some data gaps identified for disposal sites....have not heard much conversation on that today. Locations, concerns about specifics at sites themselves.

Bennett: the land conservancy restricted us to 40% of land at the site and said they'd reconsider.

Baggerly: All included in 4b modification?

Selkirk: Yes.

Thiel: Is there anything missing? Have we thought about all the design components considered to treat within reasonable and not go back to feasibility study? Would like to hear from regulatory agencies.

Selkirk: 3 scenarios generated; will walk through each to see if anything is missing. Is any scenario not to even be considered?

Greimann: Still considering scenarios? (Yes.)

Nika: Heard brief mention of ... scenario 1 – opportunity to raise roadbed and improve road upstream of dam as well as fill in a notch in the cliff that has a sluffing problem. The data gap is identifying what volume of fines that could be sequestered upstream (not in the river channel).

Jenkin: Relating to that don't think there was specific mention of using existing upstream sediment storage areas. Couple of other ideas were trucking some fines away; somebody might want them in Cuyana Valley. Not sure the distinction between notching to sediment line and further notching was made. "Interim notching" and "incremental notching" ...

Jim: Interim notching to where first sediment level is

Jenkin: BRDA disposal area could also be phased (different from phased notching) more of a phased slurring. Can slurry once; wait for big storm, let it flush out; let it slurry again after it's flushed out.

Greimann: Another ... if looking at impact on water supply – look at "water bank" during project period so they don't impact safety of Casitas water supply. Could either deliver less water now and in 10 years have extra water. Worst case scenario lose 48000 acre feet of water so if more detailed analysis could reduce that (mitigates water loss).

Cluer: Potential to divert less water should be listed as scenario 4 option to make public water less susceptible to sediment problems.

Bennett: slurry less material, make public water less susceptible – good concepts to brainstorming but once brainstorm actual concepts – start to focus on those.

Selkirk: Next 20 minutes populate the goals with data gaps and then feedback from regulatory agencies and then narrow ...

Greimann: 4b original – variation – slow the slurry process down ... coordinate phased notching with phased slurring Also minimize the thickening required.

Baggerly: build on slurring, notching, slurring, notching. Drop dam down to existing silt line and slurry from behind, send it down, notch it again. Instead of having open area where fine sediment slurred, move sand and cobble over the top of the muck and make it under the river again .. avoid influx of latent nutrients; repeat.

Jenkin: What you are getting at is a controlled release scenario – either slurry or upstream management.

Greimann: Some consideration of those to minimize chronic fines downstream.

Nika: Downstream if you do slurry some of it but in a phased way in conjunction with controlled release the slurry piles .. don't have to use all 4 brda sites and more easily mobilized for the next event.

Jenkin: Low flow and high flow – clear water during low flow, etc.

Bennett: Data gap would be cost to leve pipelines in place or take them out, put them back in.

Greimann: Keep them in but for longer period of time. Not sure if significant cost savings.

Bennett: Full notching phased natural transport – data gap is what the impacts would be on Lake Casitas and other water districts and to fish.

Matt: Some data gaps for #3 are investigation operational and mechanical means to make Robes diversion more effective and minimize / enhancing desilting and managing nutrients in reservoir.

Cluer: Desilting ... still in original plan ... In feasibility Viable option... off the canal.

Cluer: fundamentally changing dam removal Adopted philosophy to do it as quickly as possible so the impacts can get over quickly, etc. Keep in mind if process is dragged out it's changing philosophy. This area different from many if not all other areas. Might not be able to do this in one El Nino process .. could be 2 .. could take 20 years.

Bennett: Changes cost benefit ratio ..

Cluer: Changes permits ...

Greimann: Big push was to get it done quickly And at that time good reasons ... so if longer approach is used then must clearly justify the change.

Rick: How BRDA sites would be managed --- if controlled released then is it possible to actively manage sediments sites downstream to have less active footprint?

Pratt: School of thought – get it over quickly. When 4b was undeveloped some thought of sequestering the fines permanently. Then when study was done, some thought to get them through the system during some period of time. Need to understand groups’ feeling. MDOA .. get the stuff flushed out. It was thought that was more permanent. Thought to be a good solution. That would be a data gap. “Should there be permanent sequestration of the fines? Upstream? Downstream?”

Nika: Add clarifier: Permanent to build up the road okay but not in the channel.

Selkirk: Assumption was that the fines disposal and storage was temporary

Greimann: Yes but if you put it way outside the channel ... it’s permanent.

Greimann: MODA is downstream of residential so you can’t mobilize that.

Thiel: Is there still consensus among regulatory agencies that getting stuff out of the system out quickly is the collective position? How long is acceptable for the river to get hammered ... big pulses or graduated pulses?

Jim: the reconnection of aquatic habitat; trying to do that as quickly as possible.

Cluer: Greatest benefit is just hydrologic connectivity then that benefit could come on line quicker than water quality benefits, depending upon what design is selected.

Rick: Sediment – way it’s analyzed...sediment not mobilized in anything less than a 10 year storm event. That’s the preference for sediment management in upstream or downstream.

Pratt: Yes nothing less than 10 year event, but Thiel is asking is permanent sequestration okay?

Bennett: Clarification – is any permanent downstream storage acceptable --- the true 4b site had a significant portion that would never be mobilized ... placed in the flood channel.

General acknowledgement from the group.

Baggerly: answer to Bob’s question rests in change in philosophy to dam removal and with permitting from the regulatory agencies and they’d be okay with this taking 20 years. Our Mediterranean climate - would it impact the permits issued by regulators?

OPTIMIZED COMBINATION / MODIFICATION OF BRDA THAT WOULD INCLUDE PARTIAL SLURRYING, NOTCHING, INITIALLY TO SEDIMENT LINE, SOME UPSTREAM STORAGE – is that doable?

Pratt: Everything is doable.

Shawn: There is a duration of time that a long term agreement would exist. You can amend to extend as well.

Nye: Waste discharge requirements ... last 5 years but don't go way ... could be revisited ... the requirements just continue. It could go on as long as they need to go on. Two different types of short duration – short storm and once every ten years.

Matt: Duration – 3 different scales: start of construction to end of construction. How long is that big flushing scenario going to last?

Cleur: shorter duration is better for fish. Don't know if that's possible if one El Nino cycle impacts...might take 2,3,4 cycles of El Nino impacts.

Rick: Events over 20 year timelines.

Buxton: 2 million cubic yards of fines ...

Cluer: Haven't analyzed the effects of the fines of the aquatic system that was not incorporated in 4b.

Nika: Thought what Jeff asked is NOAA OK with permanent sequestration of fines? Would like to add anywhere in the river.

Pratt: If you permanently sequester the fines if we go down that path

Bennett: is the current 4b site won't be mobilized for ten years?

Gruemann: upstream site would require revetment – the other sites would not.

Selkirk: any fatal flaw to Scenario 1

Dellith: It's not a DOA for Fish and Wildlife .. depends on how and where to store sediment. See where the species they are responsible for are set up now. Would still have to do an analysis.

Selkirk: There are bookends with respect to which BRDA can be modified. In looking at this universe of components and data gaps . what's y our

Buxton: Whole habitat benefits were based on getting dam down, getting fish passage .. as quickly as possible. Hit a lot of uncertainties.....unknown impacts when taking down a bit at a time. Their plan called out these benefits at these times – the closer we can stay to that the further away they are to triggering reauthorization. Stay close to the authorized project as possible.

Jim: Talking decades if talking about multi-notching and transport scenarios. Timing about aquatic reconnectivity. Steelhead can access their former spawning area above the dam.

Pratt: Clarifying : if you reestablish the connectivity quickly I think if it involves fine sediment transport past Robles it will kick off reauthorization. If you found a way to get it past Robles it would not kick off reauthorization.

Jennifer: Not the issue of natural transport keeps Casitas whole. Could be perceived as an engineering change that would not kick off reauthorization.

Mark: The notching scenarios don't think of it as a substitute for 4b but as a way to shrink the problems associated with 4b. If you think of the notching on its own would seem to call for longer timeline .. it could make the elements of 4b more management because there's less sediment and it keeps the problem from growing bigger every day ...

Jenkin: Baseline 2004 study is changing; if the Corps is not able to come up with funding or the public is not able to fund in the next 10 years the baseline will dramatically change. If locals were able to prevent the baseline from dramatically changing by notching down to sediment line, would it preclude the project from not changing and kick off reauthorization. (answer theoretically yes) If there's a way some how to notch and prevent from getting worse.

Pratt: One way to do it is to do it local and not involve CORPS.

Jenkin: Can a non-federal project that is somehow cheaper that has funding to get it start that could be dovetailed in with the federal project later.

Dellith: Question on Paul's scenario: would the Corps still retain federal authority (answer yes).

Buxton: To notch it would take an action on someone else's part and permitted.

Nika: I understand it's probably not feasible to refine a scenario, I would like to suggest that a framework ... (will write on board).

Baggerly: Having trouble with 3 scenarios – cherry pick from all three.

Nika: Staying enough with 4b – three basic sets of options working in conjunction with one another.

STRAW MAN

50% of BRDA (run slurry line to 1, 2 and maybe 3 or 4)
25% notching (2 or 3 flood events that mobilize)
25% stuff stored in upstream permanent sequestration or road bed usage

Incorporates over arching components that work could together Gives us a template.

Selkirk: Make a recommendation as to what is recommended in way of additional investigation – either work that’s been done or additional studies .. to craft a solution to the fine sediment issue that is so vexing.

Bennett: question for Nika – under notching scenario 25% - involve some kind of natural transport or fines moving as a result of the notching? (Yes but there’s a plus or minus so it’s up to the technical people to put it on paper ... the appropriate flow events ...) still study the impacts of natural transport on Casitas (yes).

Person: Impacts of natural transport were studied in the EIR to a certain extent. So whatever is decided on, look at the EIR for more specific detail.

Jenkin: Modify 3rd item to show it more generally upstream area (road bed+ permanent sequestration – upland)

Jenkin: Upstream could be terraced vegetation ... keeping with the feasibility plan

Nika: Where it says upstream .. put up land and terraces designed to become restoration areas ... designed to be part of the larger sediment storage ...

Matt: Under 50% BRDA 1,2 3 – downstream of Robles. Potential under the right situation or flows let a lot of the fines rip.

What do you think of this?

Jenkin: On notching, amend it to include interim notching scenario ... (prior to federal notching) ...

Pratt: Haven’t overlaid the constraints on the scenarios and they may drive the preferred scenario.

Thiel: Might be the homework.

Selkirk: Done some of that; had a fairly frank discussion ..

Pratt: what's healthy about having it in the room is that everyone hears everyone else.

Nika's is a framework of the scenarios.

Bennett: Agreement on scenarios that will trigger reauthorization is a fatal flaw. Group probably needs to agree on this.

Selkirk: next step: Steve has proposed good suggestion- **our commitment is to develop recommendations for fine sediment disposal that can be done within the scope of the initial document.** Interesting discussion on a "non-federal" project.

Thiel and I will transcribe all the flip chart information and out to you early next week.

Homework assignments:

1. Use the framework as a way to organize your thinking an optimized approach as a tool box .. suggested analyses, data gaps that have to be addressed. You can do it alone; in your collective group; convene phone conference; meet again on March 30.
2. Another constraint in building tool box what funding is available. Permit constraints, duration, all unknowns with respect to reauthorization.

Funding Briefing

Thiel: What exact information gap you believe exists. Whether any of this has been part of the analysis of this project. Are there answers in previous studies? But also think about what precisely you'd see done as there is a finite funding amount of dollars. Coastal Conservancy has a balance of \$1.2 million in a grant to the district .. to be used for modification of the two bridges. Some of those monies could be diverted to analyze certain aspects of what you see needs to be analyzed. Always hopes that the District could pay internal funds but given impacts on levy recertification, repairs, etc., increasingly problematic. Find other way to fund bridge designs. Can give a grant to the Corps to fund some identified component of the project for consulting services on a particular issue. Third alternative – the Conservancy can hire consultants on their own .. but raises concerns about control of scope of work and manage the project. In addition to the monies, several hundred thousand dollars that can be contributed over the next 18 months but there is not million(s) available. Also might think of creative ways to get expertise – scientific papers, convening a panel of experts without paying them, etc.

Camacho: Grant ... have \$750,000 And getting ready to let \$400,000 on bridge; another grant requires eradication that might cut into the remaining \$300,000 going to be tight on WPD Not much money available for technical studies on Matilija ...

Matilija Dam Ecosystem Project
Fine Sediment Study Group - Meeting 3
February 24, 2011

Pratt: Must find \$300,000 this year for the Arundo eradication. On the \$1.2 million, was there a deadline?

Thiel: Funds were reappropriated ... grant extended until 2014.

Bennett: Is there a legal or ethical ...

Camacho: It's legal ...

Thiel: There's a pot of money from the Conservancy partnership

Buxton: No money in president's budget for FY11 and have not received many dollars; working on carry-over funds from 09 to conserve it to address some of the efforts on the table. But safely could have \$100,000 without affecting what else is going on...FY12 doesn't look good. Internal work with Corps, with Bureau or with a contract that the Corps would contract.

Selkirk: Realistic ballpark is **\$200,000 - \$300,000.**

Thiel: Think about this in the next few weeks in terms of priorities and specificities; biggest issues you would like addressed so the discussion on March 30 can be focused. Identify additional expertise needed to bring to bear.

Selkirk: 3 Scenarios – most of your attention was on Scenario 1. Are you prepared before 3 p.m. how many would say this is the direction to go?

Greimann: If we show an impact to Casitas, we have to pursue water saving or water supply mitigation measures. We might want to see how this works..then look at others.

Pratt: what happened to running 4b to the ground.....is it still around?

Selkirk: Have a much more thorough cost review of 4b in today's dollars. You have all the data gaps identified .. and we'll get the rest to you.

Shawn: Road bed...when USA proposal came out there were changes and additional footprints we saw that needed to be addressed. Not clear on why it's a large constraint –

Jennifer: supplemental EA isn't that big of a deal.

Shawn: If we lie within the existing env. Doc. Streambed ... brings a risk ... might require an addendum to avoid that risk.

Matt: Done pretty well at writing down constraints and data gaps but the product that comes out of the next meeting is a scope of work so that Blair and other consultants can begin work.

Thiel: Yes that's what is planned.

Selkirk: that's the 1st assignment. The 2nd is to think about – imagine you writing a scope of work ... for this framework, what are the data gaps, what new information or review would be optimal and what kind of expertise is needed?

Outcomes:

ADOPTED CHARTER

DEvised SET OF SCENARIOS FOR BRDA

SCENARIO DETAIL ASSIGNMENT BY CLOSE OF BUSINESS ON March 18

Bennett: Reauthorization: make sure we don't walk away with lack of clarity .. the group as a whole has to say yes or no if they want to go that way. Have to make hard prioritization decisions.

WHAT WORKED:

- Great that we didn't spend a lot of time talking about decision rule
- Good spaghetti on wall
- People are asking lots of open and clarifying questions.
- Less formal
- You can facilitate 25 people

WHAT NEEDS TO BE CHANGED

- Big bag of money
- Lunch was bad

Draft