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

Proposal Number: 32DA
Applicant Organization: California State Reclamation Board
Proposal Title: Two Dimensional Detailed Hydraulic Model for Determining Flood Conveyance Impacts of Ecosystem Restoration Projects in the Yolo Bypass

Recommendation: Fund As Is

Amount: $500,257

Conditions, if any, of approval (if there are no conditions, please put "None"): None

Provide a brief explanation of your rating:

There is no question that the model for which this proposal seeks funds will be useful, if Yolo Bypass restoration projects continue in the future. This rewritten proposal explains the need for upgrading the present 2-D hydraulic model that was developed earlier but not really used. Apparently, lack of resolution, among other issues, reduced the model's effectiveness. The primary improvement for the model will be getting high resolution topographic data. It is stated that with these data the model will be much more useful for the various restoration projects proposed for the Yolo Bypass. Once the model is upgraded, it will be tested on a DFG wildlife area for validation.

In the original proposal, there was little explanation of why a 2-D model is better than a 1-D model for Yolo. This has been clarified. There was also little explanation of why the already developed 2-D model wasn't being used. The explanation of need for higher resolution apparently explains why it wasn't used and why this project is so important.

There will be many future restoration projects in the Yolo Bypass. If there is a need for a good hydraulic model to examine the effects of flows through the bypass on restoration projects, then an improved 2-D model might be called for.

There was originally some question about the qualifications of the experts that will work on this project. The resumes are more extensive in this edition of the proposal; however, it is interesting to note that most of the expertise on this project is from the Corps and not other entities that do this type of modeling

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

Proposal Title: TWO DIMENSIONAL HYDRAULIC MODEL FOR DETERMINING FLOOD CONVEYANCE IMPACTS OF ECOSYSTEM RESTORATION PROJECTS IN THE YOLO BYPASS

Review:

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

The objectives and goals of this proposal are clear. The proposed project is timely and important. There is no question about that.

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?

The overall concept for the project is rational and justified by the proposal, given existing knowledge. However, there is a lack of clarity around key issues the underlying basis for choices regarding the approach to implementation that weaken this justification. Examples of these include:

a) The choice of a 2-d over 1-d approach : Most would agree that the 2-d model approach will likely provide greater resolution of river than a 1-d approach for estimating establishing conveyance, yet it is unclear whether this is relevant to flood management in the Yolo Bypass. Given the difficulty encountered in the first attempt at developing and calibrating steady and unsteady versions of a 2-d model and the key challenges anticipated for this second attempt – is it really worth it or even relevant from a management perspective to have resolution in the range of 0.1 feet? Are flood guidelines really that precise, if so how is does management occur now in the absence of such predictive capability?
b) Why can't the developers of the model conduct the technical analyses themselves (even paid by restoration proponents to do so)?: A large portion of the cost of this effort is preparing extension materials (i.e. case study, workbook etc). One could argue such an approach provides greater continuity of application and is more cost-effective – but may not be practical possible because of funding sources, institution arrangements etc. A large component of the cost of this work is dedicated to developing a workbook and making the proposed model transferable, and cost is at the heart of all of previous reviews of this proposed project.
c) How many restoration projects would this model be used for? One could also argue that it is not worth doing this unless there is an expectation that this model will get used, and used frequently so that the extent of amortization of model development costs across projects can be more clearly understood. If this is known is should be stated, if it is not it should been considered.

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 proposal provides an insufficient discussion of the alternative approaches to complete the work to fully understand the implications and justification of the approach. It is unclear whether the development of hydraulic model and simply passing it to restoration proponents to complete their own assessment of flood conveyance impacts resulting from a individual proposal without appropriate ongoing technical support from technical staff familiar with the model, is practical or cost-effective. The application of the model requires a high level of specific expertise and it is not likely that such proponents will have the in-house capability to simply obtain the model, read the workbook, and use it. Developing such a model and running it provides will provide a wealth of experience and familiarity that greatly decreases the time and therefore cost needed to complete technically competent and relevant analyses. If the CSRB will still need to review the results to determine technical compliance (and hence the application procedure itself) the approach seems to add in extra steps, and it seems more efficient for the developers of the model to complete the flood conveyance impact assessment themselves. Admittedly, I do not fully understand the institution feasibility or political ramifications of this approach and but did expect to some discussion of this to help justify the proposed approach to implementation.

The project will produce some novel information such as new topographic data, but it may not get over the barriers encountered in the first attempt to complete this work, and fail to provide a functioning and transferable model. Since the initial attempt failed there remains a critical need to clearly diagnose this failure and provide a clear plan for resolving those issues. The proposal does identify a new "piece-by piece" strategies for modeling that may reduce stability problems but this is not guaranteed. An appropriate contingency plan was stated to be developed for this, but not included in the proposal.

The results from this work will undoubtedly add to the base of knowledge of the topography of the Yolo Bypass, and if model development is successful it will improve capability to predict flooding impacts. There is no question that this information will be useful for decision makers. How useful this will be to restoration proponents reamins uncertain.

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?

This project is likely to be feasibility. Past attempts encountered problems in successful development of the intended management tool and some steps have been taken to learn from the experience and to develop modeling approaches that could overcome observed difficulties. It is clear this project does not have 100% change of success because of the conceptual approach and technical difficulties, and it may have spin-off benefits regarding experience gained in the development of such large scale model applications. Despite uncertainty, the project is worth the risk given the intrinsic importance flood management in the Yolo Bypass, potential restoration actions and possible confounding effects of restoration on flood conveyance.

The scale of the project is consistent with the objectives. Big.

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?

There are no performance measures other than successful completion of the project other than the delivery of the products on time and budget. The project does have several key deliverables (new topographic data; calibrated/documented 2-d model; case study; workbook) and these could be simply yet valuable amendments to the proposal.

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?

Successful development of a 2-d hydraulic model for determining flood conveyance in the Yolo Bypass would be a valuable asset to the management of the restoration activities.

This conclusion is dependent on the three critical assumptions that: 1) the 2-d approach will provide better resolution on flood stage than a simpler 1-d hydraulic model, and, that this improved resolution in flood stage will improve floodplain management; 2) the product is directly transferable to other users requiring little additional technical support and advice from the model developers, and 3) there enough demand for the application of the product to justify additional cost to make it easily transferable.

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 investigators appear to be qualified to complete this work and should have sufficient the institutional support and infrastructure required to complete the work. This is not a limiting factor.

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

The proposed budget for this program is higher than maybe routinely expected, but not completely unreasonable for a project of this scope and complexity when completed in the proposed institutional setting.

Miscellaneous comments:

This project is an expensive and uncertain undertaking, yet if successful would provide an important tool for floodplain managers. The revised proposal demonstrates responsiveness to reviewer concerns about the cost of the work but still leaves some gaps in the justification for the project concept and technical approach.

Given inherent challenges of this project it may be more strategic and cost-effective to more explicitly divide this project into three phases. First, the demonstrate that the 2-d model is technically feasible. Second, that it can be practically implemented for habitat restoration planning, and finally that it can effectively transferred to naive and possible unskilled users.

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

Overall Evaluation	**Provide a brief explanation of your summary rating**

Summary Rating	
- Excellent	The proposed work is an important component of a system to manage development and implementation of restoration projects in the Yolo Bypass. The costs have been reduced from a previous submission to improve cost-effectiveness, yet key aspects to associated with the justification for the approach remain missing. This absence detracts clarity/justification yet does not necessarily diminish its value. It may be more strategic to phase the program to manage the anticipated challenges and consequent risks
- X Good X	
- Poor	

CALFED Bay-Delta Directed Action
Administrative Review
Budget Evaluation

Proposal number: **032DA**

Proposal title: **Two Dimensional Hydraulic Model for Determining Flood Conveyance Impacts of Ecosystem Restoration Projects in the Yolo Bypass**

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

Yes

If no, please explain:

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

Yes

If no, please explain:

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

No

If no, please explain:

The Budget Justification form provides the formula for determining the Corps Hourly Overhead Rate, and shows the Corps Engineering Division Overhead Multiplier and Indirect Cost Multiplier, but does not state what expenses are encompassed in the overhead costs. The Project Information Form comments section (#21) states that all benefits are accounted for in indirect costs.

4. Are appropriate project management costs clearly identified?

Yes

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?

No

If no, please explain:
It is not clear from the Budget Justification Form what subcontractor or consultant will be performing Tasks 6, 7 and 9. The Conflict of Interest Form states that there are no subcontractors, while the budget shows that Tasks 6, 7, 9 and 10 are in the "Services or Consultants" category. Apparently the Yolo Basin Foundation will be performing Task 10, Public Outreach.

7. Are there other budget issues that warrant consideration?

No

If yes, please explain:

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