

CALFED Bay-Delta 2002 ERP Directed Actions -- Selection Panel Review

Proposal Number: 181DA

Applicant Organization: Turlock Irrigation District

Proposal Title: Tuolumne River Mining Reach Restoration Project: Warner-Deardorff Segment No. 3 Construction

Recommendation: Fund With Conditions

Amount: \$10,839,000

Conditions of approval:

1. The applicant will meet with the ERP staff to discuss in more detail the issues to be addressed in a revised proposal.
2. Based on this feedback, the applicant will prepare a newly revised proposal.
3. This proposal will be reviewed by the Adaptive Management Forum for Large-Scale Channel Restoration (AMF).
4. The AMF will provide feedback to the ERP staff on whether the revised proposal has sufficiently addressed the experimental design and adaptive management issues.

Provide a brief explanation of your rating:

The Selection Panel has reviewed the revised proposal and the new technical reviews. While the revised proposal is partially responsive to the comments previously provided by the Selection Panel, we believe additional work needs to be done on the experimental design and setting the adaptive management context for this proposal. In addition, we are mindful that this is phase three of a four phase project, and the Selection Panel believes these issues (experimental design and adaptive management) must be addressed at this larger scale.

Therefore, we recommend funding this proposal with the following conditions:

5. The applicant will meet with the ERP staff to discuss in more detail the issues to be addressed in a revised proposal.
6. Based on this feedback, the applicant will prepare a newly revised proposal.
7. This proposal will be reviewed by the Adaptive Management Forum for Large-Scale Channel Restoration (AMF).
8. The AMF will provide feedback to the ERP staff on whether the revised proposal has sufficiently addressed the experimental design and adaptive management issues.

As was discussed in the Selection Panel's previous comments, we disagree with the one technical reviewer who objects to the approach taken in this proposal. Grade control structures have been attempted on the Tuolumne (and Merced) Rivers, and their poor performance is well documented in the literature. The ERP is focused on creating self-sustaining ecosystems, including sediment transport in gravel-bedded rivers. Grade control structures are not consistent with this approach.

The Tuolumne River, and this reach of the river, is a high priority for the CALFED ERP. This approach to river restoration is new and at an unprecedented scale. The AMF is also working on similar projects on the Merced River and Clear Creek. Information generated from these efforts must continue to be shared among these rivers and throughout the Central Valley so that we maximize our learning opportunities.

Research and Restoration External Review Form
CALFED Ecosystem Restoration Program 2002 Proposal Solicitation Package

Proposal Title: Tuolumne River Mining Reach Restoration Project: Warner-Deardorff Segment No. 3-Construction

Review:

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The goal is clearly stated, but the objectives are not. No attempt seems to have been made to separate the two or establish the necessary hierarchy. The hypotheses are not well formed. Most of the hypotheses, while measurable, are merely statements of success criteria. What appears to be lacking are the hypotheses relating to streambed stability and maintenance of long-term habitat structure related to the geomorphology of the reach.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

Based on the FERC mandate and the *Habitat Restoration Plan for the Lower Tuolumen River Corridor*, the justification of the proposed is well grounded. However, no understanding of the pre-mining or pre-settlement conditions of the river seems apparent. The design and proposed construction work is overly focused on habitat for salmon at the exclusion of competing organisms.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approach is extremely expensive and overly possessed of brut force. The imported bed material, in the absence of grade control, will not likely linger long in the reach. And, the setback levees will only hasten the transport of material out of the reach by increasing the velocity of flood flows. Since similar projects are being tested elsewhere, a different approach should be tried here. A serious attempt at grade control (e.g., think beaver dams and woody debris) should be tried. Such a project would add a good deal to the information base.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives? As design, the project is expensive but feasible.

The construction techniques are well tested and should not involve special skills or equipment. Further documentation will be needed before construction begins: construction drawings, specifications, and contracts.

5. **Project`-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

The monitoring plan, for the short-run is well formed.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

The products, as stated, are appropriate. Because of the standard restoration techniques that are being used, little new information will result and, certainly, no new generalizations are likely.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

The design and implementation teams seem well qualified and quite familiar with the site conditions.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

The cost is extremely high: over \$8 million per mile (close to the cost of a mile of rural interstate highway and about \$150 thousand per acre (equivalent to an acre of well placed, high quality suburban land). The advocates for this project should first assess the probability of successfully creating and maintaining the habitat over ten years. If the cost of the project is multiplied by the probability of success, the expected value of the work will be defined. The risk to the investors in this project is the difference between the cost and the expected value. The risk of failure appears to be quite large.

Miscellaneous comments:

Please provide an overall evaluation summary rating: Excellent: outstanding in all respects; Good: quality but some deficiencies; Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
- Excellent	I ranked the proposed project as poor because of the conventional techniques being employed and the low probability of any new insights resulting from the project. The cost is high, in part, because of the conventional construction techniques. The risk of failure seems quite large.
- Good	
X- Poor	

Research and Restoration External Review Form
CALFED Ecosystem Restoration Program 2002 Proposal Solicitation Package

Proposal Title: *Tuolumne River Mining Reach Restoration Project: Warner-Deardorff Segment No. 3. – Construction*

Review:

1. Goals. Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

Goals, objectives, and hypotheses are all very clearly stated, cross-referenced, and described in detail. Since increased sediment mobility is featured in this project, replenishing coarse gravel to the reach is required to be consistent with that goal. Replenishment is included in the project.

2. Justification. Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

In my first review, I recommended that several more bedload samples be taken to guide the selection of gravel sizes for the main conveyance channel. I see no statement addressing this recommendation.

Also, I indicated that I did not understand the regulated flow frequency from Don Pedro Dam. I do not see this issue addressed in this modified proposal.

3. Approach. Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approach in this proposal is among the most coordinated and detailed I have seen, an apparent culmination of several prior projects, reports, and public meetings. If funded, the results will add to our base of knowledge about sediment mobility, regulated river planform migration, and impacts of both on salmon spawning, migration, and survival. The processes used to restore the channel and floodplain are well understood and therefore not novel, but the implementation is novel and will provide useful information to decision-makers.

4. Feasibility. Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

The approach is feasible pending success in (1) experiencing a diverse set of outflows from Don Pedro Dam, and (2) replenishing the coarse gravel supply to the river. Unfortunately, neither of these two contingencies is explained in detail in the proposal. Most dams have very limited ranges of releases to downstream channels. While broadening the range of discharge may be addressed elsewhere or even required, little mention was made in the proposal. Gravel replenishment is mentioned in several places in the proposal, but no details are proffered in the main proposal body. Potential gravel sources are identified but no costs for future replenishment are included.

5. Project-Specific Performance Measures. Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

I raised a concern that the proposers did not adequately address post-project monitoring. They have addressed this concern on page 29 of the proposal where they describe that they will (1) ask TRTAC to expand long term monitoring for more riparian forest ecology and (2) seek additional funding for longer term monitoring.

6. Products. Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

I moaned a bit when the only products identified were the traditional ones of a report, etc. I recommended considering video documentation, web sites in real time, and time-lapse photographs. I see no changes in the modified proposal to address these recommendations.

7. Capabilities. What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

The experience, expertise, and track record of the applicants match the ambitious scale of the proposal. They recognize the need for qualified experts in hydraulics, geomorphology, fisheries, biology, and riparian vegetation. They provide experts in each.

8. Cost/Benefit Comments. Is the budget reasonable and adequate for the work proposed?

I opined that the revegetation was extremely expensive at \$8,000 per acre. Although the proposers do discuss costs in more detail in this resubmission, I can't find where they address revegetation costs.

Miscellaneous comments:

Please provide an overall evaluation summary rating: Excellent: outstanding in all respects; Good: quality but some deficiencies; Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
- Excellent	Because the authors addressed only one of my concerns, my rating does not improve and remains at something between good and excellent.
- Good	
- Poor	

**CALFED Bay-Delta Directed Action
Administrative Review
Budget Evaluation**

Proposal number: 181

Proposal title: *Tuolumne River Mining Reach Restoration Project: Warner-Deardorff Reach.*

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

Yes. Two budgets are included. The first budget breaks the overall costs into yearly segments and includes major tasks within years, such as construction costs, permit costs, etc. The second budget includes a detailed engineers estimate and is itemized into construction related items, revegetation costs, indirect contractor costs, right of way, and monitoring. The budget appears to be very detailed.

If no, please explain:

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

Yes. Each task is broken into smaller, measurable categories. The construction costs are split into a total of 23 duties, and the revegetation costs are broken into 26 duties. Each labeled duty has a specific cost associated with it. For example, item 36 of the revegetation task indicates a total of 34 red willows will be planted at a cost of \$256 each for a total cost of \$8,704.

If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

Yes. The narrative budget section identifies construction management and project management costs. There are no indirect or overhead costs.

If no, please explain:

4. Are appropriate project management costs clearly identified?

Yes. Project management costs are identified in the narrative on page 22, the budget section on page 23, and in the budget summary.

If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

Yes.

If no, please explain (for example, are costs to be reimbursed by cost share funds included in budget summary).

6. Does the budget justification adequately explain major expenses?

Yes. Levee setback construction, the bulk of the budget is broken into sub-categories . Other categories include floodplain reconstruction, revegetation, mineral rights purchase, and construction permits.

If no, please explain:

7. Are there other budget issues that warrant consideration?

No.

If yes, please explain:

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Ecosystem Restoration Program –Directed Action: Land Acquisition

Proposal No: 181 DA

Applicant: Turlock Irrigation District

Proposal: *Tuolumne River Mining Reach Restoration Project: Warner-Deardorff Segment No. 3 -Construction*

1. Is the site's ecological importance documented in the proposal? If yes, please import relevant text and citations here

Yes.

“The Tuolumne River supports a population of fall-run chinook salmon, whose numbers have fluctuated from 40,000 fish in 1985, to a low of 100 fish in 1991, and is on another upward swing with 7,000 fish in 1997; 8,900 in 1998; 7,900 in 1999; and 18,000 in 2000. Given the large potential to make significant improvements in wild salmon production and the success of the stakeholder organization, Tuolumne River Technical Advisory Committee, in promoting river-wide restoration goals, the CALFED – ERP has designated the Tuolumne River as one of three Demonstration Streams in the Central Valley....This is the fourth of ten restoration projects being proposed for the Tuolumne River based on the Habitat Restoration Plan for the Lower Tuolumne River Corridor developed by the TRTAC....The goal of the restoration projects is to have higher numbers of returning salmon combined with more stable levels of natural fall-run salmon production.”

2. Is the owner's willingness to sell the site documented in the proposal? If no, please explain:

Yes.

3. Is evidence of local government support for the purchase included in the proposal? If yes, please explain:

Yes. The proposal states: “Several outreach meetings have been held with City of Modesto and Stanislaus County public works and planning agency staffs starting in December 1998. The Stanislaus County planning department is also actively involved with the Project induced modifications to the mining reclamation plan boundary in the use permits for the mining operations in the project areas.”

4. Is the use proposed for the site after its purchase clearly consistent with the site's general plan designation and zoning? If no, please explain:

Unclear. The site is designated Agriculture + Mineral Resources in the county's general plan, and zoned A-40. The project will require a conditional use permit.

5. Is the land mapped as prime farmland, farmland of statewide significance, unique farmland, or farmland of local importance? If yes, please explain the classification:

No.

- Is the site under a Williamson Act contract? Yes.
- Will use of the site change from agriculture after its purchase?

The site is a quarry, not agricultural land.

6 Is this a time-sensitive acquisition opportunity, according to the proposal? If yes, please import relevant text here:

Yes. According to the proposal, "Mr. Deardorff has indicated that if the restoration project is not funded he will proceed to mine his portion of the project area in conjunction with another portion of his property that is to be converted to mining within the next few years."

Other Comments:
