

**Riparian Sanctuary (Phase II) – Bringing  
Agricultural and Ecological Interests  
Together for Pumping Plant Protection and  
Riparian Restoration (Sacramento River Mile  
178) – Design Development and  
Environmental Compliance**

**Daniel S Efseaff**

# Initial Selection Panel Review

0054

Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological Interests Together for Pumping Plant Protection and Riparian Restoration (Sacramento River Mile 178) – Design Development and Environmental Compliance

River Partners

*Applicant amount requested:* \$660,665

*Fund This Amount:* \$0

This proposal would fund Phase II of an effort to study potential alternatives to protect the Princeton, Cordura, Glenn, and Provident Irrigations District's pumping plant and fish screen facility and develop management options for the Riparian Sanctuary, a component of the Sacramento Wildlife Refuge. This project takes an innovative approach and follows well with previously funded work. Additionally, it is recognized that this project is a high priority for the region. However, the finding is that the proposal is not responsive to the objectives of the current PSP. The proponents are encouraged to seek other funding for this project including submittal to future PSPs.

**Do Not Fund**

# Technical Panel Review

**Proposal Name:** Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological Interests Together for Pumping Plant Protection and Riparian Restoration (Sacramento River Mile 178) – Design Development and Environmental Compliance

**Applicant Organization:** River Partners

**Amount Requested:** \$660,665

Panel Rating:

**Poor – Serious deficiencies.**

## Panel Summary

The Panel understood the need to protect the pumping station structure, but considered this primarily an engineering project inconsistent with the specific objectives of the PSP. The ecological components appear tailored primarily for mitigation. Those components also lacked detail on methods, measured outcomes, and monitoring. The panelists further noted that the complete suite of alternatives to protect the pumping station without major channel re-engineering appear to not have been considered. Some of these (e.g. bend-away weir) could be implemented at a lower cost. Panel members noted that the scope of the Environmental Review may be underestimated and the permitting requirements and project timeframe appeared unrealistic.

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*Proposal Name:* Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological Interests Together for Pumping Plant Protection and Riparian Restoration (Sacramento River Mile 178) – Design Development and Environmental Compliance

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## Goals

Rating	
good	<p><b>Comments</b> The problem statement describes the previous phase, which explored measures, through a collaborative process, to protect the pumping plant and manage the Riparian Sanctuary. The primary issue is stated as risk to the pumping plant resulting from changes in river morphology. The Riparian Sanctuary is included in terms of the possible need to revet riverbanks and the side context of non-native vegetation. The management issues relating to these two topics are presented as the problem. The project proposes to evaluate alternatives identified in Phase I to address the issue (pumping plant protection) and continue the collaborative process to solve the management problem. However, the proposal does not provide an inventory of alternatives identified in Phase I, only two examples. The main goal is stated as the intent to satisfy environmental compliance, obtain permits and design a solution that satisfies multiple management objectives. The proposal does not make clear how ecosystem and ERP goals are achieved in any specific manner. The agricultural goal appears to be of main importance, that is to protect the pumping plant infrastructure. It is unclear how this will be achieved in a manner that goes beyond basic mitigation</p>

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of environmental impacts, except to the extent suggested by the examples. No specific objectives are listed. The main elements of the project, collaborative planning, alternatives analysis and site assessment, NEPA preparation, and permitting, may in some way serve to satisfy the ERP goals and objectives, but the proposal does not define if or how this will occur. Integration of agricultural and ecological activities is implied by the collaborative consultation process but not explicitly explained. The NEPA process and permitting are necessary under federal and state jurisdictions, with strict respective mitigation requirements. Performing these tasks under this project does not guarantee that CALFED objectives are achieved.

### **Justification And Conceptual Model**

<b>Rating</b>	good
Comments	A clear conceptual model of the collaborative process is presented. The process includes consultation and investigations and alternatives analysis, resulting in measures for future implementation. However, linkages between the agricultural system (pumping plant protection) and ecosystems (riverine aquatic and riparian values) is not explicit, except to the extent that the one option of protecting the Riparian Sanctuary with rock and removing rock upstream, as an example of one of the alternatives developed in Phase I, will add value to the Riparian Sanctuary and create an oxbow. Integrity of flow direction at the fish screen is also offered as part of the explanation of the need for action. Other alternatives are not presented in the proposal. Also, the issue of tradeoffs is not explained between existing riverine aquatic and riparian values present in the meandering river channel and the values lost resulting from bank revetment, meander cutoff, and permanent channelization alternatives intended to protect the Pumping Plant. For example, the loss of bar formation features may affect colonization by cottonwood, and

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meander cutoffs will result in the loss of potentially important aquatic macro-habitat features important to fish. There is no formal hypothesis to test. Successful accomplishment of the project tasks is presented as the hypothesis set, which may be appropriate given the proposal is primarily a vehicle to select a preferred alternative for a project with a predetermined need and to provide a permitting and design service for the agricultural interests. The justification for the proposal is based on the achievements of the Phase I project, the need for action, and the need to continue a collaborative effort among stakeholders, to develop alternatives more extensively, and to serve as the NEPA contractor and permit coordinator in preparation for implementation.

### Approach

Rating	good
Comments	The approach is explained conceptually, with general components for each task, but does not provide detailed description of tasks. Consultation is explained in good detail. The site data tasks are only very generally outlined. Without knowing the extent and nature of previous topographic and bathymetric surveys, and not knowing how the mapping will be used for hydraulic analysis, meander evaluation, and design purposes, validity of the proposed site data components cannot be determined. It appears, however from the narrow focus of the mapping, geotechnical and biological subtasks that the alternative for protection of the pumping plant is predetermined. This is not clear in the narrative, except to the extent that one of the Phase I alternatives is presented as an example. Because subtasks 3.1-3.3, as well as Task 4, appear to be focused on a single engineered design solution, that is to induce

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	a meander cutoff by encouraging the natural meander to concertina, very little appears to apply to adding to the information base of ecosystem processes or the potential for ecosystem restoration. The information will be useful for designing bank revetment structures and helping to predict the outcome of removing bank revetment, respectively, at this particular site.
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### Feasibility

<b>Rating</b>	very good
<b>Comments</b>	The consultation component is highly feasible, based on the claims provided in the proposal of the success of Phase I collaborative consultation. The commitment of stakeholders to a consensus decision process is key, along with the ability of facilitators to guide stakeholders through the process. However, it is unclear how development of the NEPA documents, permitting and design work will be organized. The proposal does not state which entity is the NEPA agency, how the NEPA Record of Decision will be made in the context of the collaborative process, how permitting agencies will be involved in the process, and why design work will be done after NEPA documents are prepared and permits are received, rather than before. Two important contingencies are the possibility of major channel-altering floods occurring during the project period and that the NEPA agency may require an EIS rather than an EA.

### Performance Evaluation

<b>Rating</b>	good
<b>Comments</b>	The performance evaluation elements are appropriate for the type of project and the specific tasks. There are few measurable criteria and specific targets, though. For example, which particular local interests should participate and what is the extent of

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involvement intended? Also, what is meant by not altering flood flows or patterns - magnitude, stage, velocity profiles, flow paths, and to what degree? Some of the ecological measures could also be explicit, for example no net loss of bankside vegetative cover, pool/riffle/glide habitat, etc. Efficacy of the actions will be demonstrated by consensus, a desirable outcome in the NEPA and permitting phases, and a feasible design. Post-installation monitoring is not proposed in this phase.

### **Proposed Outcomes**

<b>Rating</b>	good
<b>Comments</b>	<p>Most of the products will be of value to decision makers. The topography, bathymetry, geotechnical and biological documents should be useful in hydraulic effects and meander pattern analyses and the alternatives analysis, will assist with NEPA and permit processes and will likely provide information needed for design work. The proposal claims the project could potentially create an oxbow formation, which is presently a rare habitat. The processes of initiation and succession of these types of habitats is probably somewhat well studied in other areas and therefore the knowledge in general will probably not be greatly increased. The propagation of meander cutoffs through manipulation of erosion and deposition patterns may not be as thoroughly understood and would contribute to the knowledge base. However, this will only occur if intensive and extensive post-project monitoring is conducted. It is interesting to note that most ecologically-based studies elsewhere strive more to understand how to re-establish meander patterns in already channelized rivers, rather than the reverse. Probably the most important part of this project to transfer to future efforts will be the collaborative decision process. Making documents publicly available and maintaining a webpage demonstrating the consultation process is important.</p>

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## Capabilities

Rating	very good
Comments	<p>Many of the task members have not been identified. The listed individuals and consultant firms appear to have the competencies required for respective tasks. River Partners has experience from Phase I of the project. Subcontractors worked on technical components of Phase I, as well. California Department of Fish and Game participation in the Phase II TAC is notably absent, however.</p>

## Cost-Benefits

Rating	good
Comments	<p>Cost share is not proposed for the project. Considering the importance to agricultural interests in maintaining the integrity of the pumping plant, as well as the extent and diversity of TAC partners and stakeholders, it seems that other funding sources could and should be made available. Most of the task budgets appear reasonable. Environmental compliance and permitting costs to the consultant seem somewhat high. If an EA is required, the extent of the NEPA documents will be limited, particularly if the Army COE is the NEPA agency and the bank revetment alternative is categorically excluded. Permits typically follow a strict, limited review schedule. In particular, if NEPA and permits are based on pre-design conceptual plans, overall these phases should be fairly economical.</p>

## Overall Evaluation Summary Rating

Rating	good
Comments	<p>The proposal is fairly sound and well developed. River Partners appears to have a solid background in facilitating consultation and project review coordination. Little of the material developed in</p>

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Phase I is presented. Not knowing the range of alternatives identified and considered in Phase I and the extent of technical information and analyses developed makes it difficult to consider if the scope of studies proposed is appropriate. Also, little detail of study approach and methods is presented for topographic, bathymetric mapping and geotechnical and biological surveys. Note that no in river hydraulic surveys (velocity profiling) are proposed. Not knowing the specific regulatory arena makes it difficult to determine if the steps, sequencing and budgeting of the environmental compliance, permitting and design components are appropriate. Also note that most of the letters of support do not provide specific respective interests in the project but instead use the same general description of what the project will achieve. This implies a general interest in participation in a collaborative process, but not respective views of an ideal outcome. The exception are letters from legislative and congressional delegations, which emphasize the benefit to agricultural interests. California Department of Fish and Game is notably absent from the TAC and does not include a letter of support.

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*Applicant Organization:* River Partners

*Amount Requested:* \$660,665

## Goals

Rating	
	<p><b>very good</b></p> <p><b>Comments</b> The goal of the larger three phase project is very clear. The pumping plant and fish screen at river mile 178 on the Sacramento River are located at the base of a meander bend, and any downstream migration of the meander will jeopardize the \$11 million pumping plant. Links to Calfed ERP goals revolve around protecting juvenile fish at the fish screen. These fish are presumably salmonids, although the link to fish is not discussed in detail. From the agricultural side, lost efficiency at the fish screen and pumping plant would require closure or mitigation, so there is heavy incentive to keep the existing facility functioning as designed.</p> <p>Taken at face value, the goals of phase II (this proposal) are stated very clearly. Project authors intend to continue to study the problem, collect (more?) field data, do more modeling, obtain appropriate environmental permits for a restoration project, and design a project so that it is ready for the phase III build stage. The</p>

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proposal discusses ecosystem restoration in a very broad sense, but phase II tasks that describe further study and more modeling are not as strongly related to Calfed ERP goals. How much additional study is warranted, and how does the additional study relate to products of the phase I work? These goals are not clear. In contrast, tasks that refer specifically to permitting and project design can clearly be related to moving the project forward under Calfed guidelines.

It is very obvious that phase I funding of an initial feasibility study did not result in a consensus or project plan, and several phase II tasks sound more like a continuation request than a new proposal. This leaves some gaps in the phase II project goals, and it is not clear what type of restoration or project design is proposed. It would be helpful to have a stronger sense about the role of riparian habitat to the project, and how this relates to in-stream issues at the fish screen. One of the proposed design options would not involve any change to riparian habitat, while another design option would require extensive re-design and movement of the channel. I would feel much better about the project goals if there was a clear feeling about a preferred design option.

Questions about design options and phase II project goals could have been clarified by direct discussion of phase I goals and products. The proposal makes several references to "potentially controversial issues", "further investigation of these problems" and "... address third party concerns" after the conclusion of phase I. This leaves me wondering if phase I was a failed attempt to design a project. I haven't read the phase

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I proposal or project summaries, but it would be logical for an initial study to move toward some kind of design. If this didn't happen, what tangible products are available from the phase I study? The authors could have removed much of this uncertainty by clearly articulating the goals and products of the phase I project, then showing why further study proposed in phase II is necessary.

The goals of agricultural users are either very simple, or very complex. If the agricultural users simply want the pumping plant to remain open, why didn't phase I move farther or faster toward a design recommendation? If agricultural users do not agree on the role of the pumping plant, what are the issues? Land ownership and site access are not a problem, so there are many unanswered questions. There is an underlying theme of conflict that is mentioned many times, and this makes it more difficult to determine the goals of the agricultural users.

I have rated the project goals "very good" in spite of my comments, with the caveat that this refers to the simple goal of protecting an existing fish screen. An \$11 million project appears to be in jeopardy, and it seems reasonable to do something about the problem. It would have been helpful to have more background information about phase I products so that the phase II goals would have more context.

### **Justification And Conceptual Model**

<b>Rating</b>	very good
<b>Comments</b>	I am again split between a very simple justification and some more complex questions. The simple justification states that a fish

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screen is necessary at this location, and the fish screen will not function properly if the river is not modified in some way. This simple justification is presented without a conceptual model, and there are no testable hypotheses. At this simple level, it may not be necessary to present alternate hypotheses or test assumptions. We can assume that if the river channel is not modified, the fish screen will not continue to function.

It would have been nice to follow the current Calfed trend toward use of conceptual models, and show some deference to testable hypotheses, adaptive management, and experimentation through design. A flow chart that starts with existing design options could show a logic tree that leads to selection of one project design, and completion of the project plans. It seems obvious that if the meander migrates downstream, the fish screen will be impacted. The conceptual model for phase II should summarize input variables that contribute to project design, and show how feedback produces a project plan that stabilizes the channel at the pump screen.

I've looked back at the proposal, and I still can't find whether this is classified as a pilot, demonstration or full-scale implementation project. I will assume from the proposal language that it is a full-scale implementation project. Implementation projects are not held to the same standard for conceptual models, hypothesis testing or interconnection between project components. In this case the justification is simple, and the conceptual model is not as critical. If this is a pilot or demonstration project, the lack of a conceptual model is more serious.

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### Approach

<b>Rating</b>	good
<b>Comments</b>	<p>I was not as happy with the project approach. My main issues are the disconnect between this project and the phase I work, lack of detail on some tasks, and timing of some phase II events.</p> <p>I would like to see stronger justification for task 3 (site data collection) and task 4 (more?) hydraulic and meander modeling. What unknowns require this additional time and expense? How does this relate to the \$290,000 that was spent for phase I analysis? Details of the proposed hydrologic modeling and "meander modeling" are not explained. "Meander modeling" is the more problematic of the two topics. I am not aware of a simple "meander model", although this may be a gap in my modeling background. I would have liked more discussion about meander model design, input variables, expected output, and assessment of model results. Because this information is lacking, the request for "meander modeling" sounds like a continuation of phase I work.</p> <p>The timing of some tasks seems to overlap. Field data collection spans months 4-22, and modeling and project design are said to rely on field data. On table 1 (proposal page 17), hydraulic and meander modeling will be conducted concurrently with field data collection. If this is the case, why do we need more field data? It might have been better to front-load the field data collection, then begin modeling in year two. I am assuming that field data collection primarily involves bathymetric and topographic surveys, although this was not discussed in detail. Biologic reports are also mentioned. This scheduling detail could be addressed if participants are willing to revise the timeline proposed in table 1.</p>

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In this proposal, project design also overlaps with data collection and modeling. Project design could have been shifted to year three to take complete advantage of the earlier phases of the project. I'm not sure it is feasible to begin project design in month 8, when hydraulic and fluvial evaluation extend from months 2-32. This information will be necessary for project design.

I don't think any of these issues are strong enough to torpedo the project, but the disconnect from phase I studies, lack of detail on some task descriptions, and overlap in task timing begins to raise questions about costs and benefits of the proposed phase II project.

### Feasibility

Rating	excellent
Comments	<p>The fundamental question for this project is how to stabilize a stream meander so that it does not impinge on a pumping plant and fish screen. This is a difficult problem, and the feasibility is related to our expectations about project longevity. The cover page, figure 1 and Figure 2 all show abandoned meanders near the pumping plant (PCGID-PID facility). It is obvious that meanders in this reach of the Sacramento river are mobile, and that any solution we devise will not be permanent on a geologic time scale. There is another issue here. To be quite blunt, the pumping plant is not situated in a good place. The situation would be much more stable if the pumping plant was located 1 km downstream, in the straight channel area. Our scale and investment should be conducted with these problems in mind. If the cost of the restoration approaches the cost of the pumping plant, it would be much more effective to move the pumping plant to a more stable straight reach of the river. Philosophical discussions aside, what scale or level of investment is appropriate for a project of this type?</p>

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Phase II (this proposal) will address the feasibility issue, and make decisions about the size or scope of the project that will effectively fix the problem. I wish that potential designs from the phase I analysis had been discussed in more detail. The only hints that we have are a proposed channel trace on the cover (that is not discussed anywhere in the proposal), and Figure 9. Figure 9 shows two potential designs, and the figure caption states that these are based on stakeholder input. These two designs will have radically different cost and longevity. The restoration design (figure 9 left) stabilizes many aspects of the existing channel, with less overall alteration. The flood corridor design (figure 9 right) creates an entirely new channel. I assume that these two (or three) designs will be tested through modeling, and a stable channel configuration will be identified. There are algorithms that use slope, sediment load, and flow characteristics to predict stable channel configurations. If this type of feasibility is addressed in phase II, the project can go forward with sound, science-based input. For this reason, I have rated the feasibility as "excellent". What we are really rating here is the feasibility of a feasibility study.

My one concern is that there will be a push to move some gravel and do a bigger project, where a small project may be more cost effective given the expected longevity in-stream modifications. This drive toward large projects is fed when many stakeholders and partners are involved. If the cost of the new channel approaches \$3-4 million, we might have been better off moving the pumping plant and creating a longer term solution. The channel will move again. How will this cost-benefit be addressed? Is there an objective means to pro-rate the cost of each design for 10, 20, or 50 year project durations? This type of prediction would be helpful. I would expect much more detail about the feasibility and longevity of the project when the phase III proposal is submitted.

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## Performance Evaluation

Rating	<b>fair</b>
Comments	<p>This proposal mentions site analysis and feedback during project design, but does not contain a discrete monitoring plan. This is a significant weakness. If the channel is reconfigured, it will be important to document pre-project conditions. These conditions can be used to evaluate the success of a restoration project, and are also used as performance measures. For example: What kinds of native fish inhabit the current channel? What are the current substrate and surface water conditions? Are non-native or invasive species present? If so, how will they be handled? How do juvenile fish currently interact with the intake and fish screen? These issues become more important in the context of the larger, three phase project. Phase II would be the ideal time to implement a detailed monitoring plan, and this monitoring plan should be continued through the construction phase. Post-project monitoring will be difficult given the three year duration of Calfed projects, but this should also be considered.</p> <p>Details about evaluation of hydrologic and meander models are also missing. This is a large part of the current proposal, and there should be guidelines to judge the performance of each model. This will remove ambiguity when it is time to select a channel configuration, and move forward with the design phase of the project.</p> <p>Some of these issues can be salvaged if field observations are detailed and accurate, but it would be much better to have a task that lists monitoring and assessment in each phase of the project.</p>

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## Proposed Outcomes

<b>Rating</b>	<b>fair</b>
<b>Comments</b>	<p>Outcomes, products and dissemination are not discussed outside of the immediate goals of the project. There is almost no attempt to use this project as a design lesson, or apply lessons learned to other restoration projects. This is unfortunate, because larger lessons about meander stability are still debated by geomorphologists and restoration professionals. This section would be more effective if there were plans in place to report the findings to a wider audience.</p> <p>On a local level, the proposed outcome is very important to water users, habitat specialists, and affected organisms. Success or failure will be judged by channel stability and juvenile fish intake at the fish screen, and this is separate from some of the broader outcomes described above. Assuming that this is an implementation project, broad outcomes may be less important than they would be in pilot or demonstration projects.</p>

## Capabilities

<b>Rating</b>	<b>excellent</b>
<b>Comments</b>	<p>This is a highly qualified, experienced team with extensive infrastructure. Kudos for the collaborative, interagency approach. There should not be any issues here.</p>

## Cost-Benefits

<b>Rating</b>	<b>good</b>
<b>Comments</b>	<p>This makes me nervous. There is always an element of sticker-shock with someone else's proposal, but I keep coming back to some simple points: What products do we have to show for the first \$280,000? Isn't a large portion of phase II more of the same work? The phase</p>

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II proposal refers to public meetings, field work and modeling that were completed during phase I. I would like more information about the products that were produced from this work, and better explanation about the importance of more field measurements, more hydrologic measurements, and more meander modeling. I would have rated the cost/benefit higher if I had an understanding of these issues. I see the potential to get into this project to a cost of almost \$1 million, with a set of blueprints and construction drawings as the main product.

On the positive side, this pumping station has a critical need, and several components of the phase II proposal should go forward as soon as possible. Permitting is necessary before the phase III construction project can begin, and the permitting necessary for streambed alteration will take time and money. This phase of the project seems realistic and necessary.

### **Overall Evaluation Summary Rating**

<b>Rating</b>	very good
<b>Comments</b>	I have made many detailed comments that address issues that I see in this proposal. Better links to previous work, more complete explanation of the input and goals of additional modeling and field measurements, and a detailed monitoring plan would all help this proposal.  After stating these things, I still see a need for modification of the Sacramento river channel at river mile 178, and it seems most effective to continue with the current project team. This assumes that performance measures will be identified, and an objective decision process will be used to pick an appropriate design for phase II of the project. If these goals are met, it seems likely that the design and build phases can proceed without further problems.

# External Technical Review #3

*Proposal Number:* 0054

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*Applicant Organization:* River Partners

*Amount Requested:* \$660,665

## Goals

<b>Rating</b>	very good
<b>Comments</b>	The goals of this project are very clear, concise, and well constrained. They obviously have a great handle on what is realistic in this system based on their past experience and their working relationship with the sub-contractors.

## Justification And Conceptual Model

<b>Rating</b>	very good
<b>Comments</b>	The approach they are using, by leveraging off of well known experts in hydraulics and hydrology for key input while using local input from agriculture and ecologists is key to project success. I see no major short comings of their justification.

## Approach

<b>Rating</b>	excellent
<b>Comments</b>	They have a very good understanding of this system, and so their proposed approach has been based on sound information from technical experts and their own first-hand knowledge.

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### **Feasibility**

<b>Rating</b>	excellent
<b>Comments</b>	<p>They have a great team put in place and they know what they need to do. They have an appropriate budget, although an extremely aggressive timeline (which they acknowledge).</p> <p>My main concern would be primarily that their timeline is brief, and is likely to be unmanageable as proposed. I think that contingency plans are appropriate for accounting for time overdraws.</p>

### **Performance Evaluation**

<b>Rating</b>	very good
<b>Comments</b>	<p>The hypotheses are not really testable, but the overall project is testable. They have clear proposed deliverables, and these are needed for the project to progress to Phase 3. That is, they HAVE to meet their own goals to continue this larger scale project; given their success in the past, I see no reason not to expect success with this project.</p>

### **Proposed Outcomes**

<b>Rating</b>	good
<b>Comments</b>	<p>I am a bit discouraged that it will take this level of funding and effort in order to marginally restore 1 single meander bend on the river. This is perhaps just a reality of large river restoration these days, but this will not even result in restoration, but simply the plans for a restoration.</p> <p>This will set up a solid foundation for restoration, but for this much money, I would hope for more than just a plan and analysis.</p>

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## Capabilities

Rating	excellent
Comments	They have worked together and show evidence that they will be able to do good work together in the future.

## Cost-Benefits

Rating	good
Comments	Again, this is a lot of money for planning in comparison to the fact that the actual restoration will be very local in scale. I wish that the authors could also think of how they can use this project to expand or to serve as a model for restoration planning for larger or more projects like this. That is, if we have to provide this level of funding for planning on every meander bend, then we will never be able to meet the restoration needs of any system. Thus, for the level of funding requested, the PIs should consider using some of their time at the end in order to broaden their effort for larger scale restoration in the future, not just this single meander bend.

## Overall Evaluation Summary Rating

Rating	very good
Comments	This is a sound project, with excellent personnel and a proven track record.  The main limitation of the proposal is that the end result will be somewhat limited in scope. Thinking of how to expand the project to larger guidance initiatives merits some consideration.

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*Applicant Organization:* River Partners

## *1. Applicability to ERP goals and regional priorities.*

The proposal states that Phase I of the project addressed the following ERP Goals: Goal 1 - At Risk Species [and Native Biotic Communities] Goal 2 - Ecological Processes Goal 4 - Habitats Goal 5 - Non-Native Invasive Species

This proposal (for Phase II of the project: planning, data collection, environmental compliance and development of an action plan for implementation) addresses the same goals and will likely address multiple CALFED ERP objectives. Although this is the planning and design phase, protection of the fish screen facility at the PCGID-PID combined pumping plant and restoration of adjacent and nearby riparian habitat are the two central objectives (and planned outcomes) of the project. Once a preferred alternative is selected and the project is implemented, additional goals and/or objectives of the CALFED ERP program may or may not be met. Without knowing the specific project to be implemented, it is difficult to assess the applicability of the project much beyond the ERP Goals category.

This proposed project appears to be a high priority for regional restoration goals, particularly in light of the potential loss of function of the fish screen at the PCGID-PID pumping plant due to undesirable changes in channel geomorphology and river meander. Past investment (~\$11 million) in the pumping plant and fish screen, coupled with considerable local and regional support for a solution to ensure continued proper function of the screen, while

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maintaining irrigation deliveries to agricultural interests are noted in the proposal. The added benefits of restoring the nearby Llano Seco Unit of the Sacramento National Wildlife Refuge (SNWR) include presumably improved habitat for native MSCS species on ~ 500 acres of formerly farmed land, while improving connectivity of one of the largest contiguous areas of riparian habitat along the Sac. River.

If this project is implemented in the manner depicted in Fig. 10 (p. 12) of the proposal (the Sac. River mainstem channel is re-routed via a cut-off channel, creating a slack water, connected meander), it appears the project could address the fish screen protection needs, while substantially improving riparian and aquatic habitat in this location. Additional riparian vegetation restoration at the Llano Seco Unit will likely further enhance the ecological benefits of this project. However, from the proposal it is unclear whether this alternative is feasible or has enough stakeholder support to be successful. Therefore, it remains uncertain whether this project will contribute significantly toward regional restoration goals, beyond protection of an existing fish screen and restoring a formerly farmed unit of the SNWR.

notes:

Phase III would require significant additional funding to complete. The project has the potential to benefit both agricultural and environmental interests. There is some disagreement about how directly the project addresses PSP objectives. The pumping station provides water that goes to agricultural and wildlife areas, but there is disagreement in the panel whether or not the project directly affects farmers or farming practices in the Bay-Delta.

### *2. Links with other restoration actions.*

This project (Phase I) was previously funded by CALFED ERP (ERP-02-P39) and this second phase would move the project

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forward toward a workable solution to the problems identified at this site. The proposed project would also be directly linked to protecting past restoration investments in the region; namely, the ~\$11 million already invested (through the AFRP program) in screening the PCGID-PID pumping facility. The proposal seeks to find a solution to the changing river meander and channel geomorphology that is directing river flows directly toward, rather than across (perpendicular to) the fish screen, thereby maintaining the correct function of the fish screen while ensuring continued delivery of irrigation water to farmers.

In terms of developing complex ecosystem restoration projects with local and regional stakeholder involvement, this project serves as an exemplary model. The broad support indicated by letters of endorsement indicates that stakeholder involvement has been critical to the success of developing a solution to the problems identified in this location. Rather than addressing only agricultural or ecosystem restoration interests and concerns, this project attempts to bridge previous gaps between agriculture and ecosystem restoration by developing a stakeholder driven, partnership-based solution that involves key groups from both areas of interest.

notes:

The proposal could provide a model for cooperation between disparate interests in the region. The project furthers agricultural objectives by protecting the pumping station, enhances riparian habitat, and improve juvenile salmonid survivorship at the power plant. The proposed project would also provide a potential mechanism to study riprap placement and its effects on river dynamics.

### *3. Local circumstances.*

The overarching goals of protecting the fish screen facility at the PCGID-PID combined pumping plant and restoring the

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Llano Seco Unit of SNWR both appear to be feasible. However, the feasibility of obtaining further restoration benefits (i.e., providing a connected slack water meander by reconfiguring the Sacramento River channel through a cut-off channel), which would be highly desirable from an ecological standpoint, remains uncertain.

The purpose of this phase of the project (Phase II) is to investigate those possibilities and determine a preferred alternative and action plan to implement a selected project. Until that preferred alternative and plan have been developed, it is difficult to assess the feasibility and likelihood of local (or legal) constraints on the project's ability to move forward.

notes:

The panel raised some questions about the costs and feasibility of the proposed activities contained in Phase III.

### *4. Local involvement.*

The proposal notes that the past successes of Phase I of this project have hinged upon close involvement with, and support from, local stakeholders. The appropriate local and regional groups appear to be involved, and have unanimously demonstrated their support for this project. Further public outreach and close collaboration with the stakeholders identified in Phase I are central to this next phase. This project is a model for partnership-based, collaborative development of an ecosystem restoration project that addresses local concerns and strives to meet the needs of all parties involved.

notes:

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The project unites many different elements. These include habitat restoration, water interests, and fish recovery. Stakeholder participation is emphasized.

### 5. Local value.

As previously noted, there is a high value to maintaining the proper function of the fish screen at the PCGID-PID combined pumping plant to ensure continued protection of anadromous fishes in the Sacramento River, as well as to protect past ecosystem restoration investments and ensure continued delivery of irrigation to agricultural lands (~30,000 acres) supplied by PCGID-PID. Some of these ag. lands (particularly seasonally flooded crops like rice) are of high value to waterfowl and shorebirds, providing a valuable ecosystem benefit beyond the riparian zone of the Sac. River.

The restoration of the Llano Seco Unit of the SNWR is likely to improve the habitat value of this site (formerly farmed land - fallow for the past 10 years - and now dominated by impenetrable thickets of non-native weeds, principally thistle spp.) and will enhance connectivity of one of the largest contiguous areas of existing riparian habitat on the Sac. River. The extent to which habitat value will be improved on the Llano Seco Unit itself remains to be seen and depends on the restoration design and methods employed, the availability of nearby source populations to recolonize the area, the frequency and duration of flood inundation (if any) and other factors.

Perhaps the greatest ecosystem benefit this project can offer is the creation of a connected slack water meander via re-routing the Sac. River through a cut-off breach channel to the north of the pumping plant and the Llano Seco Unit (see project example in Fig. 10, p. 12 of proposal). This meander would significantly enhance aquatic and riparian habitat quality, providing important rearing habitat for fishes and other aquatic organisms, as well as a source for enhanced nutrient flow from the aquatic environment to the surrounding riparian zone. The feasibility and likelihood of implementing

## Sacramento Regional Panel Review

this component of the project, however, remains to be determined.

notes:

The project has the potential to significantly enhance the local ecosystem while providing benefits to agricultural water interests.

### *6. Applicant history.*

Yes. River Partners has demonstrated its ability to successfully design, implement and monitor these kinds of projects in many different riverine environments throughout the state.

notes:

Phase I of this project accomplished stated objectives.

### *7. Summary of Overall Panel Discussion and Review*

The panel felt that this was a strong proposal. The project covers topics of local and regional importance. The project is clearly related to the CALFED ERP goals and objectives. However, some members of the panel questioned the direct connection of this project to PSP objectives. Panel members also questioned who should fund such a project and the regional value of this site-specific proposal.

### *8. Panel Quality Ranking*

**Very Good**

notes:

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**9. Regional Priority Ranking**

**Very High**

notes:

#0054: Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological I...

# **Environmental Compliance Review**

***Proposal Number:*** 0054

***Proposal Name:*** Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological Interests Together for Pumping Plant Protection and Riparian Restoration (Sacramento River Mile 178) – Design Development and Environmental Compliance

***Applicant Organization:*** River Partners

1. Is compliance with California Environmental Quality Act (CEQA) required for this project?

**Yes.**

2. Is compliance with National Environmental Policy Act (NEPA) required for this project?

**Yes.**

3. Does this project qualify for an Exemption or Exclusion under CEQA and NEPA, respectively?

**No.**

4. Did the applicant correctly identify if CEQA/NEPA compliance was required?

**Yes.**

## Comments

**Deferred environmental review to Phase III of the project.**

5. Did the applicant correctly identify the correct CEQA/NEPA document required for the project?

**Yes.**

6. Has the CEQA/NEPA document been completed?

**No.**

7. If the document has not been completed, did the applicant allot enough time to complete the document before the project start date?

**No.**

8. If the document has not been completed, did the applicant allot enough funds to complete it?

#0054: Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological I...

Environmental Compliance Review

**Yes.**

9. Did the applicant adequately identify other legal or regulatory compliance issues (Incidental Take permits, Scientific Collecting permits, etc,) that may affect the project?

**No.**

Comments:

**1600 Nepa, Fesa, CESA, CEQA, 401**

10. Does the proposal include written permission from the owners of any private property on which project activities are proposed or, if specific locations for project activities are not yet determined, is it likely that permission for access can be obtained?

**Yes.**

Comments:

**Have established access with landowners during previous projects**

11. Do any of these issues affect the project's feasibility due to significant deficiencies in planning and/or budgeting for legal and regulatory compliance or access to property?

**No.**

# Budget Review

**Proposal Number:** 0054

**Proposal Name:** Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological Interests Together for Pumping Plant Protection and Riparian Restoration (Sacramento River Mile 178) – Design Development and Environmental Compliance

**Applicant Organization:** River Partners

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

**Yes.**

2. Does the Budget Form include a detailed budget for each task identified on the Task and Deliverables Form and in the proposal text?

**Yes.**

3. Are the costs associated with each task and deliverable reasonable costs for performing the services?

**Yes.**

4. Is each person (employee, consultant, subcontractor, etc.) identified on the Personnel Form also included on the Budget Form?

**Yes.**

5. Are there estimated hours and an associated hourly rate of compensation for each person identified on the Personnel, Tasks and Deliverables, and Budget forms?

**Yes.**

6. Does the budget include the benefit rate for all personnel identified on the Personnel and Budget forms?

**Yes.**

7. Are the proposed labor rates comparable to state rates?

#0054: Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological I...

## Budget Review

**Yes.**

8. Is more than 25% of the work proposed to be performed by subcontractors?

**Yes.**

If yes, what is the exact percentage to be performed by subcontractors?

**58% - \$383,000 of worked is performed by subcontractor -  
Recommend detail budget for subcontractors and labor rates for comparables.**

9. Are project management expenses appropriately budgeted?

**Yes.**

10. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs? Are indirect rates, if used, appropriately applied?

**Yes.**

11. Does the proposal adequately explain major expenses? Are the labor rates and other charges proposed reasonable in relation to current state rates?

**No.**

If no, please explain:

**No major equipment was identified.**

12. For equipment >=\$5,000, was a separate worksheet filled out?

Please note: No overhead or indirect rate charges are allowed on the equipment purchases

**No.**

13. Is the purpose for all travel clearly represented in either the proposal itself, or in the Tasks and Deliverable Form?

Please note: Recurring travel costs for a specific task or subtask may be combined into one entry on the Budget Form, but the number of trips and cost for each trip must be clearly represented.

**No.**

## Budget Review

14. Are travel and per diem at rates specified by the California Department of Personnel Administration for similar employees?

**No.**

15. Are other agencies contributing or likely to contribute a share of the projects' costs?

**No.**

16. If the applicant identified cost share or matching funds, are they also described in the text of the proposal?

**No.**

17. Does the applicant take exception to the standard grant agreement's terms and conditions? If yes, are the approaches the applicant proposes to address these issues a reasonable starting point for negotiation a grant agreement?

**Yes.**

18. Are there other budget issues or "red flags" that warrant consideration?

**Yes.**

If yes, please explain:

**Recommend evaluation of cost for consultant fees identified in the budget detail (e.g. Task 3 and Task 4 MKB - \$77,500 , Task 5 - \$150,000).**

19. Provide revised amount requested based upon your review:

\$