

**Panel Scientific and Technical Review**  
(Note: Review comments will be anonymous, but public.)

**Proposal number: 2001-F208      Short Proposal Title: Mercury Fate and Transport Model**

**1a) Are the objectives and hypotheses clearly stated?**

*Summary of Reviewers comments:*

All three reviewers agree the objectives and hypothesis are clearly stated.

*Panel Summary:*

The panel concurs with the external reviewers.

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

*Summary of Reviewers comments:*

The conceptual model adequately describes the basis for the work.

*Panel Summary:*

The text and associated figures do a good job of presenting the conceptual model for Hg fate and transport

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

*Summary of Reviewers comments:*

In general, the reviewers found the approach acceptable, but two of the three reviewers questioned specific details of the model that were not adequately described (e.g., time steps of the model, volume of spatial compartments, effects of Delta barriers and exports). In addition, one reviewer felt the proposal failed to show a working knowledge of Delta flow patterns.

*Panel Summary:*

It appears that the proposal intends to develop a new 1-D hydrodynamic model for the Delta, rather than use any of several existing 1-D models. The panel feels strongly that this approach would be a mistake that would require time and resources far beyond those which are provided for in the proposal. The hydrodynamic modeling task should take advantage of modeling efforts by other investigators.

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

*Summary of Reviewers comments:*

The proposed work is a research project.

***Panel Summary:***

The panel agrees the work is clearly a research project.

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

***Summary of Reviewers comments:***

All reviewers believe valuable information will be produced.

***Panel Summary:***

The panel believes that the proposed scope of linking models for Delta hydrodynamics, sediment transport, Hg speciation and Hg bioaccumulation is too aggressive. Moreover, there is concern about propagation of errors and whether a fish body burden (the ultimate end product) can be predicted with any degree of accuracy with the numerous potentials for error throughout the process.

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

***Summary of Reviewers comments:***

In general the reviewers were satisfied, but one believed calibration of the model with field data was inadequately described.

***Panel Summary:***

The panelists agree the proposal is unclear how field data will be used to validate the model and where these data will come from.

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

***Summary of Reviewers comments:***

There is no original data collection, but data management, analysis and reporting plans are adequate.

***Panel Summary:***

See comment under 2a.

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

***Summary of Reviewers comments:***

Two reviewers thought that the proposed modeling was feasible, although a third reviewer questioned whether it could be accomplished in the allotted 7 months.

***Panel Summary:***

The time and budget allotted are clearly inadequate to develop an original hydrodynamic model for the Delta. Without making better use of existing models, the proposed work is not technically feasible.

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

***Summary of Reviewers comments:***

The project participants were considered well qualified with the exception of one reviewer who thought the team could benefit by the inclusion of someone with expertise specifically in Delta hydrodynamics.

***Panel Summary:***

The expertise is good and the team is qualified.

**5)Other comments**

The external reviewers rated this proposal “EXCELENT”, “GOOD”, and “GOOD”.

**Overall Evaluation  
PANEL SUMMARY COMMENTS**

Reviewers of the CALFED Directed Action for Hg (99-B06) stated a need for a model to tie together the disparate project elements, and this project is offered by the investigator in response to this gap. It is not clear to this panel, however, that the proposed work meets this need. The proposed work is overly ambitious and probably impossible if a new hydrodynamic model is to be developed in 7 months. The panel agrees that a mercury transport model should be developed. However, the focus should be on the fate and transformation development and calibration aspects of the model, not on the transport aspect. There are established 1-D models for this purpose.

In addition, details of the mercury speciation modeling and bioaccumulation modeling are vague, and it is unclear if these will produce useful products. Finally, the panel notes that the proposal fails to show any evidence beyond the assurance of the lead investigator of a commitment to participate by the collaborating institution, participation of 3 scientists on the advisory panel, the offer of cost share from SRWP, collaboration by Regional Water Quality Control Boards, collaboration with other CALFED investigators, and a claimed offer of sample analysis by UC Davis. The panel is aware that at least some of this assistance has in fact been offered, but none is documented in the proposal. These are the primary reasons why the panel rating is much different than the reviewer ratings.

Summary Rating

- Excellent
- Very Good
- Good
- Fair
- Poor

Your Rating: FAIR