Proposal Reviews

#108: San Joaquin River Water Quality Improvement Project - Phase II Implementation

Panoche Drainage District

Initial Selection Panel Review

Research and Restoration Technical Panel Review

San Joaquin Regional Review

#1

External Scientific Review

#2 #3

#4

Environmental Compliance

Budget

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP Initial Selection Panel Review

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

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:

The Selection Panel recognizes the importance of reducing selenium loading to the San Joaquin River and achieving a salt balance in the San Joaquin Valley. This project could provide incremental progress towards those goals. However, the Panel concurs with the Technical Panel review that the proposal did not demonstrate sufficient cost-benefit towards ERP goals and appropriate cost-share by Panoche Drainage District. There also was not a soil and groundwater monitoring component to demonstrate long term sustainability of the approach.

The Selection Panel recommends close coordination of other CALFED programs (Water Use Efficiency, Drinking Water Quality, and ERP) with the San Joaquin Valley Drainage Implementation Program to acheive a comprehensive solution to this problem.

Research and Restoration Technical Panel Review:

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

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

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	
-Above average	The panel rated the proposal as adequate. However, the proposal needed to address the issue of adequate monitoring and project feasibility for the long term. Obtaining cost sharing for the planting phase would be desirable. The proposal needed to address the issue of salt balance for the treatment area. Are the salts staying in the soil profile and/or leaching to the groundwater? This
XAdequate	
-Not recommended	needed to be addressed in the proposal.

1. <u>Goals and Justification.</u> 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?

Goal is clearly stated to reduce discharges of drainage to the San Joaquin River by reuse of drainage water on salt tolerant crops such as alfalfa, pasture and safflower. Justification is provided and supported by USFWS, however question whether the service is aware that the project is a water diversion project. Some question on the value of water diversion. Concern about the sustainability in the long-term, must have it linked to water treatment rather than solely reducing the amount of water that needs treatment. The proposal doesnt address the ultimate impact of the salts loading to the soil profile. However, the need for this project is high if drainage water treatment is to be implemented on a large scale. For this agricultural system, both water treatment and planting of salt tolerant crops is probably necessary.

2. <u>Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).</u> 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?

Not clear whether monitoring is sufficient to address issues of long term sustainability of the approach (by several reviewers). Sampling should include measurements of soil salinity and shallow groundwater. Variation in the tile system design (depth and spacing) should be considered to assess effects on salt management and drain water quality and quantity.

Adequate performance measures identified. Another reviewer states that measures dont have sufficient detail, but may not be necessary.

Good track record of team.

3. <u>Outcomes and Products.</u> 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?

Reduced drainage discharges to the San Joaquin River are likely for this project. More documentation is needed such as a scientific report.

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

Question whether funding for monitoring data collection, analysis, and reporting is included in the budget. Some question about the costs being high by several reviewers. Maybe some cost sharing for the planting should be required.

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 is of value to improve the deltas water quality and to restore habitat. Noted that the project is coordinated by federal, state and local agencies.

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

Budget has a question about the grand total being \$1,838,400 instead of \$1,761,100.

Compliance has question about project impacting levees and whether the Reclamation board approval is needed.

No regulatory issues.

Miscellaneous comments:

None

San Joaquin Regional Review:

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

Overall Ranking: -Low -Medium XHigh

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

One of the most significant issues in the quality of delta waters are selenium loads. This project continues previous work initiated and will effectively move our knowledge of selenium and salinity management forward giving this project a high ranking.

1. Is the project feasible based on local constraints?

XYes -No

How?

This project is currently in progress.

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

XYes -No

How?

This project is a direct effort to manage and improve the delta's water quality so that habitat restoration can be achieved.

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

XYes -No

How?

It is a key component for improving water quality.

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

XYes -No

How?

This project is a coordinated effort by federal, state, and local agencies and is coordinated	at
all levels.	

Other Comments:

None

Research and Restoration External Scientific Review Form

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

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	As the proposal stands the ultimate goals of the proposed project are not fully enumerated by linking it to treatment or disposal. However, the project is critical if treatment options are to be viable. The proposal has deficiencies in making these
XGood	links but it is a very useful and necessary project in achieving the ultimate goals of providing sustainable solutions to agriculture while achieving the goals of the CALFED ERP. The overall ranking for the proposal is 'Good' based on deficiencies in the proposal enumerated above. However, the need for the project is very high if drainage water treatment is to be implemented on a large scale. If the project is to be funded, at a minimun the applicant should be required to commit to develop an end point for the salts and other constituents.
-Poor	

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

The hypothesis is clearly stated and proven to be effective in reducing drainage volumes. The proposal is to use drainage water from throughout the district to irrigate salt tolerant crops to reduce drainage volumes entering the San Joaquin River. However, the proposal does not explain what the ultimate end point of the salts and contaminants in the drainage water will be. According to the law of mass balance salts will be stored in the soil profile until a new

equilibrium is reached and leaching will have to occur to maintain productivity. For the system to be sustainable eventually the drainage water from the project will have a higher concentration than the incoming drainage water used for irrigation but will have the same total mass of contaminants resulting in no net reduction of contaminants entering the River. For this project to be fully sustanable it must be linked to treatment of the drainage water for isolation of salts. This project would reduce the volume of water that needs treatment. Panoche Drainage District has submitted two other proposals for funding that seek funds to implement treatment technologies that would be the likely follow-up to this procedure but that connection is never made making the goals and objectives of the project unclear. The project, however, would be essential in implementing full scale treatment of the districts drainage water. Volume reduction coupled with treatment would significantly reduce constituents of concern and improve the ecosystem of the River and the Bay Delta.

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 scientifically justified and has been shown to be a viable management option for reducing drainage volumes from irrigated agriculture. The justification for the project is to remove 80,000 lbs. of boron, 1,100 lbs. of selenium, and 35,000 tons of salt from drainage water entering the San Joaquin River. This goal is attainable but not sustainable unless linked to a treatment or disposal option for the salts that will eventually be found in the drainage water (see above). The request to install subsurface drainage would suggest that collection and treatment or disposal is part of the proposal but no clear connection to the final end point of the contaminants is made.

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 to reduce drainage water volume and concentrate salts is well designed and success is likely since the same methodology has been shown to be feasible in other situations in other parts of the San Joaquin Valley. The results will not add significantly to the base of knowledge since it is a known management scheme but coupled with appropriate treatment or disposal the system could be found to be a viable option for allowing agricultural drainage from the western side of the San Joaquin Valley to be reused. Specifically the treated water could be traded or used directly to augment flows in the San Joaquin River during critical flow periods, thus, improving the ecosystem of the River and Delta.

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?

The project is feasible and the likelihood of success is high (see comments to approach)

5. <u>Project-Specific Performance Measures.</u> 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?

A detailed plan for performance measures is not included but in the case of this project may not be necessary. The only measure of success is if the project reduces the volume of drainage water that needs treatment or disposal. A reduction will have to occur due to transpiration of the crops being grown. In addition it stands to reason that the inflow of drainage water and the outflow of concentrated drainage water will be measured but no specifics are given.

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?

As the proposal is written the only beneficial product is the reduced volume of drainage water. However, the inference of linking this project to treatment would decrease the costs associated with treatment which would result in the production of high quality new water available for reuse.

7. <u>Capabilities.</u> 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 applicant is one of the entities that is subject to waste discharge requirements and have incentive to reduce ag drainage. They have been active and progressive in developing drainage management options. Because the district doesnt have expert staff, they rely on consultants. CALFED close supervision and oversight of project is recommended.

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

The costs of consulting services appear to be reasonable for the project. The cost of tile drain installation (\$850/ac) depends on the design and may be slightly overestimated. The cost of planting alfalfa (\$325/ac) is slightly above average, perhaps some cost share for planting can be required.

Miscellaneous comments:

Research and Restoration External Scientific Review Form

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

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	My uncertainty in the validity of this project, coupled with a deficient overall description to address the required specs of the evaluation criteria caused me to give only a good.
XGood	
-Poor	

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

Rating: Good. The primary goal is to divert drain water away from the San Joaquin River and thereby reducing input of selenium, boron, and salt. While I agree with the premise of the project, i.e., to reduce pollutant loading to the river, I question the value of water diversion. This essentially reduces the drainage area of the San Joaquin River by about 1500 acres.

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?

Rating: Good. The applicants justify this project by claiming it is an expansion of an existing drainage management project. The letter by the USFWS supports this project. However, the letter does not indicate that the USFWS was aware that this is a water diversion project.

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?

Rating: Good. The approach is based on similar projects. However, the detail is brief.

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?

Rating: Very Good. The project is likely very feasible. The district is obviously successful at these projects.

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?

Rating: Good. Success is to be measured according to the amount of subsurface drain water that is diverted to the project. However, some WQ and/or biological monitoring of the San Joaquin River should be done to ensure that ecosystem health is being restored.

6. <u>Products.</u> 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?

Rating: Good. I believe that more than just the documentation of the drain water removed is necessary here. The applicants are hesitant to commit to a scientific report.

7. <u>Capabilities.</u> 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?

Rating: Very Good. Very little is given on the capabilities, but I suspect the applicants are very qualified for this project.

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

Rating: Good. The costs seem very high for this project. The detail seems to match the budget.

Miscellaneous comments:

I have misgivings about the wholesale diversion of drain water in the catchment as the most viable BMP. If this project is an expansion of an existing one, the cumulative effect of a decrease in catchment size of the San Joaquin must be dramatic.

Research and Restoration External Scientific Review Form

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

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):

I have collaborated and [agency] co-funded various drainage research, pilot, and implementatin projects with applicants.

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	Project would be improved with addition of components to address long term sustainability such as designing tile system for sequential reuse and collection of soil and groundwater data.
XGood	
-Poor	

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

Yes. Stated goal is to reduce discharges of drainage to the San Joaquin River. Concept of reuse of drainage water on salt tolerant crops is both timely and important.

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?

Project is justified relative to existing knowledge and near term goal of reducing drainage discharges. Installation of tile system is justified and scale is appropriate. Reuse of the tile water cannot be continued indefinitely and eventually a sequential system or other measure will be required. The proposal does not address this.

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 well designed and appropriate for meeting the stated objective of near term reduction of discharges to the San Joaquin River. The proposal refers to monitoring programs of related projects. It is not clear that monitoring is sufficient to address issues of long term sustainability of the approach. At a minimum, soil salinity and shallow groundwater should be measured. Variation in tile system design (depth and spacing) should be considered to assess effects on salt management and drainflow quantity and quality.

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?

The approach is technically feasible for the timeframe of the project and sometime beyond. Additional actions will be required to develop a long term sustainable system. The project has a high likelihood of successfully accomlishing its stated objective of reduction of discharges to the San Joaquin River.

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?

Quantification of performance measures--amount of subsurface drainage water and associated constituent loads diverted and not discharged to the San Joaquin River--is 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?

Reduced drainage discharges to the San Joaquin River are likely from the project. Interpretive outcomes are not likely from the project as presented.

7. <u>Capabilities.</u> 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?

Applicants have proactively pursued progressive and innovative drainage management and have a good track record. They are capable of accomplishing the project.

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

It is not clear that funding for monitoring data collection, analysis, and reporting is included in the budget.

Miscellaneous comments:

Research and Restoration External Scientific Review Form

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

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	Good to excellent Projects of both Se treatment and land use patterns changes are needed. This project conducts the latter. Good monitoring program with ar existing Grassland Bypass Project QAPP in place. Good team as a whole.
XGood	
-Poor	

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

The project goals, objectives and hypotheses are clearly stated. The goal is to divert 4,500 acre feet of drain water from the SJR preventing pounds of Se, boron and salt from being discharged.

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?

This project is already received funding from Prop 13 to purchase 4,000 acres of farmland.

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 study clearly outlines the tasks to be conducted over the 3 year period.

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?

The monitoring program includes both flow and quality of the parameters to be measured and will follow the Grassland Bypass Project OAPP.

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?

Measures are clear, less drainage water will be generated, therefore, less costs needed to treat Se and salt from this land.

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?

Good amount of Se, boron and salt will be removed from the system. However, how did they get at the estimates that are specified in the proposal?

7. <u>Capabilities.</u> 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 has adequate experience as a collective whole.

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

Good cost sharing by the district is provided and letter of support from USFWS is provided.

Miscellaneous comments:

Environmental Compliance:

Budget:

Proposal Number: 108

Applicant Organization: Panoche Drainage District

Proposal Title: San Joaquin River Water Quality Improvement Project - Phase II Implementation

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

XYes -No

If no, please explain:

For all 3 years

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?

-Yes XNo

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

17.a. = \$1,761,100.00

 $Grand\ Total = \$1,838,400.00$

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 XNo
If yes, please explain:
Other Comments: