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

Proposal number: E-211 **Proposal Title: Feasibility Study of Ecosystem and Water Quality Benefits w/Restoration of Franks Tract, etc.**

Note: Only one individual review of this proposal was received. The summary of reviewer comments is that of the one review received.

1a) Are the objectives and hypotheses clearly stated?

Summary of Reviewers comments:
Yes, the objectives of the project - to test the feasibility and effects of a specific restoration technique - are clearly explained and justified

Panel Summary:
Objectives and hypotheses are well stated and justified. For example, the first objective clearly states that the "water quality benefits" (from title) are "improving water quality conditions for water supply". A strength is the discussion regarding pre-proposal consideration and evaluation of alternative hypotheses.

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

Summary of Reviewers comments:
Yes - the conceptual model is unusually well-developed and clearly depicted through diagrams and clearly explained and justified in text. It is based upon an accurate depiction and planned emulation of historic features of the Delta.

Panel Summary:
The diagramed ecological conceptual model (Exhibit 2; called a physical conceptual model in the proposal) is good. It depicts current and future restoration conditions. There should be more supporting descriptive/explanatory text for Exhibit 2. Exhibit 2 refers to and the section discusses only "physical conditions", although the diagram also clearly includes biological attributes. The effects of anthropogenic stressors on ecological attributes are well described in the Problem section. Referring to Exhibit 4 (restoration benefits) and some supporting text in the conceptual model section would be helpful.

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

Summary of Reviewers comments:
Yes - the approach is explained in adequate detail, and appears to have been methodically and carefully considered. It seems well-suited for meeting the objectives of this proposed project.

Panel Summary:
Generally, the approach is adequate and appropriate for meeting project objectives. However, the proposal does not provide sufficient evidence that an existing open water hydrodynamic model can be successfully adapted to marsh hydrodynamics. A strength is developing and evaluating "up to three alternative restoration concepts at each site". The panel encourages the applicant to develop and evaluate three concepts at each site. The well designed mercury study is also a strength. The "Gather Data and Define Baseline" section could have better described existing ecological conditions based in existing data.

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

Summary of Reviewers comments:
As a feasibility study, this project is correctly identified as primarily a research effort.

Panel Summary:
Yes; clearly identified as a feasibility study using a scientific/technical (modeling and monitoring) approach. The proposed study is well justified because it well evaluate multiple restoration strategies at multiple sites, and thus has the potential to generate considerable useful information regarding tidal marsh restoration on flooded Delta islands.

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

Summary of Reviewers comments:
Yes. This project is well designed to test some crucial hypotheses regarding the benefits of restoring ancestral features and processes to Delta wetland habitat**.** It should produce a wealth of useful information regarding the comparative benefits of this, versus alternate, strategies.

Panel Summary:

The proposal will likely generate substantial valuable information on tidal marsh restoration on flooded Delta islands and the potential ecological and human benefits. Again, a strength is the evaluation of multiple restoration strategies at each site.

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

Summary of Reviewers comments:
The reviewer stated that this question is not applicable because the monitoring and assessment plan is "not available for Phase I".

Panel Summary:
Generally, yes. The modeling assessment component appears appropriate, but it does not provide sufficient evidence that an existing open water hydrodynamic model can be successfully adapted to marsh hydrodynamics. The mercury monitoring and assessment is very well designed, well described, and scientifically sound. However, more detail is needed on the other ecological monitoring elements (e.g., invasive species, general wildlife reconnaissance) stated in "Gather Data and Define Baseline" section; these elements are just listed. This is particularly important because this project is a feasibility analysis.

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:
Yes, these aspects of the project are thoroughly described and appear entirely appropriate to the tasks at hand.

Panel Summary:
Data collection: See comments under 2a.
Data management and reporting: Yes.

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

Summary of Reviewers comments:
The authors present a strong case that all major components of the proposed work are in fact feasible.

Panel Summary:
Generally, yes. However, the applicant does not provide sufficient evidence that an existing open water hydrodynamic model can be successfully adapted to marsh hydrodynamics.

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

Summary of Reviewers comments:
The planning/engineering "leads" appear to have sufficient expertise. However, a notable "gap" in project staffing appears to be the lack of a senior ecosystem or community ecologist who might best address a broad array of essential project issues involving ecological interactions, community dynamics, etc. Neither "restoration ecologists" nor fishery biologists generally have the appropriate specialized training and/or experience for such essential tasks, which involve statistical evaluation, integration and interpretation of a broad range of biological survey data involving multi-species assemblages and time-series comparisons of such.

Panel Summary:
Yes; particularly the engineering, project management, and ecotoxicology disciplines. The science advisory group should include at least one marsh/wetland ecologist with a broad ecosystem perspective.

5)Other comments

None from reviewer and panel.

INDIVIDUAL REVIEWER OVERALL EVALUATION SUMMARY RATING AND COMMENTS:

VERY GOOD

A possibly very productive project that is slightly lacking only in that it seems a bit short on devotion of resources to primary biological objective - definitively assessing the linkage of the restoration actions with ecological/ biological benefits to animal assemblages.

Overall Evaluation
PANEL SUMMARY COMMENTS

This proposal has the potential to generate considerable useful information on tidal marsh restoration on flooded Delta islands and the potential ecological and human benefits. It is well designed. Proposal strengths include developing and evaluating "up to three alternative restoration concepts at each site", the proposed modeling to evaluate the alternative restoration strategies, and the evaluation of a diversity of potential ecological and human benefits. Proposal
weaknesses are insufficient evidence that an existing open water hydrodynamic model can be successfully adapted to marsh hydrodynamics and insufficient description of most ecological monitoring elements.

OVERALL EVALUATION SUMMARY RATING: VERY GOOD