

i. Proposal number.# 2001-F206*

ii. Short proposal title.# Molecular tracers to determine nutrients in SJR*

APPLICABILITY TO CALFED ERP GOALS AND IMPLEMENTATION PLAN

1a1. Link to ERP Strategic Goals: What Strategic Goal(s) is /are addressed by this proposal? List the letter(s) of all that apply.

- A. At-risk species**
- B. Rehabilitate natural processes**
- C. Maintain harvested species**
- D. Protect-restore functional habitats**
- E. Prevent non-native species and reduce impacts**
- F. Improve and maintain water quality#A, D, F***

1a2. Describe the degree to which the proposal will contribute to the relevant goal. Quantify your assessment and identify the contribution to ERP targets, when possible.# Goals A and D - The study could provide information that would assist decision makers on appropriate strategies for improving dissolved oxygen in the SJR and eliminating low dissolved oxygen as a stressor for salmon in the SJR.

Goal F - The study is somewhat/indirectly related to improving and maintaining water quality. The study will provide data that would assist in identifying sources that contribute to degradation of water quality.

ERP Targets 13,18 (Reduce loads of contaminants to SJR)*

1b. Objectives: What Strategic Objective(s) is/are addressed by this proposal? List Objective (from the table of 32 objectives) and describe potential contribution to ERP Goals. Quantify your assessment, when possible.# The project would provide data to be used towards achieving the following objective: Goal F, Objective 2 (Reduce oxygen depleting substances in Bay-Delta and watersheds).*

1c. Restoration Actions: Does the proposal address a Restoration Action identified in Section 3.5 of the PSP? Identify the action and describe how well the proposed action relates to the identified Restoration Action.# Restoration Action #6 (Contaminants in the Central Valley) - This proposal directly addresses the research needs described in the PSP. The PSP calls for studies that determine causes of low dissolved oxygen in the SJR. Nutrients are known to contribute to the low dissolved oxygen problems. This study would assist in determining the sources of nutrients.*

1d. Stage 1 Actions: Is the proposal linked directly, indirectly or not linked to proposed Stage 1 Actions? If linked, describe how the proposal will contribute to ERP actions during Stage 1.# Environmental Water Quality, Stage 1 Action #9 (Conduct work addressing dissolved oxygen depleting substances, including nutrients) - The proposal directly addresses this action.*

1e. MSCS: Describe how the proposal is linked to the Multi-Species Conservation Strategy and if it's consistent with the MSCS Conservation measures. Identify the species addressed and whether the proposal will

"recover", "contribute to recovery" or "maintain" each species.# This study is not directly linked to the MSCS or will not directly contribute to the recovery of threatened or endangered species.*

1f. Information Richness/Adaptive Probing related to the proposal: Describe the degree to which the proposal provides information to resolve one of the 12 scientific uncertainties (Section 3.3 of the PSP), and whether the proposal offers a prudent approach to answer these uncertainties.# Scientific Uncertainty #11

(Contaminants in the Central Valley) - This proposal generally address uncertainties associated with goals to reduce loads, toxicity of contaminants. The text in this section in the PSP does not specifically address low dissolved oxygen, despite its high profile as a problems through other actions, targets, and objectives.*

1g. Summarize comments from section 1a through 1f related to applicability to CALFED goals and priorities. Identify the strengths and weaknesses of the proposal, highlighting the applicability of the proposed project to CALFED and CVPIA goals and priorities. Focus on aspects of the proposal that may be important to later stages in the project review and selection process.#

The techniques and approach for this study have merit. However, the discussion on this project's applicability to CALFED Goals is limited. The proposal could be strengthened significantly with letters of support, collaboration or demonstrated coordination from/with the SJR Dissolved Oxygen Technical Committee (SJRDOTC). It is unclear how this effort fits in with the goals and objectives of the SJRDOTC or if the data from this proposal would be directly applicable. The number of sampling locations and resulting costs seems high. If the scope were better coordinated and supported by the SJRDOTC the proposal would be improved.

The proposal would be improved with more discussion on the past uses/studies where this technology has been used to assess sources of nutrient loads.*

APPLICABILITY TO CVPIA PRIORITIES

1i. Describe the expected contribution to natural production of anadromous fish. Specifically identify the species and races of anadromous fish that are expected to benefit from the project, the expected magnitude of the contribution to natural production for each species and race of anadromous fish, the certainty of the expected benefits, and the immediacy and duration of the expected contribution. Provide quantitative support where available (for example, expected increases in population indices, cohort replacement rates, or reductions in mortality rates).#

This water quality research project is intended to apportion sources of upstream nutrients that contribute to the depletion of dissolved oxygen in the lower San Joaquin River by establishing nutrient tracers. This could contribute to the implementation of San Joaquin Mainstem Action 5 in the Revised Draft Restoration Plan for the AFRP which focuses on meeting the State Water Resources Control Board's dissolved oxygen standard. This information could be used to remediate inputs and establish source TMDLs based on source contribution to the problem, and monitor the effectiveness of compulsory and voluntary actions. The benefits to anadromous fish would primarily be to salmon and steelhead migrating from the Delta to upstream San Joaquin River tributaries to spawn. Expected benefits and immediacy of benefit are unknown because the research would need to be completed, and action would need to be taken. This will likely occur no sooner than 3-4 years. After nutrient sources are apportioned by source then

management actions to remediate the dissolved oxygen problem would need to be taken before benefits are realized. The certainty and duration of the benefits that could accrue would likely be moderate until a full-scale plan to meet potential TMDLs could in large part be met through voluntary actions.*

1j. List the threatened or endangered species that are expected to benefit from the project. Specifically identify the status of the species and races of anadromous fish that are expected to benefit from the project, any other special-status species that are expected to benefit, and the ecological community or multiple-species benefits that are expected to occur as a result of implementing the project.# Species most likely to benefit would be the threatened steelhead and San Joaquin and East-side

Delta tributary fall-run chinook salmon. Other species benefited would be any aquatic species with a fairly low threshold tolerance for dissolved oxygen that is resident or transient to the lower San Joaquin River in the late summer and fall. In dry water years the low dissolved oxygen in the San Joaquin River can pose a problem to species that reside in, or need to pass through, this habitat. Delay in, or stress during, upstream migration of chinook salmon can have potentially large detrimental effects. These include stress that can reduce reproductive viability, or delay in reaching spawning grounds of ripe individuals, which can result in partial or complete loss of gametes. Thus it is in dry water years that benefits to anadromous salmonids would have their greatest benefit.*

1k. Identify if and describe how the project protects and restores natural channel and riparian habitat values. Specifically address whether the project protects and restores natural channel and riparian habitat values, whether the project promotes natural processes, and the immediacy and duration of benefits to natural channel and riparian habitat values.# This action would not directly

contribute to natural channel and riparian habitat values but it could help promote natural biotic and chemical processes in the river. This action would help identify the most important nutrient source origins that contribute to San Joaquin dissolved oxygen problems by season, and will help to prioritize the most appropriate restoration/remediation actions. The San Joaquin Dissolved Oxygen Workgroup is currently working on some of these same issues with the intent to help establish TMDLs that can be accepted by the Water Quality Control Board and EPA. It seems as if this research would assist in this effort.*

1l. Identify if and how the project contributes to efforts to modify CVP operations. Identify the effort(s) to modify CVP operations to which the proposed project would contribute, if applicable. Efforts to modify CVP operations include modifications to provide flows of suitable quality, quantity, and timing to protect all life stages of anadromous fish as directed by Section 3406 (b)(1)(B) of the CVPIA, including flows provided through management of water dedicated under Section 3406(b)(2) and water acquired pursuant to Section 3406(b)(3).# Often, water from New Melones is required to help achieve

water quality standards at Vernalis. This includes low dissolved oxygen. If this research ultimately leads to improved management of upstream nutrient sources, this could possibly reduce the need for water from New Melones needed to maintain water quality at Vernalis, thus provided added CVP operational flexibility.*

1m. Identify if and how the project contributes to implementation of the supporting measures in the CVPIA. Identify the supporting measure(s) to which the proposed project would contribute, if applicable. Supporting

measures include the Water Acquisition Program, the Comprehensive Assessment and Monitoring Program, the Anadromous Fish Screen Program, and others.# This project could contribute to the CVPIA supporting measure of Section 3406(c)(2), which states: "Determine the existing and future in-basin needs of the Stanislaus River Basin, including needs for water supply, water quality, and fish and wildlife." This again relates to the fact that the Stanislaus is a CVP controlled stream, and the BOR currently has primary responsibility for meeting water quality objectives, set through the Bay-Delta Accord process and adopted by EPA, on the San Joaquin River. By reducing biological oxygen demand in the lower San Joaquin in the spring, late summer and fall, this may reduce the need for water to be released by the BOR from New Melones to meet water quality objectives.*

1n. Summarize comments from section 1i through 1m related to applicability to CVPIA priorities (if applicable, identify the CVPIA program appropriate to consider as the source of CVPIA funding [for example, the Anadromous Fish Restoration Program, Habitat Restoration Program, Water Acquisition Program, Tracy Pumping Plant Mitigation Program, Clear Creek Restoration Program, Comprehensive Assessment and Monitoring Program, and Anadromous Fish Screen Program]). Identify the strengths and weaknesses of the proposal, highlighting the applicability of the proposed project to CALFED and CVPIA goals and priorities. Focus on aspects of the proposal that may be important to later stages in the project review and selection process.# This water quality research to develop a definitive method to identify sources of nutrients that

contribute to degraded water quality on the lower San Joaquin River appears to be an important piece of research. If funded through the CVPIA, the AFRP would be the most appropriate funding source. This research is linked to implementation of San Joaquin River Action 5 in the Revised Draft Restoration Plan for the AFRP. This research will help establish more realistic TMDLs and identify specific major sources of nutrients most in need of remedial action. The dissolved oxygen depletion that often occurs in the lower San Joaquin River can have indirect effects on the success of salmon production in San Joaquin River tributaries within a given year, so action stemming from this research would likely benefit anadromous fish to some unknown extent. However, the potential for ecological benefit of this research will not be realized for 3-5 years. If successful, this research could provide important information to management and regulatory agencies that are responsible for water quality on the lower San Joaquin River.*

RELATIONSHIP TO OTHER ECOSYSTEM RESTORATION PROJECTS

2a. Did the applicant explain how the proposed project relates to other past and future ecosystem restoration projects, as required on page 57 in the PSP? Type in yes or no.#yes*

2b. Based on the information presented in the proposal and on other information on restoration projects available to CALFED and CVPIA staff, describe how the proposed project complements other ecosystem restoration projects, including CALFED and CVPIA. Identify projects or types of

projects that the proposed project would complement, now or in the future.

Identify source of information.#Proposal targets problem of dissolved oxygen depletion in lower SJR during low flow summer conditions, complementing research funded by CALFED under 99B16. Nutrient loads are linked to DO depletion and identification of sources will help in developing remediation and best management practices. Information source: Proposal.*

RESULTS AND PROGRESS ON PREVIOUSLY FUNDED CALFED AND CVPIA PROJECTS, INCLUDING REQUESTS FOR NEXT-PHASE FUNDING

3a1. Based on the information presented in the proposal and on project reports and data available to CALFED and CVPIA staff, has the applicant previously received CALFED or CVPIA funding? Type CALFED, CVPIA, both, or none.#none*

3a2. If the answer is yes, list the project number(s), project name(s) and whether CALFED or CVPIA funding. If the answer is none, move on to item 4.#

If the answer is no, move on to item 4.*

3b1. Based on the information presented in the proposal and on project reports available to CALFED and CVPIA staff, did the applicant accurately state the current status of the project(s) and the progress and accomplishments of the project(s) to date? Type yes or no.#*

3b2. If the answer is no, identify the inaccuracies:#

3c1. Has the progress to date been satisfactory? Type yes or no.#*

3c2. Please provide detailed comments in support of your answer, including source of information (proposal or other source):#

REQUESTS FOR NEXT-PHASE FUNDING

3d1. Is the applicant requesting next-phase funding? Type yes or no.#no*

3d2. If the answer is yes, list previous-phase project number(s) here. If the answer is no, move on to item 4.#*

3e1. Does the proposal contain a 2-page summary, as required on pages 57 and 58 of the PSP? Type yes or no.#*

3e2. Based on the information presented in the summary and on project reports available to CALFED and CVPIA staff, is the project ready for next-phase funding? Type yes or no.#*

3e3. Please provide detailed comments in support of your answers, including source of information (proposal or other source):#*

LOCAL INVOLVEMENT

4a. Does the proposal describe a plan for public outreach, as required on page 61 of the PSP? Type yes or no.# No*

4b. Based on the information in the proposal, highlight outstanding issues related to support or opposition for the project by local entities including watershed groups and local governments, and the expected magnitude of any potential third-party impacts.# This is clearly identified as a research project with management implications. It does not identify support from local groups. Better identification of the source of the dissolved oxygen problem on the lower San Joaquin River could clearly have implications for those responsible for contributing to high nutrient loads in the San Joaquin, whether or not this is a third-party impact is unclear to this reviewer.*

ENVIRONMENTAL COMPLIANCE

4d. List any potential environmental compliance or access issues as identified in the PSP checklists.# No issues are identified.*

4e. Specifically highlight and comment on any regulatory issues listed above that may prevent the project from meeting the projected timeline.# This is a modeling proposal which will not need any permitting.*

COST

5a. Does the proposal include a detailed budget for each year of requested

support? Type yes or no.# yes*

5b. Does the proposal include a detailed budget for each task identified?
Type yes or no.# yes*

5c. Is the overhead clearly identified? Type yes or no.# yes*

5d. Are project management costs clearly identified? Type yes or no.# yes*

5e. Please provide detailed comments in support of your answers to questions 5a - 5d.# All information requested has been provided by project proponent in a clear, concise, and understandable format.*

COST SHARING

6a. Does the proposal contain cost-sharing? Type yes or no.# no*

6b. Are applicants specifically requesting either state or federal cost share dollars? Type state, federal, or doesn't matter.# federal*

6c. List cost share given in proposal and note whether listed cost share is identified (in hand) or proposed.

6c1. In-kind:# n/a*

6c2. Matching funds:# n/a*

6c3. Show percentage that cost sharing is of total amount of funding requested along with calculation.# n/a*

6d. Please provide detailed comments in support of your answers to questions 6a - 6c3.# n/a*