

Draft Individual Review Form

Proposal number: 2001-C201

Short Proposal Title: Clear Creek Floodway
Restoration

1a) Are the objectives and hypotheses clearly stated?

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?

1c2) Is the project likely to generate information that can be used to inform future decision making?

This project is an interesting and somewhat ambitious proposal to improve sediment/substrate conditions in an almost 3-mile reach of a stream which has experienced degradation resulting from gravel extraction and flow and sediment transport reduction from 2 dams, one of which is to be removed as part of the project. Besides this removal which will allow restored access to about 10 river miles, the main project activities are to fill in some of the gravel pits (reducing stranding of migrants and residents), and to restore the channel/floodplain configuration to promote habitat diversity for benefits of fish as well as other wildlife. The hypotheses to be tested are appropriate, interesting and valuable, although this is more of a case in which 'testing the hypotheses' consists mostly of conducting post-treatment monitoring to assure that restoration goals are being met (and there are a lot of goals). Thus, this is not so much a research contribution but a substantial restoration effort that seems to offer a reasonable probability for success.

One of the drawbacks of the work, as written, is that it is not clear what will constitute success, and on what timeframe. No doubt some improvement will occur, but what level of recovery is necessary with fish, with vegetation, with birds and other wildlife, to justify the fairly expensive operation being planned? What is the desired end result for vegetation status and how will it be evaluated? Are current baseline data sufficient to document the extent of recovery of various ecosystem components? I realize that baseline data are intended to be collected as the initial part of a funded program, but it would have been useful to see the existing data on current ecological conditions rather than a bunch of engineering maps. Part of the work has already been funded by CalFed, but these ecological data were not provided in this proposed Phase; all of the color photos did little to compensate for lack of data. How many fish are actually being lost due to stranding, or maybe due to exotic predators? Nonetheless, a lot of thought has gone into how the engineering work will take place, and how biological and physical responses will be assessed, so it still seems to be a thoughtful and somewhat inspired program that is bound to improve the situation. It even has a quite substantial education/outreach component to the project, which increases the potential to provide illustrative input to other programs in the region.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?

As noted above, a lot of monitoring and reporting is proposed, but it is not clear how these data will be assessed and I believe that further evaluation of cost-effective and information-rich monitoring should be further considered. Such re-consideration need not hold up project funding, but it would be helpful to have further assessment, possibly by additional, uninvolved parties from a research background. There should also be a clearer picture of what conditions exist over a substantial period prior to construction work, so that before/after comparisons are statistically valid and quantification can be reliable.

3) Is the proposed work likely to be technically feasible?

The basic project seems reasonably feasible, with enough flexibility to take into account new information or unforeseen circumstances. However, while the intended geomorphic landscape seems quite reliable in the short-term, I am not certain that extensive evaluation of the stability or resistance of the new configuration to future high-flow events has been fully considered. The project has clearly been given a lot of thought, but the capacity for predicting extent of success is limited.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?

The team provides substantial administrative and technical monitoring talent, particularly in the area of fish & wildlife biology and environmental assessment. Lacking, however, is a strong research base, from either the academic or the agency realm. This shows in the conceptual and scientific framing of the proposed project and criteria for evaluating success, and I think that not only would the proposal benefit from additional input from that perspective, its likelihood of success and cost-effectiveness would be enhanced.

Miscellaneous comments

Is there any possibility of modifying discharge from Whiskeytown Reservoir in order to facilitate some natural scouring/channel configuring events?

There is too much paper spent on administrative aspects of the project. Also, the project seems quite expensive for really just pushing gravel around and putting some plants into the ground. The costs of several project components might be re-considered in terms of cost and benefit, and appropriateness for CalFed to be funding them - e.g., education/outreach is good, but is a half million dollars justifiable? Monitoring is good, and keeps a bunch of consultants housed, but 3/4 million dollars seems a bit excessive. And, has there been an attempt at cost-reduction of the \$5 million for hiring caterpillar drivers - or, it's not really clear how costs are apportioned between 'service' and material/acquisition for 'construction'? What the heck is a \$3/4 million 'contingency'? By the way, how does \$3.5 million in previous CalFed funding count as 'cost-sharing' on a CalFed proposal?

I do not doubt that some manual revegetation will be necessary, but \$1/2 million worth? What is the role of natural re-vegetation vs. manual methods? Will it be experimentally tested? Can natural processes be somehow promoted in order to increase survival (growing and transplanting cuttings is both expensive and often results in poor growth and even survival)? There are a lot of different sampling schemes being planned for vegetation, with ‘permanent plots, circular plots, and band transects’ proposed, but it is not clear that a lot of thought went into figuring out most cost-effective and information rich approaches to documenting vegetation condition. Why all three, when there is a lot of overlap in the parameters intended for each method? How will they all be analyzed? Are all the parameters essential to provide critical information? Have aerial photos and image interpretation been considered as a less expensive and less labor-intensive way of documenting critical elements of vegetation condition? Are other soil parameters than just moisture intended? Can a subset of sites be used for representative veg. sampling rather than sites intensively distributed throughout the entire reach? More data don’t always mean better data.

Exotic plants are mentioned, but what is their current role in the system? What are they? How do you know that you aren’t creating better conditions for exotic invasion, given that natural flooding is no longer present?

I missed a discussion of what happens to the sediment behind Saelzer Dam when it is removed, although it probably is in the unwieldy document somewhere besides the statement that this gravel will be ‘integrated into bedload and not be swallowed by pits’; and why not put it into pits? Will gravel addition be a continued maintenance component, or is there potential for a self-sustaining channel at some point? Are there current measures of bedload and sediment that can yield estimates of future inputs? Given the ‘sediment’starved’ condition of the reach, what is the potential for future flooding to essentially remove all of the imported or transferred substrate material from the bed?

What are the 10 riparian focal species (birds) present, and are there any conflicts between managing for birds at the same time as managing for fish?

Overall Evaluation Summary Rating

- Excellent
- X** **Very Good**
- X** **Good**
- Fair
- Poor

Provide a brief explanation of your summary rating

Good to Very Good I believe that this is a supportable project (although I wonder if the funding level may be on the high side), and that the deficiencies in the proposal can be rectified during the process of project development. It is not designed to be a research study, yet its value for other programs in the region would be improved by a more scientifically rigorous approach to the effort. The investment to-date is appropriate because there is good potential for ecosystem enhancement in this reach of Clear Creek, and I would like to see future funding hinge on strong quantitative assessment of all phases of the project during project development and not just afterward.

