Selection Panel (Primary) Review

X Fund (a proposal recommended for funding at the amount sought or funding in part of selected project tasks or subtasks)

− ***Reconsider if Revised*** (a proposal that is a high priority but that requires some revision followed by additional review prior to being recommended for funding)

− ***Not Recommended***

Amount Sought: $2,430,400

Fund This Amount: $***2,430,000***

Conditions recommended (Conditions that applicants would need to meet to obtain funds may be recommended for proposals suggested for either full or partial funding. For proposals recommended for partial funding, conditions that identify the funded tasks or subtasks must be recommended.)

Several concerns were identified in the budget review that must be met prior to a final grant award. The proposed grantee shall provide a description of qualifications and a short justification for subcontracting services for pre−selected subcontractors. The proposed grantee shall also submit a detailed budget identifying the labor rates and indirect costs of the proposed subcontractors. A detailed explanation of the proposed Administrative Overhead/Indirect costs rates and an evaluation of the proposed additional administrative fees for the primary and subcontractor agreements shall also be provided. The Selectionn Panel recommends that the State reserve the right to negotiate a reasonable administrative overhead rate and additional administrative fee rates other than stated in the grant proposal. In addition, the digital terrain model created for the project area must be available to the public.

Please provide a brief explanation of your rating, including an explanation of the reasons for any conditions that the panel recommends. Revisions required of proposals recommended for reconsideration should be outlined, together with a justification for the suggested revisions:

The proposed project would continue and augment monitoring and evaluation of several large projects funded through the ERP and CVPIA in the Tuolumne River watershed, an area of focused investment for both programs. The monitoring would gather data at multiple scales on processes, habitats and stressors important to recovery of Chinook salmon and steelhead, priority species for the ERP. The proposal was assigned a superior rating by the Technical Panel, but the budget review identified several issues related to budget justification and detail that would need to be addressed prior to final grant agreement. The Selection Panel

recommends that the proposal be funded with the condition that the applicants provide additional detail and justification for the budget. This proposal focuses on four projects. The Selection Panel encourages the applicants to emphasize coordination with other monitoring studies of other Tuolumne River projects, as well as effects of these projects on the Tuolumne River, including restoration at Bobcat Flat and Grayson River Ranch areas. As this is a cumulative effects study of restoration activities on salmonids, the Selection Panel encourages the applicants to consider a more comprehensive development of cumulative effects. This may be partially covered in the river longitudinal study.

Technical Panel (Primary) Review

superior

Explanation Of Summary Rating

All reviewers from the technical panel supported this project. The monitoring tasks clearly address the fundamental goals of the restoration efforts. The PI’s have the right mix of experience and expertise for their project. The project is ambitious and has many different objectives but, in this case, the whole should be worth much more than the sum of its parts. The main reason why this project was rated as 'superior' is that it will monitor the cumulative effects of several different restoration projects on the large−scale recovery of the river's geomorphological and biological processes. A typical limitation of other proposed monitoring projects is that any effects from localized restoration efforts may be overwhelmed by other events occurring in the watershed. The spatial scope of this project will circumvent this problem.

Review Form

Goals And Justification

The proposal gives sufficient background on each of the 4 restoration projects (3 gravel augmentation projects and 1 fine sediment control project) that will be monitored. The goals and objectives (eg, restore floodway width, reduce salmon mortality, reduce fine sediment yields, restore coarse sediment routing) are clearly established and documented. The conceptual models underlying the restoration actions are straightforward and fundamentally sound. No scientific hypotheses are offered, however, this was not seen as a significant flaw. Much of the work is devoted to characterizing watershed processes rather than testing the efficacy of specific restoration actions; nevertheless, the approach is relevant and appropriate to the large−scale issues in the Tuolumne River System. One concern is that a large fraction of the restoration projects to be monitored will have been completed only recently. Will this project then just be documenting transient effects as the system moves from one state to the next?

Approach

The approach uses standard techniques with some novel techniques (eg, mapping bathymetry with Lidar). The project proposes to evaluate the restoration efforts from a number of different and relevant angles, including investigating sediment transport processes,

monitoring channel stability, and fish habitat surveys. The strength of this project is that it is building upon previous monitoring and the PIs propose to extend monitoring efforts that are scheduled to end shortly. Not only will this project add to our knowledge−base by providing new and relevant data but, just as important, it will increase the value of the data that has already been collected. Presented correctly (not always a trivial enterprise) these contributions should be useful to decision−makers.

There was concern about hook−and−line fishing as a surveying technique. This methodology will need to be justified and the anticipated data clearly specified.

Feasibility And Likelihood Of Success

The PIs have a good record of delivering results and this bodes well for the probability of success. Having said that, some details are lacking in the proposal, especially in terms of the geomorphological monitoring. For example, the PIs propose to deploy tracer rocks. How? How many? What kind (painted, magnet, etc)? The panel assumes that these details were left out due to space considerations and the experience of the team provides confidence that they will be able to carry out the tasks. The regional panel raised an important question regarding high flows. Several tasks are slated to be carried out during specific high flows. What if they don’t happen? The environmental compliance review was concerned about permits for adding the tracer gravels.

Performance Measures

The PIs list a number of variables that will be measured and quantified such as fish populations, % cover of vegetation, measurement of suspended sediment, etc. Although no specific thresholds are offered to distinguish between the failure and success of a restoration project, the performance metrics address the fundamental goals of the restoration projects. Space may have been an issue given the scope of the proposal.

Products

The information produced by this project will be very useful to others, particularly if interactions between the different restoration efforts can be documented. The project appears to be solely focussed on the Tuolumne. There do not appear to be any links to universities, other research institutions, or stakeholders. According to the proposal, data will be made available in Word or Excel format to the CBDA. As a requisite for funding, the PIs will need to make the digital terrain model created for the area publicly available. The multi−faceted approach of the project will provide high−quality, integrative results that will likely stand up to peer review. The PIs expect that this project will yield a good number of publications and this seems to be likely.

Capabilities

The interdisciplinary team is well−qualified for this project. They have considerable experience working on these types of projects and their results are generally considered top−rate.

Budget

The budget is big but appears reasonable. More details would have been helpful. They request $47k for travel and $14k for equipment but no explanations are provided. These expenses need to be clarified. One technical reviewer was concerned that there were inadequate project management funds (only 2%).

Regional Review

The regional panel rated this proposal as “very high.” The review was wholly supportive of this project and was particularly appreciative of the project’s intent to extend existing monitoring efforts. Also noted by the review was the scope of the project that will allow assessment of the restoration efforts at a number of different scales.

Administrative Review

The administrative reviewers did not raise any red flags. The environmental compliance review was concerned about permits for the tracer gravel study. The budget review was concerned about the lack of detail in the budget.

Additional Comments

Technical Review Panel's Overall Evaluation Rating:
superior

San Joaquin Regional Review

Very High

Review:

1. ***Applicability to ERP goals and regional priorities.***

The proposal conforms to four ERP priorities on the Tuolumne River− 1 (channel floodplain restoration in coop with local groups),2(restore geomorphic processes),3 Improve rearing and spawning habtiat), and 6) Adaptive management for flow regimes to promote functions− including use of mechanistic models as tools).

The project may affect steelhead, fall−run chinook and the valley elderberry longhorn beetle, noted in the report and these are all 'R' species.

It also conforms to two long−term AFRP goals to restore and protect instream and riparian habtiat, including spawning gravel restoration combined with evaluation of both biological and geomorphic processes, and secondly, to implement and evaluate actions to reudce predation on salmon by isolating gravel ponds.

2. ***Links with other restoration actions.***

The River−wide assessment may assist with the potential to identify cumulative responses. However, this monitoring needs to also be correlated with regional climate, flows and truly needs to be long term. Its true that monitoring needs to be at different scales to determine the effectiveness of the restoration actions− and those scales are different for the longhorn beetle, trees and salmon (mts to ocean and various birds that may invade and inhabit the restored areas.

The project pursues AFRP goals, but no other CALFED programs per se are incorporated, other than integrating with another Tuolumne River proposal by the Friends of the Tuolumne.

The proposal includes a specific data storage and report production plan to help ensure applicability of the information. The distribution afforded by such publications would help provide a national and international network and feedback essential to the growth and evolution of a strong CALFED program and its component restoration actions.

The proposal does continue previously funded monitoring, most of which is not scheduled to continue beyond 2005. That makes funding of this project even more important.

The long−term monitoring would help fill numerous data gaps in the evaluation of various complex separate but interrelated projects. It will also produce data to assist with the evaluation of other River restoration projects (Bobcat Flat and Grayson).

The eventual results of this monitoring will help the planning of future projects. It may also point to the direction of more in−depth monitoring.

This monitoring− and even more specifically the failures of monitoring that become apparent in the reports, are helpful for planning and assessing other restoration actions.

3. ***Local Circumstances.***

The projet proponents need to obtaining some additional local private access in time to meet the monitoring schedule.It appears this could be an uncertainty, although no stakeholder issues are documented.

Flows are also mentioned as a feasibility issue, as they have to be large enough to evaluate the geomorphic processes and this will not occur in a dry year. The same is true for the ability to evaluate issues related to the Grayson project backwater channel.

Although funds are noted in the budget for statistical analyses, no discussion on the assurance of statistically adequate sampling where appropriate was noted in the test of the proposal.

Such a "nested" River−wide/site specific monitoring plan is exactly the type of thing that is needed to help ascertain project success. However, three years is not long−term. The applicant may want to consider doing the work every other year− over a six year period (although with salmon, that could create cyclical results that may obscure interpreation because of their anadromous life history.

The project assumes data sharing with Friends of the Tuolumne. This means that these projects will need to be coordinated and supply each other wtih data as needed. This is also a very complex project. It includes not only River−wide sampling, but site specific sampling at four project sites. It also includes the use of CDFG staff. Not meaning to be derogatory, but CDFG often has difficulty obtaining adequate staff and maintaining project schedules, although they try very hard. One simply needs to be aware of this issue to plan and coordinate adequately.

No local legal, political, cultural impediments could be ascertained from the project proposal

Some private access will be needed. Access has been obtained already for Bobcat Flats and Grayson. Necessary access will be secured prior to going on private property− but has not

been done yet. Most access can be from public lands.

4. ***Local involvement.***

The proposal outlines a plan for public outreach and dissemintation of information including use of existing forums and the TRTAC, distribution of brochures and participation in CDBA Science Conference.

The project proponents will continue to coordinate with non−profits and agencies doing work on the River.

The project is part of existing long−term work; the work is anticipated to continue to be pursued beyond the scope of this funding cycle.

5. ***Local Value.***

The monitoring of the project is designed to help determine in fact if a smaller scale River and its functions and processes can be restored. This should be reflected by the River−wide sampling based on site specific analysis of functions. But it needs to be correlated to flows and climate, as salmon cycles may more strongly reflect climate than the small scale restoration actions at this point.

The ability of the project to synthesize data that will increase understanding of actions by managers etc. will depend upon the results of the monitoring. Often short term monitoring results can be misleading, or confounding with the inability to draw conclusions. Certainly the proposal's approach is designed to help to be able to provide useful planning and management information and should be able to inform relative to restoration success at the least.

The projet should be able to help to determine if adjustment are need to achieve objectives. This may be true more so on some things, than with others. It may be identified that some things didn't work. The monitoring may not be able to determine why, necessarily. But at the least should be able to ascertain the direction of additional future work.

The monitoring is being conducted at different scales− both site specific and River wide. It is also being coordinated with two additional River projects. Certainly some of the findings could be applicable to future River specific restoration actions, and possibly other watershed actions that would be under the same circumstances.

6. ***Other comments:***

Peer reviewed journal articles are needed (an overall CALFED issue). We were glad to see some of that incorporated into this project. We would like to see more future coordination with academic institutions when possible.

As in the highly variable climatic regime of the San Joaquin Valley the "within treatment" variability is often higher than "between treatment" variabilities of field experiments, long term monitoring is necessary to determine the success of restoration actions, or results of other types of field experiments. Three years is not long−term. Suggest doing the monitoring every−other year for six years be considered in the future unless that would adversely affect the ability to evaluate results of salmon data because of their cyclical life history. At some point the intensity of monitoring should be able to be reduced or focused.

We noted funding in the budget for statistics, but also did not see a reference to meeting statistically adeqaute sampling size for the monitoring samples.

I couldn't find the reference for the asterisks on various of the subtasks in Task 3 and 4.

Overall Ranking:
Very High

Provide a brief summary explanation of the committee's ranking:

This is an extremely important project. This is exactly the kind of project the PSP is looking for. It pertains to several big Rs, it pertains to four ERP goals, AFRP goals and other regional goals.

This project is designed to help determine if the conceptual model of the River is correct and if the actions implemented are showing progress toward it. Or− if the conceptual model is not validated, the results of this monitoring should help guide and inform future CALFED direction, research and funding goals.

The Technical Review should ensure that the monitoring will be able to produce answers relevant to the questions. Concern exists that standard agency monitoring responsibilities may be being pushed to CALFED. This is a policy issue. Regardless, it is extremely important to fund this project.

External Technical Review

Goals And Justification

This proposal describes monitoring that will focus both on specific projects as well as river−wide integrated monitoring. The proposal effectively describes the need for this integrated and multi−scale monitoring: Extensive previous research on salmonids and geomorphic processes has occurred on this river, followed by numerous past, ongoing and future restoration projects. An Adaptive Management Forum (AMF) is in place for the Tuolumne which has recommended long−term and multi−scale monitoring. Due to short funding cycles, project−specific monitoring for several projects has been brief and funding is exhausted and support for river−wide monitoring is also diminishing. Thus this project proposes to continue site−specific monitoring and conduct river−wide monitoring to ensure continuity of data collection.

The proposal identifies the restoration actions whose outcomes will be monitored and clearly describes the projects' goals and objectives. The 'attributes of alluvial river integrity' serves as an overarching conceptual model that provides a basis for both the restoration projects and the monitoring program. In addition to the 'attributes,' the proposal includes several more specific conceptual models relevant to specific restoration projects. These conceptual models are clear and detailed and were developed with external input. The multi−scale monitoring described here attempts to address a broad hypothesis – that restoration actions can 'scale down' a regulated alluvial river and re−establish geomorphic processes to sustainably create and maintain habitat (e.g. for salmonids). Attached tables include numerous specific hypotheses to be tested through monitoring. These specific hypotheses are clearly linked to the broad question of how to restore an alluvial river through scaling down of processes, which is an important knowledge gap for CBDA to address.

Approach

The approach is well−designed and appropriate to meet the project's objectives. The proposed monitoring builds on previous monitoring programs, both site−specific and river−wide (the proposed monitoring is essentially a continuation of existing monitoring efforts). The monitoring and evaluation activities are likely to provide significant information regarding the efficacy of specific restoration actions as well as the overall feasibility of restoring a large, regulated river system. Because alluvial rivers are critical for many of the species and ecosystems that CBDA seeks to restore and because most Central Valley alluvial rivers are degraded, both the specific insights about project efficacy and the broader knowledge of river restoration will be very useful for CBDA and other decision makers. Coarse sediment augmentation provides an example of both project−specific and

system−scale information that will be generated. Monitoring the stability of created spawning riffles will provide important information about gravel augmentation techniques, including whether recent techniques have improved over previous approaches which often weren't stable. The development and calibration of sediment transport models to predict the volume of sediment required for long−term channel maintenance will provide useful information regarding the feasibility of gravel augmentation strategies at the system−scale.

Technical Feasibility

Monitoring methods are clearly documented and, because they are primarily extensions of previous and ongoing monitoring programs, technically feasible. They acknowledge that several of the tasks depend upon sufficiently high flows that can perform geomorphic work. The scale of the project is consistent with the objectives. The multi−scale approach will evaluate specific project performance while simultaneously answering questions about the feasibility of large−scale river restoration (e.g. salmonid population dynamics, sediment transport models).

Performance Measures

The collected data will allow evaluation of the restoration actions. The proposal does not include specific performance measures per se, but the approach and monitoring methods are well designed to evaluate the underlying conceptual models. The specific hypotheses contain a great deal of quantitative information that can serve as performance measures (e.g. Hypothesis: the constructed channel conveys flows of 5,000 cfs; flows exceeding 5,000 cfs spill onto the floodplain). The methods are described in adequate detail, given the length limitation of the proposal and the number of different monitoring methods proposed. The methods described appear likely to both assess the performance of specific restoration actions as well as test hypotheses generated by the conceptual models.

Products

The information generated by this proposal will provide important and useful information for those managing and attempting to restore the Tuolumne, including the CBDA. Significant restoration funds have been invested in this system and this proposal describes a thorough program to continue evaluating and learning from these investments. Due to the system−wide nature of restoration actions in the Tuolumne and the multi−scale nature of this proposal, this project can also provide important information about large−scale river restoration and the basic question of whether regulated alluvial rivers can be 'scaled−down' and, through management and restoration actions, retain natural or semi−natural geomorphic and ecological processes. The data handling and dissemination measures will allow decision makers, managers and scientists to access and use the information generated. The project also

includes measures for sharing information about restoration of the Tuolumne to the broader public. The monitoring described in this proposal appears to have been informed by rigorous scientific evaluation and external review and the development of clear conceptual models and, thus, will likely produce high−quality results that will stand up to peer review.

Capabilities

The project team’s qualifications are commensurate with the project with the appropriate mix of disciplines. The sub−contractors on this project team have extensive experience working on Central Valley rivers and the Tuolumne in particular; their performance record and experience indicates that they will be able to complete the project.

Budget

The budget is reasonable and adequate for the work proposed.

Additional Comments

External Technical Review

Goals And Justification

DOES THE PROPOSAL IDENTIFY THE RESTORATION ACTIONS WHOSE OUTCOMES WILL BE MONITORED? Yes. The restoration actions themselves are quite multi−faceted, complex and have a long track history. The applicants effectively summarized these activities within sections A1.1a and 1b, a series of figures, tables and citations. This proposal could have been much more difficult to review, but the applicant's clever organization helped simplify this complex history.

DOES THE PROPOSAL PRESENT A CLEAR AND INTERNALLY CONSISTENT STATEMENT OF THE GOALS AND OBJECTIVES OF THESE RESTORATION ACTIONS? Yes. Section 1C spells it out very transparently and the applicants effectively and consistently refer back to these goals and objectives.

DOES THE PROPOSAL PRESENT A CLEAR CONCEPTUAL MODEL THAT ADEQUATELY EXPLAINS THE UNDERLYING BASIS FOR THE RESTORATION ACTIONS? The proposal presents one over arching conceptual model (alluvial attributes and Figure 8) and seven detailed conceptual models (figures 9− 15) to support and elaborate on sub components of this model. The over arching model clearly guided the basic restoration actions; whereas the later conceptual models more specifically address the adaptive management and monitoring goals highlighted in this proposal. This is an impressive and logical summary of previous work by the project team applicants. I would like to see some rationale for choosing their own conceptual models over the wealth of other conceptual models in the peer−reviewed literature. Without focusing on the details of any one of these models, it should be said that all their conceptual models are reasonable hypotheses about how the Tuolumne system (and others) might have reached its current state and/or might respond to restoration actions. However, I would challenge the applicants to consider alternative conceptual models too! There is no a priori reason to assume that their conceptual models, however reasonable, are correct. I would encourage the applicants to think quite adaptively about their conceptual models and not become too attached to a single−correct answer or model (e.g. the scaled−down river with all ten functional alluvial attributes). There are probably multiple acceptable conceptual models and a certain degree of equifinality and divergence to confuse matters. Work by Phillips (2001) explaining systems in terms of their spatial and historical contingencies might be helpful to the applicant's when trying to explain why their conceptual model(s) might not explain every observation.

DOES THE PROPOSAL CLEARLY STATE THE HYPOTHESIS(ES) THAT THE PROPOSED MONITORING WILL TEST? Yes. In my opinion, CALFED has overemphasized the role of hypotheses (particularly statistical inference) in this RFP. In

reality, the suite of conceptual models these applicants have proposed represents a complexly intertwined series of working hypotheses and assumptions. Their monitoring program is clearly structured to test these conceptual models. The applicants have hardly mentioned these hypotheses in the text of the application, but transparently highlight each of their 26 hypotheses in Table 5. Traditional scientific hypothesis testing can include falsification (Popper, 1968), statistical inference (seems to be what CALFED is encouraging), ruling hypothesis (Beveridge, 1980), and multiple working hypothesis (Chamberlin, 1890). For monitoring of complex natural systems and restoration projects, this reviewer is extremely sceptical of the value in simple hypothesis testing (such as statistical inference). For example, their hypothesis H2 (the channel bed is mobilized at flows of 5000 cfs) is sufficiently simple to insure that it is testable; but what does this mean? If this is true does it somehow validate or support some sub−component of one of their conceptual models? If it is false is their conceptual model wrong. I suspect not. If you link this simple example to the conceptual model in Figure 4, this is just one tiny component in a chain of processes posed to be necessary (by this conceptual model) for increased egg−survival to emergence for salmonids. The linkages in the conceptual model adequately convey the true complexity of the problems, but also their propensity to be incorrect. Hypothesis testing, if used or required carelessly, can mask this complexity. However, I am confident the applicants would be able to make some reasonable and valuable interpretations without being to rigorously confined to these required hypotheses.

ARE THESE HYPOTHESES JUSTIFIED RELATIVE TO EXISTING KNOWLEDGE AND KNOWLEDGE GAPS? Yes. The hypotheses and conceptual models proposed are both supported by contemporary literature in geomorphology, eco−hydraulics, fisheries and hydrology as well as topical additions, which address existing knowledge gaps.

Approach

IS THE APPROACH WELL−DESIGNED AND APPROPRIATE TO MEET THE PROJECT'S OBJECTIVES? Yes. It is clear that much thought has gone into integrating this monitoring program with the projects objectives. I have no concerns with the approach.

DOES THE PROJECT ADEQUATELY BUILD UPON PREVIOUS MONITORING, INCLUDING APPROPRIATE MODIFICATIONS TO RESPOND TO LESSONS−LEARNED DURING THE PRIOR MONITORING? This proposal is a fantastic example of how to effectively build off of previous monitoring work. The only thing possibly lacking is how the adaptive management has worked so far to respond to previous monitoring attempts.

ARE THE MONITORING AND EVALUATION ACTIVITIES DESCRIBED IN THE PROPOSAL LIKELY TO MAKE SIGNIFICANT CONTRIBUTIONS TO OUR

KNOWLEDGE−BASE? Given the magnitude of the ongoing work on the Tuolumne and the applicant's track record of disseminating that knowledge and applying it to other systems, it is highly probably that this would be a significant contribution to the knowledge base.

IF SO, PLEASE DESCRIBE THE CONTRIBUTIONS AND THEIR SIGNIFICANCE. WILL THESE CONTRIBUTIONS BE USEFUL TO DECISION−MAKERS? Perhaps the single biggest contribution transferable to other systems and decision makers will be the testing of the numerous conceptual models the applicants have proposed. I would hope that the applicants produce a suite of conceptual models with interchangeable parts that would be helpful to practitioners doing similar gravel augmentation and restoration work on at least 17 other rivers in California (Wheaton et al., 2004). There has been heated debate about whether the Trush et al. (2000) 'alluvial attribute conceptual model' in a scaled−down river can really work. It is being attempted on the Tuolumne and Trinity Rivers and this is a perfect opportunity to test these ideas adaptively. Regardless of whether their conceptual models prove to be an entire success, partial success or complete failure, this project will be of interest to many.

Given that the majority of the project team is comprised of consultants, I do have some concerns that the outputs of this project may be limited to primarily gray−literature reports or peer−reviewed reports within the confines of only the CALFED community. Task 2C seems an attempt to alleviate such a concern. I think it is important for their ideas to be put−forth and critiqued by the wider international scientific community (beyond CALFED), thus increasing its potential significance. I would advocate a requirement that dissemination takes place in widely read peer−reviewed scientific journals, and would think an additional budget item to insure this process would be well worth the investment.

Technical Feasibility

IS THE PROJECT FULLY DOCUMENTED AND TECHNICALLY FEASIBLE? Yes. The project is well documented and all of the tasks are technically feasible in some way. If anything, I am worried that some of the subtasks are a bit ambitious. However, the applicants seem confident these can be accomplished. Perhaps this is because some of the proposed subtasks are either already near completion or being pursued concurrently on different projects? I do have some specific concerns about some of the specific proposed subtasks that the applicants might already have considered outside this proposal. They are listed below.

(Subtask 3b) How many tracer rocks are to be deployed and what techniques will be employed? Tracer studies can be very time consuming, with low recovery rates. If the applicants intend to use the Spatial−Integration−Method, they will need to be able to recover buried gravels (e.g. through use of magnetic inserts and metal detector). A few painted rocks thrown in a cross section won't tell you much.

(Subtask 4a) How does one quantify fine sedimentation rates with repeat total station surveys? Unless your fill depths are quite high, fine sediment accumulation is very difficult to estimate volumetrically from repeat topographic surveys. Using a rounded disc instead of a conical pointed tip on the survey rod can help, but even so the uncertainty in your corresponding digital elevation models is typically on the order of the magnitude of elevation change. Some techniques are emerging to quantify the significance of this (recent AGU meeting), but are still in the preliminary stages. Am I misinterpreting something here?

(Subtask 5a) Same concerns as above on tracers. For scour cores, if you're not already, consider using DeVries et al. (2001) data−logging scour chains.

(Subtask 5b) If all you have for baseline data is some cross sections, you are stuck with this technique. However, if you're collecting topographic data a far superior estimate of volumetric change can be acquired from DEM differencing (e.g. Brasington et al., 2003; Brasington et al., 2000). Again, consider how you will account for the uncertainty in either cross−section differencing or DEM differencing.

(Subtask 5c) Really!? This seems a little ambitious. I'm not familiar with the cited studies and hope you are referring to an off−the−shelf sediment transport model that relies on the output of a 1D hydrodynamic model. By develop and test a predictive sediment transport model, you surely don't mean from scratch? As you all know, people spend their whole careers on this and still only get within a few orders of magnitude. Good luck to the naive field slaves in the cataraft at high flows.

(Subtask 7e) Water penetrating LiDAR is an enticing thought but there are as−of−yet unresolved technical problems and risks of damage to aquatic organisms from this emerging technology. I am not an expert on these issues, but would caution the applicants to investigate these before pursuing or relying on this technique to heavily.

IS THE SCALE OF THE PROJECT CONSISTENT WITH THE OBJECTIVES? Yes. $2.4 million for 3 years of monitoring on a project that has cost over $30 million seems quite appropriate. The scope of the project objective is quite comprehensive and ambitious, and warrants the scale of proposed monitoring.

Performance Measures

WILL THE DATA COLLECTED BY THE PROPOSED MONITORING ALLOW EVALUATION OF THE RESTORATION ACTIONS THAT ARE BEING MONITORED? Yes. This is clearly mapped out in the proposal and not worth elaborating on here.

ARE SPECIFIC PERFORMANCE MEASURES PROPOSED FOR EVALUATING THESE

RESTORATION ACTIONS? The conceptual models, which drove the restoration actions in the first place, seem to be the primary performance measures. This seems appropriate given the project objectives.

IS THE RATIONALE FOR THE PERFORMANCE MEASURES CLEARLY DEMONSTRATED? Yes.

WILL THESE DATA AND PERFORMANCE MEASURES ALLOW EVALUATION OF THE CONCEPTUAL MODELS UNDERLYING THE PREVIOUS RESTORATION ACTIONS? Yes. There are specific provisions within the proposal for both evaluation and modification of the conceptual models within an already established adaptive management framework.

IS THE MONITORING AND EVALUATION PLAN EXPLICIT AND DETAILED ENOUGH TO ASSESS THE PERFORMANCE OF THE RESTORATION ACTIONS? Yes.

Products

WILL THE PROJECT LEAD TO INFORMATION THAT IS USEFUL TO RESOURCE MANAGERS, OTHER DECISION MAKERS, AND/OR SCIENTISTS? Yes. Primarily through the testing and dissemination of their suite of conceptual models, this project will prove helpful and interesting to decision makers, scientists and resource managers alike. See also, comments above in APPROACH.

DOES THE PROJECT EXPLICITLY DESCRIBE HOW OTHERS WILL BE ABLE TO ACCESS THE DATA PRODUCED BY THIS MONITORING EFFORT? Provisions for data access and dissemination are clearly outlined in section 7.

ARE DATA HANDLING, STORAGE, AND DISSEMINATION MEASURES ADEQUATE TO ALLOW RESOURCE MANAGERS, OTHER DECISION MAKERS, AND SCIENTISTS TO ACCESS AND USE THE PROJECT?S RESULTS? Given the applicants track record of data handling, storage and dissemination on previous Tuolumne projects and the provisions outlined in section 7, there is little doubt that these measures will be adequate for others to use the project results. Again, I would emphasize the importance of dissemination of results in major peer−reviewed journals.

IS THE PROJECT DESIGNED TO PRODUCE HIGH−QUALITY RESULTS THAT ARE LIKELY TO STAND UP UNDER PEER−REVIEW? Yes. As designed, the project is likely to produce high quality results and this is further supported by the capabilities and track−history of the applicants.

Capabilities

ARE THE PROJECT TEAM'S QUALIFICATIONS COMMENSURATE WITH THE PROJECT? Yes. The project team has a long track−record that demonstrates their ability to carry out such a project. Plus, the entire project team has previous experience on the Tuolumne River.

IS THE MIX OF DISCIPLINES APPROPRIATE TO THE PROJECT AS DESCRIBED? Yes. This is a pretty standard multi−disciplinary mix of experts, which seems appropriate for such a project.

DOES THE PROJECT TEAM'S PERFORMANCE RECORD INDICATE THAT THEY HAVE THE ABILITY TO COMPLETE THE PROJECT? Yes.

Budget

IS THE BUDGET REASONABLE AND ADEQUATE FOR THE WORK PROPOSED? The budget asks for a large sum of cash but also proposes to deliver a fairly comprehensive monitoring study with applicability well beyond the Tuolumne. The budget seems reasonable given what is proposed to be delivered. See also, comments above.

Additional Comments

This is a well prepared and impressive proposal. I am confident that the results of this monitoring project would be of interest and applicability to an audience much wider than the Tuolumne River. Similar types of projects have been undertaken on roughly 17 different rivers in California. However, similar monitoring efforts are probably only being pursued on 2 other rivers (Merced and Mokelumne). The applicants mentioned that the data will be comparable to data being collected on other rivers (e.g. Merced and Clear Creek) This is not surprising considering the applicants also do work in those systems. I would like to see the applicants make some efforts to consider how their work might be applicable to practitioners and scientists in the other 14 rivers they are not currently working in. Furthermore, I would like to see more of an effort to use the lessons learnt from other systems and/or test or refute concepts being developed on other rivers. CALFED will benefit from a plurality of approaches to address similar issues. No single approach is necessarily superior. However, if everyone continues to work in isolation on their own pet projects, system wide progress will be difficult to achieve. Although this proposal commands authority, my biggest criticism is that the applicant’s review of relevant literature and other CALFED funded projects of a similar nature is rather limited. In fact, almost every document in the cited literature section was prepared by the project applicants. You are experts, but there are others too. You might learn from each other.

Although the proposal and attachments are of generally high quality, there is a problem with the readability of many figure captions. I suspect this is a font substitution problem or a font that was not embedded in the PDF when saved by the authors. The substituted italicized font is borderline illegible. This minor glitch detracts from the overall outstanding quality of the application. I would encourage the applicants to check for this problem in the future.

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External Technical Review

Goals And Justification

Yes to all questions. Long−term monitoring is crucial for project effectiveness evaluation and adaptive management. The restoration projects are very large scale and affect entire populations of salmonid fish and other species. Large−scale baseline and post−project studies involve extensive and intensive data collection. The proposal sits on a firm base of planning, modeling, prior study and broad consensus. The proposal also continues commitments made by stakeholders and agencies. Models as described are reasonable and based on sound science. Monitoring must be comprehensive and requires a broad range of scientific and technical disciplines for investigation and interpretaion.

Approach

The project appears well−designed and appropriate. Monitoring must be comprehensive and requires a broad range of scientific and technical disciplines for investigation and interpretaion. This proposal has that broad base. The scale and nature of the restoration work makes comprehensive and detailed monitoring very important. Successes and failures must be clearly documented. Understanding changes in channel morphology, stream hydraulics, habitat capability and integrity and habitat use, as this project proposes, will lead managers in planning and specifying effective work in the future. The project will assess restoration effectiveness, evaluate cumulative response and adaptive management experiments, provide comparable data, and extend long−term monitoring. These are useful and necessary components of actions at basinwide scales addressing needs of multiple aquatic species and populations.

Public participation and coordination is often a weak link in coalition−based programs. Project managers must place emphasis on facilitating completion of Task 2.

3E. Will discharge be estimated from continuous stage records?

3F. Post−project vegetation monitoring can be pulsed − intermittent re−surveys.

3G. Three year monitoring of reconstructed floodplains is not long enough to evaluate long term success and effects of flooding extent, periodicity and dynamics on colonization and plant growth.

3H. Substrate and cover should be added to redd site measures in order to expand data set of suitability criteria.

3I. Abundance should be quantified with statistical measures of dispersion.

3J. Groundwater monitoring should coorespond to continuous stage recording timing and interval.

4E. Factors to be controlled to provide statisitically sound approcah may need to include substrate, water quality parameters (turbidity, temperature, dissolved oxygen), presence/absence of hyporheic infiltration/upwelling.

Technical Feasibility

Yes to both questions. Much of the work follows many years of study and extends duration of ongoing monitoring. Contractors have collaborated in the past. Most protocols are well−established. Models are sound and clearly defined.

Performance Measures

Yes to all questions. Proposal includes high resolution mapping and fine scale measurement of parameters. Hypotheses are stated but statistical analyses are not defined. Plans are detailed enough to assess performance but only over the short term and as part of an on−going long term effort. Monitoring must be carried into the future in order to account for vegetative changes, flood cycles, and use and response by target fish species over several life cycles. Short−term monitoring is not sufficient to draw final conclusions of restoration effectiveness. Monitoring should be pulsed in order to conserve funding resources, with intensive monitoring interspersed over several years with less−intensive efforts.

Products

Yes to all questions. Directing interpretation of results leading to "implementation of ecosystem−based management" will be a challenge. Spatially/temporally linked biological and physical elements require long time series records across complex and large geographic landscapes. The current proposal must couple with past work but also depends on continuation. Effective presentation, interpretation, and use of results depends on evaluation in the context of these elements. All tasks include draft and/or final reports as deliverables. Deliverables such as aerial photography and digital mapping will be useful for both present evaluation and future comparisons using well−established techniques.

Capabilities

Yes to all questions. Consultant services specifically listed are appropriate to the project tasks. Respective disciplines will be enhanced given collaboration and coordination among

contractors and subcontractors.

Budget

Yes. Projected hours for services fit scope, extent and duration of work. All technical and administrative components are accounted for.

Additional Comments

Budget Review

1. Does the proposal include a detailed budget for each year of the requested support?
Yes.

If no, please explain:

Comments: 1. Check duplication of funding request for Task 5 w/ ERP−02−P29 −amendment request approved Level 3 on 11/8/04 2. See proposers comments on page 17

Budgeted amt for project mgmt seems like a token amt compared to the yearly budget of 97% work to be performed by subs

Budget Detail detail needs to be itemized in the format provided by the PSP to enable reviewers to better evaluate and ensure that proposed labor rates are comparable to state rates.

If proposal is funded, a detailed list of items included in the indirect cost rate should provided by the grantee. Grantee must provide itemized and detailed information included and charged as part of Indirect Rates (IDC) charges.

Note: No overhead or indirect rate charges on the equipment purchases should be allowed as part of the budget that shall be funded as a result of this PSP.

Major Expenses – If the grant is awarded a detailed list of equipment purchases should be provided by the grantee so reviewers can better evaluate whether it is more cost effective for the state to purchase large dollar equipment items through the state procurement process. If the equipment list is available within the State inventory or stock, then purchase of some or all of the listed items may be provided, loaned, or leased by the state to the grantee. In the event, that the equipment is purchased by the grantee, the grantee shall maintain an inventory of major equipment for auditing purposes and potential use for future projects. Grantee shall follow State Contracting Manual [SCM] Section 7.61 thru 7.62 rules pertinent to equipment purchase, lease, etc.

The Grantee should charge a reduced indirect cost rate to the state for services that will be subcontracted by the grantee. (Researching SCM Section 3.06 B).

2. Does the proposal include a detailed budget for each task identified?
Yes.

If no, please explain:

Comments: 1. Need add'l detailed info to further evaluate 2. Hourly charges are provided only for 2 labor categories 3. Budget Detail detail needs to be itemized

Task and Deliverables – Grantee must provide detailed information for all work including subcontractor work for each specific task, services, and work to be performed with the appropriate and corresponding deliverable or end product for each task(s) and/or sub−task(s). Costs associated with each task and deliverable should be evaluated based on what is considered to be reasonable costs for performing similar services.

Work to be performed by subcontractors or other entities in excess of the 25% of the total project dollars the grantee is required to provide a justification for subcontracting services.

The Subcontracted work should be identified with a rate and hours and attributed to each task and deliverable for each year. A performance evaluation is also recommended for subcontractors that receive more than 50% of the grant funds. If the subcontractor has not been identified, a position description complete with education level, experience, and abilities be submitted and the rate and hour associated with that position will be attributed to a task, and deliverable. The grantee must also comply with the State competitive bidding process as stated in the PSP.

3. Are project management expenses appropriately budgeted?
No.

If no, please explain:

Comments: 1. Budgeted amt for project mgmt seems like a token amt compared to the yearly budget of 97% work to be performed by subs − if most of the work is performed by subs (see add'l comments below). 2. For the amt requested only 2% is allocated to PM which leads one to believe that there will be very minimal &insignificant participation from applicant. 3. 65 hrs by applicant per year for proj mgmt is inadequate for work proposed.

Task and Deliverables – Grantee must provide detailed information for all work including subcontractor work for each specific task, services, and work to be performed with the appropriate and corresponding deliverable or end product for each task(s) and/or sub−task(s). Costs associated with each task and deliverable should be evaluated based on what is considered to be reasonable costs for performing similar services.

Subcontracting – Proposals for work to be performed by subcontractors or other entities in excess of the 25% of the total project dollars the grantee is required to provide a justification for subcontracting services. If subcontractors are pre−selected and identified in the proposals as part of the project team, the grantee should provide a justification on how each subcontractor was selected. Grantee shall identify labor rates and indirect costs rates paid to each identified subcontractor to ensure that labor rates are comparable to State rates.

The Subcontracted work should be identified with a rate and hours and attributed to each task and deliverable for each year. A performance evaluation is also recommended for subcontractors that receive more than 50% of the grant funds. If the subcontractor has not been identified, a position description complete with education level, experience, and abilities be submitted and the rate and hour associated with that position will be attributed to a task, and deliverable. The grantee must also comply with the State competitive bidding process as stated in the PSP.

4. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs? Are indirect rates, if used, appropriately applied?
No.

If no, please explain:

Comments: 1. Need add'l info to evaluate 2. Rates identified for subs labor category includes OH, benefits, IDC − but no breakdown or % provided

Budget detail needs to be provided itemized in the format provided by the PSP to enable reviewers to better evaluate and ensure that proposed labor rates are comparable to state rates.

If proposal is funded, a detailed list of items included in the indirect cost rate should provided by the grantee. Grantee must provide itemized and detailed information included and charged as part of Indirect Rates (IDC) charges.

The Grantee should charge a reduced indirect cost rate to the state for services that will be subcontracted by the grantee. (Researching SCM Section 3.06 B).

5. Does the budget justification adequately explain major expenses? Are the labor rates and other charges proposed reasonable in relation to current state rates?
No.

If no, please explain:

Comments: 1. Travel of $47,734 not explained 2. Field Equipment of $14,355 not listed in equipment column 3. It appears that subs will purchase equipment 4. Charges for office expenses of $11,059 not explained need add'l detailed info 5. Ensure no duplication of charges

Major Expenses – If the grant is awarded a detailed list of equipment purchases should be provided by the grantee so reviewers can better evaluate whether it is more cost effective for the state to purchase large dollar equipment items through the state procurement process. If the equipment list is available within the State inventory or stock, then purchase of some or all of the listed items may be provided, loaned, or leased by the state to the grantee. In the event, that the equipment is purchased by the grantee, the grantee shall maintain an inventory of major equipment for auditing purposes and potential use for future projects. Grantee shall follow State Contracting Manual [SCM] Section 7.61 thru 7.62 rules pertinent to equipment purchase, lease, etc.

6. Are other agencies contributing or likely to contribute a share of the projects costs?
Yes.

If yes, when sufficient information is available, please sum the amount of matching funds likely to be provided:

Comments: 1. No breakdown of $$ and what form of matching funds will be provided 2. DFG is identified as a participant as well as providing matching funds 3. Other cost share partners not yet identified

Task and Deliverables – Grantee must provide detailed information for all work including subcontractor work for each specific task, services, and work to be performed with the appropriate and corresponding deliverable or end product for each task(s) and/or sub−task(s). Costs associated with each task and deliverable should be evaluated based on what is considered to be reasonable costs for performing similar services.

Subcontracting – Proposals for work to be performed by subcontractors or other entities in excess of the 25% of the total project dollars the grantee is required to provide a justification for subcontracting services. If subcontractors are pre−selected and identified in the proposals as part of the project team, the grantee should provide a justification on how each subcontractor was selected. Grantee shall identify labor rates and indirect costs rates paid to each identified subcontractor to ensure that labor rates are comparable to State rates.

The cost share partner's work should be identified with a rate and hours and attributed to each task and deliverable for each year. A performance evaluation is also recommended for cost

share partners that receive more than 50% of the grant funds.

Cost Sharing − Grantee shall provide information regarding its financial capability and stability as well as it’s level of commitment for any proposed cost share funds. A detailed budget of the project’s proposed cost share funds should be provided prior to grant funds being awarded. A financial evaluation is recommended for grant agreements that state/claim over 30 % or $250,000 (which ever is less) of matching funds. The evaluation will avoid likelihood of the grantee requesting an amendment to increase project funding due to lack of or miscalculation of matching funds to complete the project.

7. Does the applicant take exception to the standard grant agreement's terms and conditions? If yes, are the approaches the applicant proposes to address these issues a reasonable starting point for negotiating a grant agreement?
Yes.

If no, please explain:

Applicant agrees to T

8. Are there other budget issues that warrant consideration?
Yes.

If yes, please explain:

Comments: 1. Field equipment is identified as part of subs add'l expenses 2. Applicant does not provide OH/IDC rate

Major Expenses – If the grant is awarded a detailed list of equipment purchases should be provided by the grantee so reviewers can better evaluate whether it is more cost effective for the state to purchase large dollar equipment items through the state procurement process. If the equipment list is available within the State inventory or stock, then purchase of some or all of the listed items may be provided, loaned, or leased by the state to the grantee. In the event, that the equipment is purchased by the grantee, the grantee shall maintain an inventory of major equipment for auditing purposes and potential use for future projects. Grantee shall follow State Contracting Manual [SCM] Section 7.61 thru 7.62 rules pertinent to equipment purchase, lease, etc.

See comments on major expenses.

Other comments:

SUPPLEMENTAL COMMENTS: 1. Proposal specifically states that proj mgmt will be supported "done" by subs 2. Proposal narrative as is will need MAJOR re−work to convert to SOW/Agreement 3. Will need a lot of detailed info &breakdown for BUDGET 4. SUBS ARE FOR PROFIT PRIVATE FIRMS. State bidding process should be followed. How where they chosen? Were state ctring rules followed if subs are already identified??

END OF REVIEW

Environmental Compliance Review

1. Is compliance with California Environmental Quality Act (CEQA) required for this project?
YES***X*** NO−

2. Is compliance with National Environmental Policy Act (NEPA) required for this project?
YES− NO***X***

3. Does this project qualify for an Exemption or Exclusion under CEQA and NEPA, respectively?
YES***X*** NO− N/A−
Comments:

Tracer gravel deployment will probably require a 1602 agreement. CEQA compliance will, therefore, be necessary. The applicant will then qualify for a class 6 Categorical Exemption.

4. Did the applicant correctly identify if CEQA/NEPA compliance was required?
YES− NO***X***
Comments:

5. Did the applicant correctly identify the correct CEQA/NEPA document required for the project?
YES− NO***X*** N/A−
Comments:

The applicant did not identify the need for CEQA, thus they did not identify a document.

6. Has the CEQA/NEPA document been completed?
YES− NO***X*** N/A−

7. If the document has not been completed, did the applicant allot enough time to complete the document before the project start date?
YES***X*** NO− N/A−

8. If the document has not been completed, did the applicant allot enough funds to complete it?
YES***X*** NO− N/A−
Comments:

9. Did the applicant adequately identify other legal or regulatory compliance issues (Incidental Take permits, Scientific Collecting permits, etc,) that may affect the project?
YES− NO***X*** N/A−
Comments:

Tracer gravel deployment will probably require the operation of a backhoe or other large equipment on the stream bank. A 1602 agreement would then be required.

Identify those additional permits that may be needed by this project:

1602 Agreement

10. Does the proposal include written permission from the owners of any private property on which project activities are proposed or, if specific locations for project activities are not yet determined, is it likely that permission for access can be obtained?
YES***X*** NO− Project is on public land/water or question is otherwise N/A−
Comments:

11. Do any of these issues affect the project's feasibility due to significant deficiencies in planning and/or budgeting for legal and regulatory compliance or access to property?
YES− NO***X***
Comments:

Prior−Phase Funding Review

Project Title	Mining Reach 7/11 Segment No. 1
CALFED Contract Management Agency	MWD and AFRP
Amount Funded	7010900
Date Awarded	1997/01/01
Lead Institution	Turlock Irrigation District
Project Number	CF 1997−M09

Project Title	Mining Reach − MJ Ruddy Segment No. 2
CALFED Contract Management Agency	AFRP
Amount Funded	7718000
Date Awarded	1999/01/01
Project Number	CF 1999−F02

Project Title	Special Run Pool 9
CALFED Contract Management Agency	MWD and AFRP
Amount Funded	2602500
Date Awarded	1997/01/01
Project Number	CF 1997−MO8

Project Title	Fine Sediment Management Plan
CALFED Contract Management Agency	NFWF
Amount Funded	995120
Date Awarded	2001/01/01
Project Number	CF 2001−NO9

3. Have negotiations about contracts or contract amendments with this organization proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?
Yes.

4. Are the status, progress, and accomplishments of the organization's current CALFED or CVPIA project(s) accurately stated in the proposal?
No.

Progress of Mining Reach 7/11 Segment No. 1 and Mining Reach − MJ Ruddy Segment No. 2 projects have been delayed due to realty acquisition and easement appraisal problems. These delays stemmed from federal interagency disageement regarding the manner by which the easement was acquired; hence the delays were largely out of Turlock Irrigation Districts Control. The 7/11 reach has been constructed and is in the post project monitoring phase. The MJ Ruddy Project is concluding its third aqcuisition appraisal process, but the easement rights have not been purchased to date. Construction needs to occur this Summer to avoid additional delays.

5. Has this organization made adequate progress towards these project(s)' milestones and outcomes, without unreasonable divergences from project schedules or poor−quality deliverables?
No.

Progress hampered by realty problems discussed in question #4 response.

6. Is the applicant's reporting, record keeping, and financial management of these projects satisfactory?
Yes.

7. If this application is for a next phase of a project whose contract your agency currently manages, will the project(s) be ready for next−phase funding to monitor and evaluate project outcomes in fiscal year 2005/6, based on its current progress and expenditure rates?
N/A

Other comments:

Prior−Phase Funding Review

Project Title	Fine Sediment Management Plan
CALFED Contract Management Agency	NFWF
Amount Funded	995120
Date Awarded	2001/01/01
Project Number	CF 2001−NO9

3. Have negotiations about contracts or contract amendments with this organization proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?
Yes.

4. Are the status, progress, and accomplishments of the organization's current CALFED or CVPIA project(s) accurately stated in the proposal?
Yes.

5. Has this organization made adequate progress towards these project(s)' milestones and outcomes, without unreasonable divergences from project schedules or poor−quality deliverables?
No.

There are some delinquent deliverables due to permitting delays.

6. Is the applicant's reporting, record keeping, and financial management of these projects satisfactory?
Yes.

7. If this application is for a next phase of a project whose contract your agency currently manages, will the project(s) be ready for next−phase funding to monitor and evaluate project outcomes in fiscal year 2005/6, based on its current progress and expenditure rates?
Yes.

Other comments:

Assuming that construction of the sedimentation basin and the riffle cleaning tasks proceed on the revised schedule, the applicant will be ready to accept additional funds for long−term monitoring.