

Proposal Reviews

#81: Employing a Particle Tracking Model to Simulate Delta Hydrodynamics with Future Delta Infrastructure such as the Through Delta Facility

HDR Engineering, Inc.

Research and Restoration Technical Panel Review

Delta Regional Review

External Scientific Review #1
#2

Environmental Compliance

Budget

Research and Restoration Technical Panel Review:

CALFED Bay-Delta 2002 ERP PSP Research and Restoration Technical Panel Review Form

Proposal Number: 81

Applicant Organization: HDR Engineering, Inc.

Proposal Title: Employing a Particle Tracking Model to Simulate Delta Hydrodynamics with Future Delta Infrastructure such as the Through Delta Facility

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;

Above Average: Quality proposal, medium or high regional value, and no significant administrative concerns;

Adequate: No serious deficiencies, no significant regional impediments, and no significant administrative concerns;

Not Recommended: Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	Technical reviewers and regional reviewers all rated this proposal as poor.
-Above average	
-Adequate	
<input checked="" type="checkbox"/> Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

The goal is broadly stated to provide insight to potential effects on delta hydrodynamics from a Through Delta Facility (TDF). Objectives would be to apply Particle Tracking Models (PTM) toward questions posed by Calfed assessment teams. The technical review panel identified the lack of specific objectives and hypotheses as an issue.

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

This is not presented as a research project but rather a further application of the PTM with the assumption that it would be used to address potential impacts of the TDF. This is questionable since DWR is not pursuing these questions by using their own model and the proposal relies heavily on commitment of resources by DWR. While listed under the priority of minimizing diversion effects of fish specific relationship to that priority is not clear, nor how the information would be used in design of management or restoration activities. No

specific information on validation is given.

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

The approach involves obtaining an existing model from DWR, their records of existing runs, evaluation of the capabilities of the model, and running and calibration under different conditions. Model results would be presented and distributed in the form of technical memoranda. No process to insure that affected agencies would actually use these memos. The proposal states that the effectiveness of the model to address the questions will be handled by the agencies expertise. This makes judgement of project products and success impossible.

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

Costs seemed high to the reviewers but it was difficult to judge the cost effectiveness from this poorly documented proposal.

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

Project was ranked low. No plan for local involvement and inadequate linkage with other restoration activities in the region. They further stated that perhaps ERP should consider funding this if they felt it worthy as the focus is on water project facilities and not research.

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

No legal or regulatory issues were identified.

Miscellaneous comments:

None

Delta Regional Review:

Proposal Number: 81

Proposal Title: Employing a Particle Tracking Model to Simulate Delta Hydrodynamics with Future Delta Infrastructure such as the Through Delta Facility

Overall Ranking: Low -Medium -High

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

Panel did not feel that proposal, as presented, would provide scientific information that will be helpful in making decisions in the Delta. Current DWR modeling likely provides substantially the same planning applications. Rating could have been better if there was more clearly a value added to current planning tools and that the application of this tool would guide the location and restoration strategies for new tidal wetlands in the Delta.

1. Is the project feasible based on local constraints?

Yes -No

How?

I could not identify any local constraints that would impede the projects ability to move forward in a timely and successful manner.

 Existing PTM models available to perform these evaluations may be adequate even though some are only one-dimensional.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

Yes -No

How?

Proposal claims it helps meet Goal 1 of the Strategic Plan. The connection is, however, tenuous. No mention is made of the Strategic Goal related to ecological processes that are critical to achieving Goal 1. No mention is made of priority MR- 6:

 Ensure recovery of at-risk species by developing conceptual understanding and models of processes that cross multiple regions.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

-Yes XNo

How?

As proposed, there is inadequate linkage with other restoration activities in the region.

4. Does the project adequately involve local people and institutions?

-Yes XNo

How?

applicant claims this element is not relevant to this proposal. Coordination and involvement is essentially limited to existing technical teams and PWTs.

There is no plan for local involvement.

Other Comments:

 As proposed, will have only limited restoration and conservation consequences since main focus is on impacts of facilities.

 Since the primary focus is on water project facilities and their operation perhaps another CALFED program should fund this proposal and not ERP.

 If the proposal was modified so that it included the capability to assess hydrodynamic changes associated with habitat restoration projects it would have a useful application to the ERP and should be funded at least partially by ERP.

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **81**

Applicant Organization: **HDR Engineering, Inc.**

Proposal Title: **Employing a Particle Tracking Model to Simulate Delta Hydrodynamics with Future Delta Infrastructure such as the Through Delta Facility**

Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

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	This is weak proposal with poor justification on how results would be used, It depends heavily on the cooperation of DWR, an agency that should be pursuing studies with their own model if they thought it was a worthwhile endeavor. I would like assurance that this information was greatly needed and that the results would be welcomed and used by the agencies involved. There was no indication that this was the case, however.
-Good	
XPoor	

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

The goals of this project were broadly stated: to employ existing particle tracking models (PTM) on several hydrodynamics questions, and to determine the accuracy of the PTM in addressing those questions. The main question to be addressed is, how would a Through Delta Facility affect Delta hydrodynamics and particle movement under different operating and hydrologic conditions? More specific goals and hypotheses would have made this section more helpful.

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 project is listed under the priority of "minimizing diversion effects of fish" but the specific relationship to that priority is not clear, nor is it clear how this information would be used in the design of specific management and restoration activities. The author states that the model would present a significant cost-savings to individual as well as agencies collectively,' but there was no substantiation of this statement.

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 involves obtaining an existing model from DWR, obtaining their records of existing model runs, evaluate the capability of the model, and run and calibrate the model under different conditions. It was unclear how much DWR had already done on this front. If this were a high priority, it seems that DWR would be following up with their own model runs.

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?

Because DWR is not pursuing these questions by using their own model, it is questionable as to the utility of this project. The proposed project relies heavily on the commitment of resources from the DWR, in terms of technology transfer, staff time, and data sharing. The author states that DWR staff have agreed to provide technical review and support of the modeling, but a written commitment in the form of a letter of support would make this statement more credible. If DWR presently doesn't have the staff and time to work with the model in-house, what guarantee is there that they would commit the necessary resources for an outside entity to run the model?

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 validity of the PMT model was shown in a masters thesis, but no specific information on the validation method was given. The author states that the effectiveness of the model to address the questions will be handled by the individual agencies (sic) expertise.' This statement makes it impossible to judge the success of the proposed project.

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?

Model results would be presented and distributed in the form of Technical Memoranda. There is a lack of involvement with the affected agencies, which would assure such memoranda would actually be used by Calfed. It was not clear what discussions on needs assessment had occurred with the relevant agencies before this proposal was written.

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 author has worked with the Calfed program, and is familiar with many of the questions faced by managers. There is no reason to believe he could not run and calibrate the existing DWR model.

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

The authors are requesting almost \$200,000 for a questionable product. I would rather fund DWR for one technician for one year at \$40,000 to do the same type of work.

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **81**

Applicant Organization: **HDR Engineering, Inc.**

Proposal Title: **Employing a Particle Tracking Model to Simulate Delta Hydrodynamics with Future Delta Infrastructure such as the Through Delta Facility**

Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

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	This could be a timely application of the PTM if past efforts showed great promise to decision-makers, However the proposal as presented leave to much to the imagination and is certainly not a rigorous research study.
-Good	
XPoor	

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

The stated goal is to provide insight to potential effects on Delta hydrodynamics from a Through Delta Facility. Objectives would be to apply Particle Tracking Models to toward questions posed by CalFed assessment teams. However no specific questions are given along with hypotheses to test the models.

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?

Conceptual model is the Particle Tracking Model(s) that have previously been applied to the Delta. This is not presented as a research project but rather a further application of PTM with the assumption that it would be used to address potential impacts of the TDF.

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 to simply get the PTM running assuming that any number of questions of interest could then be addressed. To much is left to good faith that the model is valid and will be accepted and used by decision-makers. That may be true but the proposal fails to document such.

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?

What is proposed is feasible but does not represent a rigorous research study.

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?

General statements that PMT model will be re-verified with general check of the5. 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? General statements that PMT model will be re-verified with general check of the results compared with other models. The proposal would leave the effectiveness of model output to be judged by agency personnel as to their understanding of the hydrodynamics related to their question.

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?

Product appears to be a calibrated Particle Tracking Model that would simulate the hydrodynamics within the delta with interpretation open ended (no linkage to models of fish movement or other important biological consequences are presented)

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?

Investigator has experience necessary to calibrate and apply the model as suggested.

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

Difficult to judge the cost effectiveness of this proposal. It is a lot of money for poorly documented expectations.

Miscellaneous comments:

None

Environmental Compliance:

Proposal Number: 81

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1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

Yes No

If no, please explain:

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

Yes No

If no, please explain:

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

Yes No

If yes, please explain:

Other Comments:

Budget:

Proposal Number: 81

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

Yes -No

If no, please explain:

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

Yes -No

If no, please explain:

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

Yes -No

If no, please explain:

4. Are appropriate project management costs clearly identified?

Yes -No

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 No

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

The amount requested is \$18 more than the budget summary.

6. Does the budget justification adequately explain major expenses?

Yes -No

If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes No

If yes, please explain:

Other Comments: