Proposal Reviews

#61: CALIFORNIA CLAPPER RAIL - DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM-BASED HABITAT SUITABILITY MODEL TO GUIDE RESTORATION EFFORTS IN THE NORTH BAY REGION

Environmental Science Associates

Initial Selection Panel Review	
Research and Restoration Technical Panel Review	
Bay Regional Review	
External Scientific Review	#1 #2 #3
Environmental Compliance	
Budget	

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP
Initial Selection Panel Review

Proposal Number: 61

Applicant Organization: Environmental Science Associates

Proposal Title: CALIFORNIA CLAPPER RAIL - DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM-BASED HABITAT SUITABILITY MODEL TO GUIDE RESTORATION EFFORTS IN THE NORTH BAY REGION

Please provide an overall evaluation rating.

Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

Consider as Directed Action in Annual Workplan (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)
Not Recommended (a proposal not currently recommended for funding-after revision may be considered in the future)

Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

Fund	
As Is	**-**
In Part	**-**
With Conditions	**-**
Consider as Directed Action	**-**
Not Recommended	**X**

Amount: **$0**

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

none

Provide a brief explanation of your rating:

This proposal received good reviews from the Technical Panel and external reviewers. These reviewers acknowleged, however, that pertinent physical variables should be identified and surveyed, and that proposed performance measures were not adequate. The Bay Regional Panel gave the proposal a "low" rating because the applicants did not acknowlege and incorporate predation (a prime determinant of clapper rail population viability) into the habitat suitability model and, given the existing body of knowlege on clapper rail habitat requirements, it was not apparent how this proposal would assist restoration planning in the North Bay.

Based upon the above criticism, the Selection Panel does not recommend funding of this proposal. The Panel notes that the applicant submitted a similar proposal for the salt marsh harvest mouse. The Panel recommends that any future proposal submission address the review comments and integrate the Salt Marsh Harvest Mouse, California Clapper Rail, and possibly other appropriate species into one experimental approach. It is imperative that future proposals better describe available data and articulate how data will be used to develop a predictive model.

Research and Restoration Technical Panel Review:

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

Proposal Number: 61

Applicant Organization: Environmental Science Associates

Proposal Title: CALIFORNIA CLAPPER RAIL - DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM-BASED HABITAT SUITABILITY MODEL TO GUIDE RESTORATION EFFORTS IN THE NORTH BAY REGION

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	**The panel considered this a technically strong proposal. The project will produce a habitat suitability model that is potentially very useful for the management of CCRA. There were a sufficient number of minor deficiencies that caused the panel to rank the proposal "Above Average" rather than "Superior". Two reviewers ranked the proposal "Excellent" and one reviewer ranked it "Good".** **The regional review panel gave this proposal a "LOW" ranking. Unfortunately, the regional panel did not provide any citations to substantiate their criticisms. A cursory literature search conducted by the technical panel found a recent reference on the effects of red fox predation on CCRA in San Francisco Bay (Harding et al. 2001, Conservation Biology, vol. 15(4)), confirming the regional panel's comment that predation can have significant effects on the abundance of CCRA. In theory, this could limit the applicant's ability to develop useful suitability models, but there was no data in the paper, or provided by the regional review panel, to support this assertion. In addition, the model of Foin et al. (1991, Biological Conservation 58(2)) for light-footed clapper rail (cited by the applicant) demonstrates that it may be possible to develop suitability models for CCRA that are useful to managers. Based on this information, the rating of the technical panel was not influenced by the low rating given by the regional panel.**
XAbove average	
-Adequate	
-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 external reviewers agreed that the goals, objectives and hypotheses were clearly laid out and consistent. A HSI model could be used to refine restoration actions and select areas for re-introduction of CCRA.

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?

   All external reviewers felt the approach was well designed. Two reviewers had questions regarding the similarity between the DoI study cited in the proposal and the proposed work. The reviewers cautioned that the results from this work should be reviewed to avoid unnecessary duplication. One external reviewer had a number of suggestions to improve model development (kernel density estimation, better use of spatial variables from GIS, improved methods for model evaluation and assessing uncertainty).

   All reviewers felt the project was by and large, feasible although there is no guarantee that the HSI relationships will be useful for management if their predictive abilities are weak. Two reviewers had questions regarding the input variables for the models and how well they would be represented by the GIS data (if at all), possibly reducing the reliability of the predictions when applied over larger spatial scales. Two reviewers felt that the proposal was weak in its description of the performance measures. For example, no detail was provided on how alternate models would be evaluated. No problems with the capabilities of the project team.

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 models that are developed could be very useful for focusing restoration activities, and thereby contribute to species recoveries and be a useful tool for decision-makers. The utility of the models will depend on their predictive power, which is difficult to assess until the project has been completed.

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

   Yes

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?

   The proposal was ranked LOW by the regional panel, whose comments indicated a strong background in CCRA population dynamics. Unfortunately, their statements were not substantiated with references. The regional reviewers felt the proposed model would have doubtful long-term predictive power and would therefore be of no use. Their rationale was that: * Habitat relationships in the fluctuating brackish marshes are exceedingly variable

over climatic cycles and that data collected over a period of less than a decade would not generate meaningful and stable relationships (no references or data was provided to support this statement). * Strong predatory-prey interaction (raptors) that is independent of habitat structure is the key limiting factor for CCRA and likely overrides any habitat relationships (previous studies are mentioned, but no references are provided). Two other negative and significant issues were presented: 1. The limited spatial scale of monitoring is not comparable with the scope of previous efforts and would therefore not contribute to the long term database of CCRA abundance/distribution. 2. The regional panel did not agree with the proponent that recovery efforts for CCRA are limited by the lack of a GIS habitat suitability model as the basic relationships between salinity, sediment, and vegetation for CCRA habitat requirements are sufficiently understood for planning purposes.

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?

   None

Miscellaneous comments:

Major conflict between recommendations of external reviewers and regional panel. See summary rating discussion.

Bay Regional Review:

Proposal Number: 61

Applicant Organization: Environmental Science Associates

Proposal Title: CALIFORNIA CLAPPER RAIL - DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM-BASED HABITAT SUITABILITY MODEL TO GUIDE RESTORATION EFFORTS IN THE NORTH BAY REGION

Overall Ranking: **X**Low **-**Medium **-**High

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

The proposal's scope of work is not appropriate for regional conservation planning needs. A comprehensive regional survey of clapper rails, and distribution and abundance of terrestrial predators (and raptor activity), with basic habitat quality information, would be more relevant than a habitat model of doubtful long-term predictive power.

1. Is the project feasible based on local constraints?

   -Yes **X**No

   How?

   The habitat-distribution relationships proposed for study in the fluctuating brackish tidal marshes of the north bay are exceedingly variable over climate cycles. The data collected within periods less than a decade are unlikely to generate stable, meaningful long-term interpretations. Long-term recovery planning must depend on long-term habitat suitability. Moreover, strong predator-rail interactions which may be independent of structural habitat suitability are likely to have overriding effects on distribution and abundance of clapper rails in San Pablo Bay, as indicated by previous studies.

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

   -Yes **X**No

   How?

   While contemporary information on the distribution and abundance of rails would be useful, the proposal includes surveys over only discrete study sites, and fails to replicate or match the comparable scope of previous studies, which diminishes the meaning and utility of the study. The panel does not agree that recovery efforts for the clapper rail in this region are limited by a GIS-based habitat model, since the basic relationships between salinity gradients, sediment availability for growth of restored marshes, vegetation/salinity correlations, and clapper rail distributions are already sufficiently understood for planning purposes, and large-scale restoration over most of the souther Napa-Sonoma marshes is already in progress. The model, therefore, would be either redundant or moot in most of its potential applications for marsh restoration planning.

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

   -Yes **X**No

   How?

   It fails to adequately incorporate study of the principal constraint on current distribution of clapper rail abundance within existing tidal marshes, which is predation. It fails to identify relationships to existing restoration planning and regional studies.

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

   -Yes **X**No

   How?

   It fails to identify relationships to existing restoration planning and regional studies.

Other Comments:

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **61**

Applicant Organization: **Environmental Science Associates**

Proposal Title: **CALIFORNIA CLAPPER RAIL - DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM-BASED HABITAT SUITABILITY MODEL TO GUIDE RESTORATION EFFORTS IN THE NORTH BAY REGION**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-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:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
XExcellent	**Overall this is a sound idea, the project team is well qualified, and the budget is reasonable. Although the data analysis approaches could be improved, this could probably be done within the current scope of work. I therefore did not penalize the proponents on this issue.**
-Good	
-Poor	

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

   Goals and objectives clearly stated and are consistent with the general hypothesis that significant landscape level habitat relationships for CCRA can be developed.

2. **<u>Justification.</u>** 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 proponents do an excellent job summarizing relevant research and modeling activities and placing the proposed project in the context of this work.

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?

   Overall, the approach is quite well designed and will likely increase the understanding of CCRA habitat requirements/relationships. As described, I do not see the project generating any novel approaches or methodologies, the proposed approaches are pretty standard. However the information will be useful to decision-makers in terms of selecting and designing restoration sites. I offer the following suggestions/comments on particular aspects of the approach.

   · My main concern is that the suitability curves are being developed using field data, but predictions will be made using GIS data, presumably based on air photo interpretation. This may lead to poor predictive power. Presumably the vegetation sampling will be used to ground-truth the classification of vegetation polygons, but this is not specified. · Statistical Approach to Develop suitability curves. There may be more appropriate statistical means to evaluate significant habitat variables. The functional forms of habitat variables are certainly not simple, and probably not linear. To paraphrase Rice (1993); Although ecological theories can yield predictions of how animals should use habitats, theory predicts in only general ways the shape of specific abundance-habitat functions. When abundance and habitat data are plotted, the relationships commonly show combinations of thresholds, floor and ceiling effects, asymmetric ascending and descending limbs, marked skewness or kurtosis, differing variability in abundance at different positions along a habitat gradient and other diverse statistical problems. Curvilinear models may fit the data better than linear models, but they do not necessarily fit the data well. Rice (1993) suggests the use of multivariate kernel density estimation as an improved means of addressing these issues (see Rice, J.C. 1993. Forecasting abundance from habitat measures using nonparametric density estimation methods. Can. J. Fish. Aquat. Sci. 50: 1690-1698). · GIS Model. Moving to ArcGIS 8.1 would probably provide a better development environment for the suitability model (using Visual Basic rather than AML). This will reduce the likelihood of programming errors, facilitate improvements in the future, and allow for more complex analyses (see bootstrap description below). · Use of GIS data in Suitability Model. GIS-based variables could be more effectively incorporated into suitability curve development. For example, you could use ArcGrid to compute distance statistics from one grid point to an attribute of particular interest (for example, the distance between a cell and closest dyke, which represents the risk of predation at that cell). Such GIS-based metrics should be analyzed along with the basic habitat information to develop suitability models. As proposed the GIS is really only being used as a display/implementation environment, to organize data, and to assign very basic attributes (e.g. cover) to particular cells. · Evaluate Model. This component is weak and fuzzy. What statistical test (e.g. contingency tables) will be used to evaluate the models. If the models don't fit well and are reparameterized, will the proponents retest them using a new dataset independent of the one used to reparameterize? The appropriate procedure here is to use a bootstrapping approach, where different random samples of the full dataset are used to test and evaluate the models. Likelihood and information based approaches (e.g. Akieke information criteria) should be used to evaluate the reliability of the models (e.g. the trade-off between improving r2 vs. adding more parameters).

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?

Approach is fairly well documented and technically feasible. The likehood of success is probably high. It may be that the habitat relationships are fairly weak and therefore of limited use for decision-making but it is worth a try, especially since past efforts documented by the proponents have succeeded to some extent.

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?

   Little more detail on how the models will be evaluated would have been helpful, but overall the PM's are well described and appropriate for evaluating the projects objectives.

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?

   Yes, products of value are likely. The ultimate utility of the suitability models is difficult to predict at this stage.

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?

   Project team appears qualified. Based on the approach described by the proponents, the project team could benefit from someone with a more quantitative/analytical background.

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

   Budget is reasonable.

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **61**

Applicant Organization: **Environmental Science Associates**

Proposal Title: **CALIFORNIA CLAPPER RAIL - DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM-BASED HABITAT SUITABILITY MODEL TO GUIDE RESTORATION EFFORTS IN THE NORTH BAY REGION**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-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	**I thought this was a good project. There could have been more detail regarding monitoring/performance measures. It would be nice to get a report from the other clapper rail habitat modeling study they cited to see if much overlap exists.**
XGood	
-Poor	

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

   The goals and objectives are well stated and hypotheses are clear. It directly addresses a CALFED species. It is timely. It will be valuable to have this model identify gaps in habitat distribution.

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 study is justified but I wonder how much overlap there is between the proposed work and the models that have already been developed that they cite.

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?

   It is a well-designed approach. I like the fact that they will test the model in other regions.

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?

   It is feasible and has a high likelihood of success. The scale is consistent with the objectives.

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?

   Performance measures are adequately addressed.

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 model will be valuable to determine areas of importance to the clapper rail.

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 team appears to be well qualified.

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

   It seems reasonable.

Miscellaneous comments:

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: **61**

Applicant Organization: **Environmental Science Associates**

Proposal Title: **CALIFORNIA CLAPPER RAIL - DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM-BASED HABITAT SUITABILITY MODEL TO GUIDE RESTORATION EFFORTS IN THE NORTH BAY REGION**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-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:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
XExcellent	**I believe in the protection and enhancement of the CCRA. Provided that the issues I have touched on above can be resolved, I would wholeheartedly support the funding of this project.**
-Good	
-Poor	

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

   The authors have done a fine job of laying out the goals, objectives, and hypotheses of this study. Due to the endangered status of the California Clapper Rail (CCRA), such a study is both timely and important. Information proposed in this work would help to understand the habitat needs of the CCRA, and also provide guidelines for future restoration efforts.

2. **<u>Justification.</u>** 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?

This study is important, both to the restoration of the CCRA, and to the growing relationship between Geographic Information Systems and restoration ecology. The justification is well laid out, and appears to fall well within the overall scope of CalFed.

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?

   This is a well-designed study that has the potential to be of great value to the CCRA. One caveat exists with this study: the authors mention an unpublished, on-going study involving CCRA habitat modeling and related GIS applications by the U.S. Department of the Interior (USDI). While the results of the USDI work are not available at this time, it does resemble the efforts described in this proposal. I would caution that the USDI work be further reviewed to make sure that this proposed study does not replicate the USDI project.

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?

   By and large, I can answer yes to all of the above questions. However, one area needs further attention. The authors propose to collect physical variables potentially related to CCRA presence or absence. The authors have not clearly determined, a priori, which variables they will sample for. Instead, they list "...variables, such as..." and "...variables may include...". I would like to see an exact predetermined list of the variables that they intend to sample for, based on known and projected relationships to the CCRA. This is also important for the GIS application, since any variables selected for the HSI model must also be supported by GIS data. If the variable is not already supported in existing GIS data sets, it will need to be digitized into the GIS, and the authors have made no provision for that possibility. We then have the situation where the HSI model may be successful, but the GIS component fails because the associated GIS data required to apply the HSI model across the landscape does not exist. For example, if redox potential continuitity proves to be a useful variable in the HSI model, does it exist in GIS data layers in sufficient detail and quality over a large enough geographic area to prove useful for identifying potential CCRA habitat?

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?

   This is a weak section of the proposal. The authors "...will monitor performance throughout the projects by monitoring the achievement of specific milestones." The milestones are not described. In my opinion, this does not represent an appropriate performance measure. Additional detail would be useful here to assure project success. On a positive note, the authors intend to consult with other researchers and government agencies to help ensure that the project data and methodologies are staying current.

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?

This project is likely to produce products that are absolutely valuable to the existence of the CCRA as a species. The ability to identify potential CCRA habitat through the HSI model/GIS combination proposed here would be of great value to resource managers.

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?

   From a biology standpoint, the applicants are well qualified. The six members have the background and expertise to understand the CCRA, its habitat needs, and how the two may be modeled. From a GIS standpoint, only one team member appears to have any GIS experience. While this is not a negative, relying on just one person for a large component of the project (the GIS portion) does increase project risk.

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

   Yes, the budget is quite reasonable, given the amount of time and effort described in it, along with the potential benefit to the CCRA.

Miscellaneous comments:

Environmental Compliance:

Proposal Number: 61

Applicant Organization: Environmental Science Associates

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

   -Yes **X**No

   If no, please explain:

   Yes and No:

   Yes: As long as the DFG MOU and FWS permit #TE86728-1 (and corresponding NEPA documentation) would apply to activities under this proposal. No State take of California Clapper Rail.

   No:

   BCDC would need notifying.

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

   XYes **-**No

   If no, please explain:

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

   -Yes **X**No

   If yes, please explain:

Other Comments:

Budget:

Proposal Number: 61

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

   XYes **-**No

   If no, please explain:

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

   XYes **-**No

   If no, please explain:

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

   XYes **-**No

   If no, please explain:

4. Are appropriate project management costs clearly identified?

   XYes **-**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?

   XYes **-**No

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

6. Does the budget justification adequately explain major expenses?

   XYes **-**No

If no, please explain:

7. Are there other budget issues that warrant consideration?

   -Yes **X**No

   If yes, please explain:

Other Comments: