

PSP Cover Sheet

99B-130

Proposal Title: Development of an Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration
 Applicant Name: Surface Water Resources, Inc.
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Amount of CALFED funding requested: \$171,100
 Project Duration: 2 years

Indicate the topic for which you are applying (check only one box).

- | | |
|---|---|
| <input type="checkbox"/> Fish Passage/Fish Screens | <input type="checkbox"/> Introduced Species |
| <input checked="" type="checkbox"/> Habitat Restoration | <input type="checkbox"/> Fish Management/Hatchery |
| <input type="checkbox"/> Local Watershed Stewardship | <input type="checkbox"/> Environmental Education |
| <input type="checkbox"/> Water Quality | |

Does the proposal address a specified Focused Action? yes no

What county or counties is the project located in? Yuba and Nevada Counties

Indicate the geographic area of your proposal (check only one box).

- | | |
|---|---|
| <input type="checkbox"/> Sacramento River Mainstem | <input type="checkbox"/> East Side Trib: _____ |
| <input type="checkbox"/> Sacramento Trib: _____ | <input type="checkbox"/> Suisun Marsh and Bay |
| <input type="checkbox"/> San Joaquin River Mainstem | <input type="checkbox"/> North Bay/South Bay: _____ |
| <input type="checkbox"/> San Joaquin Trib: _____ | <input type="checkbox"/> Landscape (entire Bay-Delta watershed) |
| <input type="checkbox"/> Delta: _____ | <input checked="" type="checkbox"/> Other: Yuba River |

Indicate primary species which the proposal addresses (check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> San Joaquin and East Side Delta tributaries fall-run chinook salmon | |
| <input type="checkbox"/> Winter-run chinook salmon | <input checked="" type="checkbox"/> Spring-run chinook salmon |
| <input checked="" type="checkbox"/> Late-fall run chinook salmon | <input checked="" type="checkbox"/> Fall-run chinook salmon |
| <input type="checkbox"/> Delta smelt | <input type="checkbox"/> Longfin smelt |
| <input type="checkbox"/> Splittail | <input checked="" type="checkbox"/> Steelhead trout |
| <input checked="" type="checkbox"/> Green sturgeon | <input checked="" type="checkbox"/> Striped bass |
| <input type="checkbox"/> Migratory birds | <input type="checkbox"/> All chinook species |
| <input checked="" type="checkbox"/> Other: American shad | <input type="checkbox"/> All anadromous salmonids |

Specify the ERP strategic objective and target(s) that the project addresses. Include page numbers from February 1999 version of ERP Volume 1 and II:

The proposed project will assist CALFED in achieving all restoration targets and actions identified for the Yuba River (ERPP, Vol. 2, pg. 293-301). In addition, the project will facilitate achieving the following strategic goals and objectives (Strategic Plan, Table 5-1; ERPP, Vol. I, pg 220-223, 229).
 ▶ Restore populations of all runs of chinook salmon and steelhead (Goal 1, Objectives 3, 4, 5, 6):

- ▶ Rehabilitate natural processes (e.g., flows, temperatures, floodplain dynamics, and sedimentation patterns) to support aquatic & associated terrestrial biotic communities (Goal 2, Obj. 4, 5, 6, 7, & 8);
- ▶ Restore and protect riparian and aquatic habitat, including freshwater and essential fish habitat, in the Central Valley and its rivers (Goal 4, Objective 2, Sub-objectives 8, 9, and 10); and
- ▶ Reduce stressors to anadromous fish species, such as entrainment, habitat loss and degradation, and predation (Stressor Reduction Objectives 1, 2, 3, 4, 6, and 21).

Indicate the type of applicant (check only one box):

- | | |
|--|---|
| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public Non-profit joint venture | <input type="checkbox"/> Non-profit |
| <input type="checkbox"/> Local government/district | <input checked="" type="checkbox"/> Private party |
| <input type="checkbox"/> University | <input type="checkbox"/> Other: _____ |

Indicate the type of project (check only one box):

- | | |
|--|---|
| <input checked="" type="checkbox"/> Planning | <input type="checkbox"/> Implementation |
| <input type="checkbox"/> Monitoring | <input type="checkbox"/> Education |
| <input type="checkbox"/> Research | |

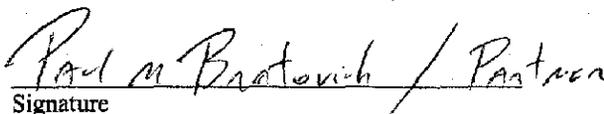
By signing below, the applicant declares the following:

- 1.) The truthfulness of all representations in their proposal;
- 2.) The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- 3.) The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Michael Bryan, Ph.D.
Surface Water Resources, Inc.


Signature

Paul Bratovich, Partner
Surface Water Resources, Inc.


Signature

Development of an Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration

A Proposal to Develop a Local-Level, Multi-Agency Implementation Plan to Direct the Near-Term Implementation of Prioritized Yuba River Anadromous Fish Restoration Actions in a Manner Consistent with Long-Term Ecosystem and Watershed Management Goals

Submitted by:

Michael Bryan, Ph.D.

Surface Water Resources, Inc.
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Sacramento, CA 95814

On Behalf of the:

Yuba River Fisheries Technical Working Group

Participating Agencies/Organizations Include:

Yuba County Water Agency, Pacific Gas & Electric Company, U.S. Fish and Wildlife Service, California Department of Fish and Game, National Marine Fisheries Service, South Yuba River Citizens League, and Friends of the River

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Type of Organization: S Corporation

Tax Status: Current

Tax Identification Number: 68-0384309

April 16, 1999

Executive Summary

The proposed project is being submitted by Surface Water Resources, Inc. (SWRI) on behalf of the Yuba River Fisheries Technical Working Group (YRFTWG). The project involves the development of a local-level, multi-agency, consensus-based implementation plan (Implementation Plan) to direct the near-term implementation of prioritized Yuba River anadromous fish habitat enhancement/restoration actions and studies. No such plan has been developed to date for the Yuba River. Completion of this proposed project will assist CALFED with numerous ERP goals, objectives, and actions. In particular, it will facilitate achieving CALFED's Strategic Plan objective of working with stakeholders in local watersheds and communities to develop local implementation plans that will effectively facilitate restoring processes and habitats that benefit priority fish species, including chinook salmon and steelhead. Although submitted under the topic area of Habitat Restoration: Channels, Floodplains, and Marshes, this project has linkages to CALFED topic areas of Watershed Stewardship and Improved Fish Management/Hatchery Operations.

The project's primary ecological/biological objectives include:

- ▶ developing a detailed implementation plan providing the conceptual framework and process that will guide the refinement, evaluation, prioritization, implementation, monitoring, and post-monitoring revision of ERP actions, as well as actions proposed by other agencies, and newly developed actions;
- ▶ facilitating implementation of prioritized Yuba River enhancement/restoration actions and studies leading to the recovery of the lower river's fall-run/late-fall-run and spring-run chinook salmon, steelhead, and other anadromous fish populations; and
- ▶ structuring the implementation of near-term actions and studies in a manner that promotes effective recovery of chinook salmon and steelhead populations, while increasing knowledge pertaining to how key watershed and river structures, processes, operations, and related factors work individually and collectively to influence anadromous fish habitat and populations within the lower river.

Implementation of actions and studies refined and prioritized under this project will protect, enhance, and restore Yuba River aquatic and riparian habitats, the key processes that create and maintain these habitats, and the anadromous fish species that use such habitats (particularly chinook salmon and steelhead), while increasing our understanding of ecosystem structure and function. This project also will benefit other anadromous species, including green and white sturgeon, American shad, striped bass, and Pacific lamprey, as well as native resident fish species. Priority habitats to be benefited include essential and freshwater fish habitats, riparian habitats, and main-channel and side-channel riverine aquatic habitats. Development of a successful model for local involvement of diverse interests, use of a technical working group to refine, evaluate, and prioritize actions for near-term implementation while maintaining a long-term watershed perspective, arranging cost-sharing agreements to facilitate adequate funding, and effective monitoring and adaptive management for the Yuba River, will benefit restoration and planning efforts being undertaken in other areas, thereby facilitating more rapid and effective ecosystem restoration and watershed planning elsewhere in the Bay-Delta system.

The proposed project will not conduct field monitoring and data collection, but rather will guide monitoring and data collection for prioritized actions and studies upon their implementation. An "Ecological/Biological Monitoring and Methods Plan" will constitute a section of the Implementation Plan. The field-monitoring component of this section will identify monitoring objectives, hypotheses to be addressed (defined in the conceptual model, also included in the Implementation Plan), and indicators (i.e., parameters) to be monitored. The Implementation Plan will provide significant additional guidance pertaining to evaluation of action and study success (e.g., use of performance standards), evaluating and interpreting monitoring findings, and reporting mechanisms (e.g., frequency, content, format, and recipients). Hence, the monitoring and methods section of the Implementation Plan will provide guidance

with regard to the use of monitoring data to address: 1) objectives, questions, and hypotheses associated with each action/study; and 2) action/study success; and 3) improvements in ecosystem health and function, as actions are implemented. Action- and study-specific experimental designs, specific sampling and data-collection techniques, and specific techniques to manage, analyze, and evaluate monitoring data will be developed (under separate projects) by the parties that will be implementing actions and conducting studies prioritized by this project.

The proposed project would provide third-party benefits to agencies/organizations involved in management and restoration of fishery resources in other watersheds, anglers, and others recreating along the Yuba River. A secondary benefit of the project is that the conceptual model and prioritized actions developed as part of the Implementation Plan will provide key information for the development of a watershed management plan. Work conducted under this project would both complement and benefit from work currently being performed in the upper Yuba River watershed by the Yuba Watershed Council, a 26-member stakeholder group whose mandate is to improve watershed stewardship. Benefits to other ecosystem restoration programs include the USFWS's Anadromous Fish Restoration Program (AFRP) and CDFG's fishery management plans for the Yuba River. No adverse third-party impacts have been identified for this project.

The project will be completed over a two-year period. The total cost of the project is **\$221,100**. At a meeting held on April 13, 1999, the Yuba County Water Agency's Board of Directors approved the project proponent's request for a **\$50,000** local cost-share in support of this project. In-kind services will be provided by staff from each of the YRFTWG participating agencies/organizations to attend bi-monthly planning meetings and four public meetings, coordinate work activities, and develop and/or review task-specific work products. Consequently, the total amount of funding requested from CALFED is **\$171,100**.

The core technical team for the project will be comprised of the YRFTWG participants, including: *Gary Taylor*- Branch Chief, Energy and Instream Flow, *Michael Morse*-Senior Fish and Wildlife Biologist, Energy and Instream Flow, *Carl Mesick*-Habitat Restoration Coordinator, and *Craig Fleming*-Fisheries Biologist of the U.S. Fish and Wildlife Service; *John Nelson*-Environmental Specialist IV, Sacramento Valley-Central Sierra Region and *Bill Snider*-Stream Evaluation Program Leader of the California Department of Fish and Game; *Karl Halupka*-Fisheries Biologist for the National Marine Fisheries Service; *William Mitchell*-Fisheries Biologist, Jones and Stokes Associates, on behalf of YCWA; Dr. Michael Bryan, Senior Fishery Biologist/Water Quality Specialist, SWRI; *Craig Seltenrich*-Aquatic/Fisheries Biologist for Pacific Gas & Electric Company; *Shawn Garvey*-Executive Director of the South Yuba River Citizens League; and *Jen Carville*-Hydro-policy Advocate for Friends of the River.

The YRFTWG Team will be led by Dr. Michael Bryan of Surface Water Resources, Inc. (SWRI). Dr. Bryan has 13 years of combined research and consulting experience addressing how physical, chemical, and biological characteristics of aquatic habitats affect fish and other aquatic biota. He was appointed to the Lower Sacramento River and Delta Tributaries Technical Team, as part of the Anadromous Fish Restoration Program of the Central Valley Project Improvement Act. As part of this team, Dr. Bryan developed technical reports outlining the key factors that are currently limiting chinook salmon and steelhead populations in the lower Yuba and American rivers. Mr. Paul Bratovich, also of SWRI, will provide additional technical fisheries expertise. His 16 years of local experience includes regulatory and technical consultations with the California Department of Fish and Game, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and other agencies concerning flow-habitat relationships, habitat restoration, population dynamics, endangered species, and strategic water planning.

Project Description

Overview and Linkages: The proposed project involves the development of a local-level, multi-agency, consensus-based implementation plan (Implementation Plan) to direct the near-term implementation of prioritized Yuba River anadromous fish habitat enhancement/restoration actions and studies. No such plan has been developed to date for the Yuba River. Completion of this proposed project will facilitate achieving CALFED's Strategic Plan objective of working with stakeholders in local watersheds and communities to develop local implementation plans that will effectively facilitate restoring processes and habitats that benefit priority fish species, including chinook salmon and steelhead. Although submitted under the topic area of Habitat Restoration: Channels, Floodplains, and Marshes, this project has linkages to CALFED topic areas of Watershed Stewardship and Improved Fish Management/Hatchery Operations.

Project Location. The project site is the lower Yuba River, defined as the 24-mile reach between Englebright Dam and the confluence with the Feather River. **Figure 1** is a regional map showing the location of the lower Yuba River within Yuba and Nevada counties, and key watershed elements (e.g., dams, reservoirs, diversions, and tributaries) that affect fishery habitat conditions in the lower Yuba River.

Proposed Scope-of-Work - General Approach. The YRFTWG will serve as a technical "steering committee" to guide development of the Implementation Plan. Dr. Michael Bryan of SWRI will serve as project manager and will prepare, or coordinate the preparation of, all draft work products associated with development of the Implementation Plan. These draft work products will be distributed to the YRFTWG participants for review and comment at the group's bi-monthly meetings. YRFTWG participants have already discussed and acknowledged that universal agreement on all enhancement/restoration actions and studies prioritized for implementation (i.e., specific components of the plan) will not always be possible, nor essential to meet the broad goals of the agencies and stakeholders participating in the YRFTWG (see p. 15 of this proposal for a list of participants). Consensus building will largely be accomplished through cooperative development of a detailed conceptual model, which will provide a framework to guide other work activities, and sound protocols for technically refining, evaluating, and prioritizing proposed actions and studies. By first reaching consensus among YRFTWG participants on the conceptual model and evaluation and prioritization protocols, action- or study-specific disagreements will be minimized. Specific technical disagreements among YRFTWG participants that cannot be resolved through this consensus-building process will be resolved by expressing multiple views (of YRFTWG participants and other technical experts) in the Implementation Plan. All YRFTWG participants have agreed, *a priori*, to support the development and use of the Implementation Plan as the best mechanism for achieving their specific and shared goals associated with lower Yuba River fishery enhancement and restoration. CALFED and the U.S. Army Corps of Engineers (Corps) have been invited to participate in the YRFTWG and, therefore, would have direct input into plan development through its YRFTWG representative. Opportunities for the general public to have input into plan development are discussed in other sections of this proposal. The Implementation Plan will be developed by completing the tasks defined below.

Task 1: Develop a detailed conceptual model for the Yuba River aquatic ecosystem. A comprehensive technical review of available Yuba River fishery, ecological, and hydrologic information will be performed. Based on this technical information, a conceptual model (similar to the one developed for the ERP) will be developed specifically for the Yuba River aquatic ecosystem. Development of the model entails using a detailed framework of aquatic ecosystem processes (e.g., streamflows; coarse sediment supply; stream meander; establishment and maintenance of side-channel habitats, riparian vegetation, and instream woody debris) and watershed elements (e.g., dams, reservoirs, fish ladders, diversions, tributaries) to define all known interactions between instream flows and temperatures, physical habitat, and anadromous fish populations, particularly salmonid populations. All available and relevant information pertaining to the Yuba River will then be used to either support our understanding of the ecosystem processes or to identify testable hypotheses where uncertainties exist. The conceptual model will identify

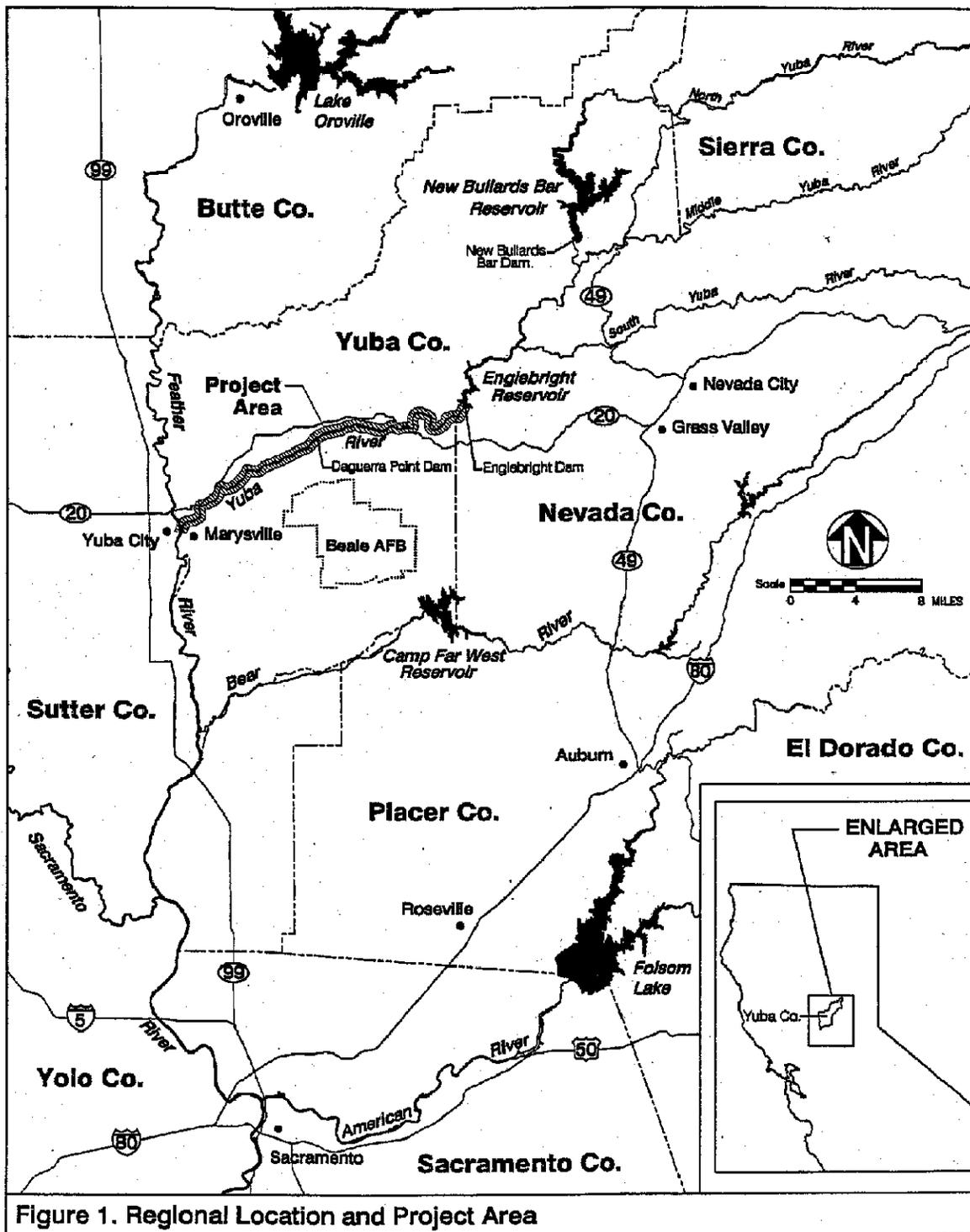


Figure 1. Regional Location and Project Area

testable hypotheses related to key ecosystem processes, habitat conditions, stressors, and fish population trends and behavior, including habitat use. YRFTWG participants have agreed to share their available information. The framework of ecosystem issues would be based on ERP and CMARP models and expanded to include issues generated by YRFTWG participants. The YRFTWG participants will generate the hypotheses, all of which will be included in the model, particularly where technical disagreements occur. By providing an improved understanding of the Yuba River aquatic ecosystem and testable hypotheses, the conceptual model will create a framework to guide the refinement, evaluation, and prioritization of restoration actions proposed by CALFED in its Ecosystem Restoration Program Plan (ERPP), and other agencies (i.e., CDFG, USFWS, and YCWA), for implementation. It also will summarize the known information about the Yuba River aquatic ecosystem, thereby effectively identifying critical data gaps where future research studies may be focused. Development and use of a conceptual model in this fashion is consistent with CALFED's Strategic Plan. **Deliverable: Yuba River conceptual model.**

Task 2: Public outreach and local involvement. Public outreach will be conducted at key stages of the project, and will be an important part of developing a functional Implementation Plan. All agencies and parties invited to participate in the YRFTWG will have direct input into plan development via their YRFTWG representatives. A "Public Outreach and Local Involvement" section will be included in the Implementation Plan, thereby fulfilling the CALFED requirement of preparing a public outreach plan. This section of the Implementation Plan will address how the public, interested/affected property owners, local governments, and local watershed groups will be informed about the project, and how they will be able to provide input. The local public will initially be notified of the project via articles in appropriate newspapers and other announcements. Four public meetings will be held over the course of the project to obtain public input on the following: 1) purpose and scope of the project; 2) the conceptual model and its use; 3) action evaluation and prioritization criteria and protocols; and 4) draft Implementation Plan. Public outreach information, work products, and the draft Implementation Plan will be periodically posted on SWRI's Internet home page to further facilitate public involvement in the project. **Deliverable: Public outreach plan, written as an integral component of the Implementation Plan.**

Task 3: Technically refine, evaluate, and prioritize anadromous fish enhancement/restoration actions proposed for the Yuba River. The detailed conceptual model developed under Task #1 (above), along with ongoing restoration planning and implementation efforts, will provide a framework within which anadromous fish enhancement/restoration actions proposed by CALFED in its ERPP, as well as other agencies (i.e., CDFG, USFWS, and YCWA), can be refined, re-evaluated, and prioritized for implementation. The adaptive management principles adopted by CALFED necessitate that its proposed actions are provisional and thus are in need of further refinement and prioritization prior to implementation. As part of this task, a series of technical evaluation criteria will be developed and used in a structured manner to objectively review and refine currently proposed actions and studies. Based on the conceptual model, new actions and/or studies will be developed, as warranted. Next, a protocol that uses a set of "prioritization" criteria will be developed and applied to all refined actions/studies to identify a subset of actions/studies endorsed by the YRFTWG for near-term implementation. YRFTWG participants will participate in the development and application of the evaluation and prioritization criteria and protocols, with other resource specialists (e.g., hydrologic engineers, geomorphologists, riparian specialists) invited to participate, as warranted. Implementation schedule is important because knowledge gained from early efforts will play a key role in guiding implementation of subsequent actions and studies. Consensus will be developed among YRFTWG participants regarding the set of hierarchical rules and prioritization criteria to be used, and how they are to be applied within the framework defined by the conceptual model developed under Task 1 (above) to guide decision-making with regard to the sequencing of actions and studies over time. Actions affecting instream flows and temperatures, sediment supply, and riverine aquatic habitats in ways that will simultaneously benefit chinook salmon, steelhead and other species will receive the highest priority. Adequate consideration also will be given to pilot projects and studies designed to further investigate unfavorable conditions for which causes and potential solutions

remain uncertain. CALFED's "decision rules" (Strategic Plan, p. 20-21) will provide a starting point for developing an effective protocol for prioritizing actions and studies for implementation. This work will be closely coordinated with CALFED's Comprehensive Monitoring, Assessment and Research Program (CMARP). **Deliverable: Evaluation and prioritization criteria and protocols and list of prioritized actions and studies.**

Task 4: Plan preparation. The Implementation Plan will include the following sections: 1) Introduction; 2) Public Outreach and Local Involvement Plan; 3) Yuba River Conceptual Model; 4) Action Evaluation and Prioritization Criteria and Protocols; 5) Projects, Pilot Projects, and Studies Prioritized for Near-Term Implementation; 6) Funding Mechanisms for Implementation; 7) Ecological/Biological Monitoring and Methods Plan; 8) Adaptive Management; and 9) Literature Cited. The conceptual model, public outreach plan, and evaluation and prioritization criteria and protocols developed under Tasks 1-3 will be incorporated directly into the Implementation Plan. Section 5 of the Plan will clearly describe each of the refined actions/studies prioritized for near-term implementation. Actions will focus on reducing key stressors (e.g., entrainment at diversions, dam passage, gravel mining, predation, and stranding) and enhancing key ecosystem processes (e.g., instream flows and temperatures, coarse sediment supply, stream meander) and riverine habitat conditions to benefit chinook salmon and steelhead, whereas studies will focus on filling critical data gaps. Section 6 will identify willing cost-sharing partners for each prioritized action/study to expedite implementation of prioritized actions. Section 7 will outline the approach to all data collection aspects of the project, including those associated with development of the conceptual model, action evaluation and prioritization criteria and protocols, and field monitoring and data collection. The field-monitoring component of this section will include objectives of monitoring; hypotheses (from the conceptual model) to be addressed; indicators (i.e., parameters) to be monitored; and mechanisms and formats for reporting monitoring findings. As such, it will constitute a "programmatic-level" monitoring and methods plan that will provide guidance to parties that will ultimately implement an action or conduct a study. Consequently, detailed monitoring methods, locations, frequencies, and data analysis procedures will be developed by parties funded (subsequent to this project) to implement/conduct prioritized actions/studies. Section 8 will discuss how adaptive management will be conducted to modify the Implementation Plan in the future as our understanding of the Yuba River ecosystem improves and as conditions change due to implementation of initial actions. It also will define how treating the Plan as a "living document" will prevent it from becoming outdated, thereby maintaining its utility over time. **Deliverable: Implementation Plan.**

Task 5. Project presentations. Oral presentations on the project will be given by SWRI's project manager and YRFTWG participants at public workshops and at CALFED annual meetings, as necessary.

Task 6: Preparation of quarterly progress reports and final project report. SWRI's project manager will prepare quarterly progress reports to be submitted to CALFED by the 10th day of the month following the end of each quarter. Progress reports will include project financial information, and will indicate the percentage of each task completed, deliverables produced, problems and delays encountered, and a description of any amendments or modifications to the contract. A final project report also will be prepared and submitted to CALFED. **Deliverables: Seven quarterly progress reports and a final project report.**

Task 7: Project management. Activities will include project team coordination, correspondence, review of project deliverables, budget and schedule tracking, and other duties to coordinate/administer the project.

Project Schedule. The proposed project will be completed over a two-year period, beginning at the time a contract is issued. Tasks 1 and 3 will be completed in the first year, with Task 4 initiated in the first year, but completed in the second year. Tasks 2 and 5-7 will occur throughout both years of the project. If only a portion of the project were to be funded at this time, Tasks 1-3 are recommended. Completion of Task 4 (Plan Preparation) could effectively occur under subsequent funding, once Tasks 1-3 were completed.

Ecological/Biological Benefits

Purpose and Need. The lower Yuba River supports fall-run/late-fall-run and spring-run chinook salmon, steelhead, American shad, striped bass, green and white sturgeon, and Pacific lamprey. It supports the largest remaining natural run of steelhead in the Central Valley, and an annual-average, naturally spawning run of fall-run chinook salmon of about 13,000 adult fish. Although these salmonids are listed or proposed for listing under the federal ESA, although the Yuba River offers potential for enhancing and restoring these native salmonids, and although numerous "fishery management plans" have been written for the lower Yuba River over the past decade by CDFG, USFWS, YCWA and now CALFED, few enhancement/restoration actions or studies have actually been implemented to date. Institutional conflicts, the absence of an integrated, consensus-based approach to fishery enhancement efforts, and lack of a local-level, multi-agency implementation plan are the primary reasons why progress to enhance and restore lower Yuba River anadromous fishery resources has been minimal.

In an effort to improve and expedite lower Yuba River anadromous fish enhancement and restoration, the YRFTWG was convened in March 1998. The YRFTWG's goal is to improve lower Yuba River fishery resources in a manner consistent with near- and long-term efforts to improve watershed management as a means of restoring Yuba River ecosystems. The YRFTWG provides a forum within which the fishery resource agencies (i.e., California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS)), water purveyors and users (i.e., YCWA and PG&E), and environmental groups (i.e., South Yuba River Citizens League (SYRCL) and Friends of the River (FOR)) can share technical information and work cooperatively with each other and with other stakeholders (e.g., CALFED, Corps, landowners, public) to achieve both independent and shared goals.

Project Objectives. The proposed project will achieve the YRFTWG goal stated above, and will aid CALFED in its stated objective to work with stakeholders in local watersheds and communities to develop local implementation plans. The primary ecological/biological objectives for the project include:

- ▶ developing a detailed implementation plan providing the conceptual framework and process that will guide the refinement, evaluation, prioritization, implementation, monitoring, and post-monitoring revision of ERP actions, as well as actions proposed by other agencies, and newly developed actions;
- ▶ facilitating implementation of prioritized Yuba River enhancement/restoration actions and studies leading to the enhancement of the lower river's anadromous fish populations; and
- ▶ structuring the implementation of near-term actions and studies in a manner that promotes effective recovery of chinook salmon and steelhead populations, while increasing knowledge pertaining to how key watershed and river structures, processes, operations, and related factors work individually and collectively to influence anadromous fish habitat and populations within the lower river.

Project Focus. The project will focus on chinook salmon and steelhead, with secondary emphasis on other anadromous species, particularly green sturgeon, American shad and striped bass. Key stressors to be addressed for these salmonids include water diversions, dams, stranding, gravel mining, and predation. Primary ecosystem processes/habitats to be addressed include hydrology; instream flows and temperatures; coarse sediment supply; stream meander and channel forming processes; riparian and riverine aquatic habitats, particularly chinook salmon and steelhead spawning and rearing habitats; and habitats immediately adjacent to diversion structures that may impede immigration and emigration.

Primary Ecological Benefits. Implementation of actions and studies refined and prioritized under this project will protect, enhance, and restore Yuba River aquatic and riparian habitats, the key processes that create and maintain these habitats, and the anadromous fish species that use such habitats (particularly chinook salmon and steelhead), while increasing our understanding of ecosystem structure and function. This project also will benefit other anadromous species, including green and white sturgeon, American shad,

striped bass, and Pacific lamprey, as well as native resident fish species. Priority habitats to be benefited include essential and freshwater fish habitats, riparian habitats, and main-channel and side-channel riverine aquatic habitats.

Other Benefits. The proposed project would provide third-party benefits to agencies/organizations involved in management and restoration of fishery resources in other watersheds, anglers, and others recreating along the Yuba River. As a secondary benefit, the conceptual model and prioritized actions developed as part of the Implementation Plan will provide key information for the development of a watershed management plan. Benefits to other ecosystem restoration programs include the USFWS's Anadromous Fish Restoration Program (AFRP) and CDFG's fishery management plans for the Yuba River.

Scientific Hypotheses/Questions. The Implementation Plan's conceptual model will clearly relate one or more testable hypotheses to each restoration action and study, and will define the indicators to be monitored to evaluate these hypotheses. The goal will be to determine the success of actions/studies implemented while improving understanding of fish-habitat relationships, stressors, and ecosystem processes influencing anadromous fish populations in the lower Yuba River.

Project Durability. The Implementation Plan developed could be used indefinitely for directing lower Yuba River anadromous fish enhancement/restoration. Because the Implementation Plan seeks to enhance/restore multiple anadromous fish species, it will prioritize permanent modifications to key factors that adversely affect multiple species. An adaptive management approach will be employed because: 1) implementation of restoration actions will occur over a long period of time; 2) understanding of the Yuba River aquatic ecosystem will change over time; and 3) conditions of priority habitats and species will change as restoration actions are implemented. The Implementation Plan will provide flexibility by being a "living document" based on the principle of adaptive management. It will be periodically updated based on monitoring information acquired following implementation of initial restoration actions, and other new information (institutional and scientific) as it becomes available. In this way, the Plan will become more focused on critical issues (with less scientific uncertainty) as additional knowledge is acquired, thereby improving the process of lower Yuba River anadromous fish restoration and management over time.

Linkages - Past and Ongoing Projects/Initiatives. Many actions developed under past projects have not been implemented due to lack of coordination and consensus-building among stakeholders and the resource agencies, and continued uncertainty regarding the effectiveness of proposed actions. This project will refine, evaluate, and prioritize actions proposed by past projects, along with those proposed by CALFED's ERPP, and will facilitate and guide their implementation in a consensus-based manner. Overlap of actions and studies proposed by CDFG's fishery management plans, USFWS's AFRP, YCWA, and CALFED's ERPP will be clearly identified in the Plan. Finally, work conducted under this project would both complement and benefit from work currently being performed in the upper Yuba River watershed by the Yuba Watershed Council, a 26-member stakeholder group who's mandate is to improve watershed stewardship.

Future ERP targets, actions, objectives, and goals. The proposed project will facilitate implementation of the following CALFED targets and actions (ERPP, Volume 2, pg 293-301):

- ▶ Supplement flows in the Yuba River to improve conditions for all runs of chinook salmon and steelhead (Central Valley Stream Flows, Target (T) 3 and Programmatic Action (PA) 3A);
- ▶ Evaluate and maintain adequate spawning gravel quality (Coarse Sediment Supply, T1 and PA 1B);
- ▶ Acquire and improve stream meander zones (Stream Meander, T1, PA 1A, 1B, and 1C);
- ▶ Evaluate, restore, and manage Yuba River flooding into its floodplain (Natural Floodplain and Flood Processes, T1, PA 1A, 1B, 1C, and 1E);

- ▶ Evaluate and develop programs to provide adequate temperatures for anadromous fish in the Yuba River (Central Valley Stream Temperatures, T1, PA 1C, 1E, and 1F);
- ▶ Evaluate and implement riparian and riverine aquatic habitat restoration actions along the Yuba River (Riparian and Riverine Aquatic Habitats, T1, PA 1A and 1B);
- ▶ Maintain and improve freshwater fish habitat (Freshwater Fish Habitat, Essential Fish Habitat, T1);
- ▶ Improve juvenile anadromous fish survival in the Yuba River through the use of fish screens (Reducing of Eliminating Stressors, T1, PA 1A and 1B);
- ▶ Evaluate and implement programs to increase anadromous fish passage below Englebright Dam and evaluate options to re-introduce spring-run chinook salmon and steelhead above Englebright Dam (Dams and Other Structures, T1, PA 1A, 1B, and PA 1C, and Stage 1 Actions 1 & 2).

By creating the framework and process that will guide the refinement, evaluation, prioritization, implementation, monitoring, and revision of the ERP actions cited above, the proposed project will aid CALFED in meeting the following strategic goals and objectives (Strategic Plan, Table 5-1):

- ▶ Restore populations of all runs of chinook salmon and steelhead (Goal 1, Objectives 3, 4, 5, and 6);
- ▶ Rehabilitate natural processes (e.g., flows, temperatures, floodplain dynamics, and sedimentation patterns) to support aquatic & associated terrestrial biotic communities (Goal 2, Obj. 4, 5, 6, 7, & 8);
- ▶ Restore and protect riparian and aquatic habitat, including freshwater and essential fish habitat, in the Central Valley and its rivers (Goal 4, Objective 2, Sub-objectives 8, 9, and 10); and
- ▶ Reduce stressors to anadromous fish species, such as entrainment, habitat loss and degradation, and predation (Stressor Reduction Objectives 1, 2, 3, 4, 6, and 21).

Legal Obligations/Agency Mandates. The YCWA has numerous legal obligations and mandates associated with reservoir management, instream flows, power production, flood control, and water supply. PG&E has both legal obligations and mandates associated with power production. Finally, each of the fishery agencies participating on the YRFTWG have their own mandates regarding management of Yuba River fishery resources. Facilitated by bi-monthly meetings of the YRFTWG, all such legal obligations and agency mandates will be addressed as part of developing the Implementation Plan.

System-wide Ecosystem Benefits. Populations of Yuba River chinook salmon and steelhead will be increased over time by facilitating enhancement and restoration of key Yuba River ecosystem elements and processes, system operations, and riparian and aquatic habitats. Increasing Yuba River salmonid populations will contribute to the overall recovery of these salmonids within the Sacramento River Basin and Bay-Delta. Finally, this project will provide an effective, early evaluation of CALFED's implementation strategy. Development of a successful model for local involvement of diverse interests, use of a technical working group to refine, evaluate, and prioritize actions for near-term implementation while maintaining a long-term watershed perspective, arranging cost-sharing agreements to facilitate adequate funding, and effective monitoring and adaptive management for the Yuba River, will benefit restoration and planning efforts being undertaken in other areas, thereby facilitating more rapid and effective ecosystem restoration and watershed planning elsewhere in the Bay-Delta system.

Compatibility with Non-Ecosystem Objectives. By definition, the proposed project will work to maximize compatibility of lower Yuba River anadromous fish restoration with other CALFED objectives for water quality and levee system integrity, as well as water supply, power production, and flood control. The proposed project will provide indirect benefits to other CALFED Programs, including Water Use Efficiency, Water Transfers, and Watershed Management, by reducing and resolving conflicts associated with watershed management and the availability and reliability of water supplies for supporting multiple beneficial uses within the Yuba River system and the Bay-Delta.

Technical Feasibility and Timing

Primary Alternatives. The primary alternative to the proposed project is to assume that Yuba River fishery enhancement/restoration actions proposed to date by CALFED and others will be effectively implemented over time without the need for a detailed implementation plan supported by all fishery agencies and local interested/affected parties. This alternative has proven to be largely ineffective for other agencies/parties (i.e., CDFG, USFWS, and YCWA) that have previously proposed enhancement/restoration actions for the lower Yuba River. No other alternatives, that would provide similar results to that of the proposed project, have been identified.

Compliance with Applicable Environmental Laws, Approvals, and Requirements. Environmental review of the Implementation Plan would not be required under the California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA). However, CEQA and/or NEPA environmental review and documentation may be required for specific restoration actions prior to their implementation (e.g., actions associated with dam modifications/removal and screening of diversion facilities). Similarly, approval of incidental take permits under Section 2081 of the California ESA and associated memoranda of understanding and federal take permits would not be required until actions/studies are to be implemented. Hence, no CEQA or NEPA documents or permits would be required to develop the proposed Implementation Plan.

Project Constraints. Because the YRFTWG has defined development of an implementation plan for lower Yuba River anadromous fish habitat restoration as one of its primary objectives, participants of the YRFTWG are unanimously in support of developing the proposed Implementation Plan. Moreover, development of a local-level, multi-agency implementation plan is consistent with CALFED's Strategic Plan. Hence, no inherent constraints to completing the project have been identified.

Monitoring and Data Collection Methodology

Ecological/Biological Objectives. The proposed project will guide the refinement, evaluation, prioritization, implementation, and monitoring of fishery enhancement/restoration actions and studies proposed for the Yuba River by CALFED's ERP, actions previously proposed by other agencies (i.e., CDFG, USFWS, and YCWA), and new actions developed under the proposed project. Subsequent implementation of the prioritized actions and studies (under separate projects) will protect, enhance, and restore Yuba River aquatic and riparian habitats, the key processes that create and maintain these habitats, and the anadromous fish species that use such habitats (particularly chinook salmon and steelhead), while increasing our understanding of ecosystem structure and function. A conceptual model of the Yuba River aquatic ecosystem will be developed under this project to: 1) demonstrate current understanding of how key watershed elements, processes, and system (i.e., dam and reservoir) operations affect lower Yuba River riparian and aquatic habitats and anadromous fish populations; 2) identify data gaps and areas of scientific uncertainty in need of additional research; and 3) provide a framework to guide the technical refinement, evaluation, and prioritization of proposed actions and studies for near-term implementation. Examples of questions and hypotheses that will be included in the conceptual model, to be addressed by subsequent action and study implementation, are provided in **Table 1**.

Approach to Monitoring and Data Collection. The proposed project will not conduct monitoring and data collection, but rather will guide monitoring and data collection for prioritized actions and studies upon their implementation. Action- and study-specific experimental designs and specific sampling and data-collection techniques will be developed (under separate projects) by the parties that will be implementing actions and conducting studies prioritized by this project. However, an "Ecological/Biological Monitoring and Methods Plan" will constitute section 7 of the Implementation Plan. The field-monitoring component of this section will include monitoring objectives, hypotheses (stated in the conceptual model) to be addressed, and indicators (i.e., parameters) to be monitored. Development of these "programmatic-level" monitoring and data collection guidelines will be coordinated with ongoing and planned monitoring efforts by CDFG, USFWS, CMARP and other parties through review and input from YRFTWG participants.

Data Evaluation Approach. Specific techniques to manage, analyze, and evaluate monitoring data also will be developed (under separate projects) by the parties that will be implementing actions and conducting studies prioritized by this project. However, in addition to the monitoring and data-collection factors identified above, section 7 of the Implementation Plan will provide significant additional guidance pertaining to evaluating action and study success (e.g., use of performance standards), evaluating and interpreting monitoring findings, and reporting mechanisms (e.g., frequency, content, format, and recipients). Hence, the Monitoring and Methods Plan will conceptually define how monitoring data collected will be used to address: 1) objectives, questions, and hypotheses associated with each action/study; 2) whether an action met its intended performance standard(s); and 3) improvements in ecosystem health and function, as actions are implemented.

As part of the adaptive management process, findings from the monitoring and evaluations conducted will be assessed by the YRFTWG to provide an improved technical basis from which to recommend modifications to future actions, as necessary, and to determine the success of the initial projects in meeting their defined objectives. In addition to expertise provided by YRFTWG participants, outside expertise in riparian habitats, geomorphology, hydrology, and other disciplines will be sought, as needed, to fully interpret monitoring findings, and to provide additional input into the action/study refinement, evaluation, prioritization, implementation, monitoring, and reporting aspects of the project.

Table 1. Example Monitoring and Data Collection Information to be Addressed in the Implementation Plan.

Biological/Ecological Objectives			
Question/Hypothesis to be Evaluated	Monitoring Parameter(s) and Data Collection Approach	Data Evaluation Approach	Comments/Data Priority
<p>Is it feasible to replace Daguerre Point Dam (DPD) with alternative diversion structures to improve adult immigration and juvenile emigration past this structure?</p> <p>H₀: There are no feasible alternative diversion structures that could reasonably improve anadromous fish passage of DPD.</p> <p>H_A: There is one, or more, alternative diversion structures that could reasonably improve anadromous fish passage of DPD.</p>	<p>As part of the initial feasibility study undertaken, assess fish passage at the existing facility under different hydraulic conditions to evaluate the nature of the current passage problem, and to provide technical information to aid in the design of alternative diversion structures.</p>	<p>To be fully developed by the party undertaking the initial feasibility study.</p>	<p>ERPP Stage 1 Action (ERPP Volume II, Page 301)</p>
<p>Is it feasible to reintroduce chinook salmon (particularly spring-run) and steelhead upstream of Englebright Dam?</p> <p>H₀: There are no feasible mechanisms by which to effectively reintroduce spring-run chinook salmon and steelhead upstream of Englebright Dam.</p> <p>H_A: There is one, or more, feasible mechanisms by which to effectively reintroduce spring-run chinook salmon and steelhead upstream of Englebright Dam.</p>	<p>As part of the initial feasibility study undertaken, investigate the success of similar efforts on the Columbia River, and elsewhere. Other issues to be addressed may include physical logistics for the site, available habitat upstream of the dam, identification of potential adverse impacts to land/property owners, potential direct and indirect impacts (beneficial and adverse) to other resources and beneficial uses of the current dam and system.</p>	<p>To be fully developed by the party undertaking the initial feasibility study.</p>	<p>ERPP Stage 1 Action (ERPP Volume II, Page 301)</p>
<p>Will adult and juvenile salmonids use restored side-channel habitats along the Yuba River?</p> <p>H₀: Salmonids will not use restored side-channel habitats for spawning or rearing.</p> <p>H_A: Salmonids will use restored side-channel habitats for spawning and/or rearing.</p>	<p>Perform a pilot project to restore side-channel habitats in one or more locations. Field surveys and/or aerial photography could be employed to document post-restoration use by spawning adults. Screw trapping or other methods could be used to assess juvenile use of restored habitats.</p>	<p>To be developed by the party undertaking the pilot project.</p>	<p>ERPP Programmatic Action 1B (ERPP Volume II, Page 299)</p>

Biological/Ecological Objectives

Question/Hypothesis to be Evaluated	Monitoring Parameter(s) and Data Collection Approach	Data Evaluation Approach	Comments/Data Priority
<p>Will an improved fish screen at the Hallwood-Cordua water diversion improve the survival of juvenile anadromous fish in the lower Yuba River?</p> <p>H_0: An improved fish screen at the Hallwood-Cordua water diversion will not significantly reduce juvenile salmonid entrainment and associated mortality at this facility.</p> <p>H_A: An improved fish screen at the Hallwood-Cordua water diversion will significantly reduce juvenile salmonid entrainment and associated mortality at this facility.</p>	<p>Following implementation of improvements, continuously monitor entrainment at the diversion during peak salmonid emigration periods of the year. Estimate mortality rates for juvenile salmonid emigrants that become entrained at the facility.</p>	<p>Compare post-improvement rates of entrainment to those recorded historically at the site for the same periods of the year. Comparisons may require use of spawning escapement as a co-variate to account for different numbers of emigrants across years. Additional specifics pertaining to data evaluation would be developed by the party implementing the action and monitoring.</p>	<p>ERPP Programmatic Action 1A (ERPP Volume II, Page 300)</p>

Local Involvement

County Notification. Letters addressed to Mr. Tim Manning, Planning Director for Yuba County, and Mr. Mark Tomich, Planning Department for Nevada County, were mailed on April 14, 1999 to notify these County planning departments about the proposed project. A copy of each letter also was sent to the respective County Board of Supervisors on the same date.

Local Interested and Affected Parties. Discussions regarding this proposal have been held among the members of the YRFTWG at two recent meeting, the first held on March 17, 1999 and the second held on April 13, 1999. Representatives of YCWA, PG&E, CDFG, USFWS, NMFS, and SYRCL were in attendance at one or both of these meetings. As the proposal is being submitted on behalf of the YRFTWG, discussions held at these meetings were focused on refinement of the proposal, and the manner in which each member agency/organization would communicate its support for the project to CALFED. All agency/organization representatives participating on the YRFTWG have expressed their support for completing the work outlined in this proposal. Personal communications held with Jason Fanselau of the Corps and Steve Evans of FOR confirmed that both the Corps and FOR recognize the value of the proposed project, and how it could integrate well with their existing and planned programs and initiatives.

Public Outreach Plan. Public outreach will be conducted at key stages of the project, and will be an important part of developing a functional Implementation Plan. All agencies and parties invited to participate in the YRFTWG will have direct input into plan development via their YRFTWG representatives. A "Public Outreach and Local Involvement" section will be included in the Implementation Plan, thereby, fulfilling the CALFED requirement of preparing a public outreach plan. This section of the Implementation Plan will address how the public, interested/affected property owners, local governments, and local watershed groups will be informed about the project, and how they will be allowed to provide input. The local public will initially be notified of the project via articles in appropriate newspapers and other announcements. Four public meetings will be held over the course of the project to get public input on the following: 1) purpose and scope of the project; 2) the conceptual model and its use; 3) action evaluation and prioritization criteria and protocols; and 4) the draft Implementation Plan. Public outreach information, work products, and the draft Implementation Plan will be periodically posted on SWRI's Internet home page to further facilitate public involvement in the project.

Third Party Impacts. No adverse third-party impacts have been identified.

Cost

Budget. The total budget for preparing the Implementation Plan is **\$221,100**, with **\$171,100** of this total being requested from CALFED, and the other \$50,000 to be provided by a local sponsor. On behalf of the YRFTWG, Surface Water Resources, Inc. would be the contracting entity. Costs incurred by the fishery resource agencies, PG&E, and other agencies/organizations dedicating staff time to the YRFTWG and to various aspects of the proposed project (e.g., planning, technical review of work products, participation in meetings) would be contributed as in-kind services. Total project cost for completing each task is summarized below, with a detailed cost breakdown (CALFED funds only) provided in **Tables 2 and 3**.

Task 1:	Develop a Detailed Conceptual Model	\$25,500
Task 2:	Public Outreach Plan	\$27,100
Task 3:	Develop Evaluation and Prioritization Criteria and Protocols	\$46,700
Task 4:	Implementation Plan Preparation	\$68,300
Task 5:	Presentations	\$9,800
Task 6:	Quarterly and Final Reports	\$11,900
Task 7:	Project Management	
	Coordination/correspondence with Project Team Members	\$10,800
	Review of Project Deliverables	\$16,000
	Budget and Schedule Tracking	\$5,000
	Task Total	\$31,800
	TOTAL:	\$221,100

Schedule. The project would be completed over a two-year period according to the schedule provided below. The schedule provided is based on receipt of a contract from CALFED by or before October 1, 1999.

Task/Deliverable	Start/Completion Dates
Task 1: Develop a Detailed Conceptual Model	Oct 1, 1999-Mar 31, 2000
Task 2: Public Involvement	
Outreach Plan	Oct 1, 1999-Mar 31, 2000
Local Public Involvement	<i>ongoing throughout project</i>
Task 3: Develop Evaluation/Prioritization Criteria & Protocols	Jan 1, 2000-Sep 30, 2000
Task 4: Implementation Plan Preparation	
Draft	Jul 1, 2000-Mar 31, 2001
Final	September 30, 2001
Task 5: Presentations	<i>ongoing throughout project</i>
Task 6: Reports	
Quarterly	10 th day of month following each quarter
Final Report	Jul 1, 2001-Sep 30, 2001
Task 7: Project Management	<i>ongoing throughout project</i>

Because Task 1, the plan component of Task 2, and Task 3 will be completed in year 1, incremental funding of the project over the two-year period is possible. Funding for year 1 would facilitate completing all of Tasks 1 and 3, and the plan component of Task 2. Year 2 funding would facilitate completion of the project.

Table 2. Total Budget (CALFED funds only)

Phase/Task	Direct Labor Hours	Direct Salary and Benefits	Service Contracts	Material and Acquisition Costs	Misc. and Other Direct Costs	Overhead and Other Direct Costs*	Total Cost
<i>Task 1 - Develop Conceptual Model</i>	262	\$25,400			\$100		\$25,500
<i>Task 2 - Public Outreach/Local Involvement</i>	314	\$23,100			\$4,000		\$27,100
<i>Task 3 - Technical Review, Evaluation, and Refinement of Fish Enhancement/Restoration Actions and Develop Protocol to Prioritize Actions and Studies for Implementation</i>	268	\$25,600			\$100		\$25,700
<i>Task 4 - Plan Preparation</i>	528	\$46,850			\$450		\$47,300
<i>Task 5 - Project Presentations</i>	124	\$9,100			\$700		\$9,800
<i>Task 6 - Prepare Quarterly Progress Reports and Final Project Report</i>	138	\$11,850			\$50		\$11,900
<i>Task 7 - Project Management</i>	260	\$23,700			\$100		\$23,800
Total - (Tasks 1 - 7)	1,894	\$165,600			\$5,500		\$171,100
TOTAL (CALFED funds only)							\$171,100

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Table 3. Quarterly Budget

Phase/Task	Quarterly Budget Oct-Dec 1999	Quarterly Budget Jan-Mar 2000	Quarterly Budget Apr-Jun 2000	Quarterly Budget Jul-Sep 2000	Quarterly Budget Oct-Dec 2000	Quarterly Budget Jan-Mar 2001	Quarterly Budget Apr-June 2001	Quarterly Budget Jul-Sep 2001	Total Budget
<i>Task 1 - Develop Conceptual Model</i>	\$12,750	\$12,750							\$25,500
<i>Task 2 - Public Outreach/Local Involvement</i>	\$6,700	\$5,400	1,000	\$4,000	1,000	\$4,000	\$1,000	\$4,000	\$27,100
<i>Task 3 - Technical Review, Evaluation, and Refinement of Fish Enhancement/Restoration Actions and Develop Protocol to Prioritize Actions and Studies for Implementation</i>		\$4,000	\$16,850	\$4,850					\$25,700
<i>Task 4 - Plan Preparation</i>				\$10,660	\$12,660	\$8,660	\$8,660	\$8,660	\$47,300
<i>Task 5 - Project Presentations</i>		1,400	1,400	\$1,400	\$1,400	1,400	1,400	\$1,400	\$9,800
<i>Task 6 - Prepare Quarterly Progress Reports and Final Project Report</i>	\$1,200	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$4,700	\$11,900
<i>Task 7 - Project Management</i>	\$3,000	\$2,800	\$2,800	\$3,200	\$3,200	\$2,600	\$2,600	\$3,600	\$23,800
Total - Tasks 1 - 7	\$23,650	\$27,350	\$23,050	\$25,110	\$19,260	\$17,660	\$12,660	\$22,360	\$171,100

1-014590

1-014590

Cost-Sharing

At a meeting held on April 13, 1999, the YCWA's Board of Directors approved the project proponent's request for a \$50,000 local cost-share in support of this project. In-kind services will be provided by staff from each of the YRFTWG participating agencies/organizations to attend bi-monthly planning meetings and four public meetings, coordinate work activities, and develop and/or review task-specific work products. A description of cost-sharing, by task, is provided in **Table 4**.

Table 4. Cost sharing.

Task	YCWA Funding	CALFED Funding	Total Funding Required by Task
Task 1	--	\$25,500	\$25,500
Task 2	--	\$27,100	\$27,100
Task 3	\$21,000	\$25,700	\$46,700
Task 4	\$21,000	\$47,300	\$68,300
Task 5	--	\$9,800	\$9,800
Task 6	--	\$11,900	\$11,900
Task 7	8,000	\$23,800	\$31,800
Total Funding	\$50,000	\$171,100	\$221,100

Applicant Qualifications

Project Team. The YRFTWG Team will employ a consensus-based approach to complete the tasks outlined in the Project Description. The team will be led by Dr. Michael Bryan of SWRI. Outside experts in riparian habitats, geomorphology, restoration planning, hydrology, and other disciplines that are associated with the agencies/organizations participating on the YRFTWG also will provide in-kind services or, if necessary, will become sub-consultants to SWRI.

Individual Responsibilities. SWRI will be responsible for administrative and project management roles, and also will provide technical leadership on the project. SWRI will be responsible for sub-contracting with outside technical staff, as deemed necessary by the YRFTWG, to best complete the project work products. YRFTWG participants will be responsible for providing technical input on all aspects of the project, attending bi-monthly planning and 4 public outreach meetings, and providing detailed technical review and comments on all project work products. In short, the YRFTWG will act as a technical "steering committee" on the project.

Individual Qualifications. A brief description of expertise for key SWRI staff is provided below, along with their roles on the project. Also, the names, titles, and affiliations of all active YRFTWG participants are provided.

Michael Bryan, Ph.D. — Dr. Bryan has 13 years of combined research and consulting experience addressing how physical, chemical, and biological characteristics of aquatic habitats affect fish and other aquatic biota. He was appointed to the Lower Sacramento River and Delta Tributaries Technical Team, as part of the Anadromous Fish Restoration Program of the Central Valley Project Improvement Act (CVPIA). As part of this team, Dr. Bryan developed technical reports outlining the key factors that are currently limiting chinook salmon and steelhead populations in the lower Yuba and American rivers. He also developed a strategic process for establishing a shared understanding among stakeholders regarding CVPIA restoration goals, objectives, and criteria for prioritizing the application of CVPIA restoration funds to achieve basin-wide, fish population-restoration goals. Most recently, Dr. Bryan reviewed all available fishery technical information presented at the SWRCB's 1992 Yuba River water rights hearing, and used this information to develop recommended anadromous fish enhancement actions for the lower Yuba River, including water-year-type-specific minimum instream flow recommendations to replace the current "1965-Agreement" minimum instream flow standard for the river. As a recognized fisheries expert, he is currently participating in a broad range of forums in consultative, advisory, and technical expert capacities, including the Sacramento Area Water Forum. Dr. Bryan will serve as project manager and technical lead on the project.

Paul Bratovich, M.S. — Mr. Bratovich has worked as a fisheries consultant and water resources specialist in California for the past 16 years. Mr. Bratovich has analyzed effects on numerous listed, proposed-listed, and other special-status aquatic species as part of incidental take permit processes, habitat/conservation plans, and watershed management plans. As a recognized fisheries expert, he is actively participating in a broad range of forums in consultative, advisory, and technical expert capacities. His experience also includes regulatory and technical consultations with the California Department of Fish and Game, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and other agencies concerning flow-habitat relationships, habitat restoration, population dynamics, endangered species, and strategic water planning. Mr. Bratovich will assist Dr. Bryan in providing technical leadership for the project.

YRFTWG Participants: A list of the currently active YRFTWG participants, that will work together with SWRI staff, the public, and other technical experts to complete the project, is provided below.

U.S. Fish and Wildlife Service:

Gary Taylor: Branch Chief, Energy and Instream Flow

Michael Morse: Senior Fish and Wildlife Biologist, Energy and Instream Flow

Carl Mesick: Habitat Restoration Coordinator

Craig Fleming: Fisheries Biologist, Sacramento-San Joaquin Estuary, Fishery Resource Office

California Department of Fish and Game:

John Nelson: Environmental Specialist IV, Sacramento Valley-Central Sierra Region

Bill Snider: Stream Evaluation Program Leader

National Marine Fisheries Service:

Karl Halupka: Fisheries Biologist, Protected Resources Division

Water Purveyors and Users:

William Mitchell: Fisheries Biologist, Jones and Stokes Associates; on behalf of YCWA

Craig Seltenrich: Aquatic/Fisheries Biologist; PG&E

Environmental Groups:

Shawn Garvey: Executive Director; South Yuba River Citizens League (SYRCL)

Jen Carville: Hydro-policy Advocate; Friends of the River (FOR)

As stated above, these individuals will provide technical input on all aspects of the project, attend bi-monthly planning and 4 public outreach meetings, and will provide detailed technical review and comments on all project work products.

Potential Conflicts of Interest. There are no known conflicts of interest.

Appendix A

Local Involvement and Support Letters

Yuba County Water Agency

Nevada County

Yuba County

YUBA
COUNTY



WATER
AGENCY

1402 D STREET
MARYSVILLE
CALIFORNIA
95901-4226

530-741-6278

530-741-6541

April 12, 1999

Dr. Michael Bryan
Surface Water Resources, Inc.
455 Capitol Mall, Suite 600
Sacramento, CA 95814

Subject: CALFED Proposal for Development of an Implementation Plan for
Lower Yuba River Anadromous Fish Habitat Restoration

Dear Dr. Bryan:

This letter indicates Yuba County Water Agency's (YCWA) interest in supporting Surface Water Resources (SWRI) and the Yuba River Fisheries Technical Working Group (YRFTWG) as a cost-sharing partner in the development of an implementation plan for lower Yuba River anadromous fish habitat restoration.

The Agency understands that, although numerous anadromous fish enhancement and restoration actions have been proposed for the lower Yuba River in the past, there currently exists no coordinated effort at the local level to assist CALFED, other agencies, and interested/affected parties in determining priorities, budgets, and funding sources for near-term implementation of high-priority projects and studies. By assisting CALFED in its objective to work with stakeholders in local watersheds and communities to develop local implementation plans, this project will facilitate efficient on-the-ground implementation of technically sound, high-priority actions and studies that will best achieve individual and shared ecosystem enhancement goals defined by participants of the YRFTWG and CALFED. Only through development of a local-level, multi-agency implementation plan can we effectively integrate past, ongoing, and planned management and restoration initiatives to aid CALFED and the cooperating agencies/parties of the YRFTWG in achieving maximum Yuba River ecosystem benefits while minimizing costs to each party. Based on its cooperative approach, this project also will minimize the potential for actions implemented to enhance and restore lower Yuba River anadromous fishery resources to adversely affect water supply, flood control, and other beneficial uses of the Yuba River Project.

If you have any questions about our support for this important project, please do not hesitate to contact me at (530) 741-6278.

Sincerely,

Donn A. Wilson
Engineer Administrator

cc: Rebecca Fawver
CALFED Bay-Delta Program Office
1416 Ninth Street
Sacramento, CA 95814

April 14, 1999

Mr. Mark Tomich
Planning Department
Nevada County
950 Maidu Avenue
Nevada City, CA 95959-8617

Dear Mr. Tomich:

This letter is to inform Nevada County that Surface Water Resources, Inc. (SWRI) plans to submit a proposal to CALFED on behalf of the Yuba River Fisheries Technical Working Group (YRFTWG) to develop a local-level, multi-agency implementation plan (Implementation Plan) to direct the near-term implementation of prioritized Yuba River anadromous fish habitat enhancement and restoration actions. The YRFTWG currently has representatives from the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Yuba County Water Agency, Pacific Gas and Electric Company, South Yuba River Citizens League, and Friends of the River. The Implementation Plan will be based on the principles of adaptive management, and will be consistent with long-term goals identified by CALFED and other parties for ecosystem- and watershed-level protection, enhancement, and restoration. Completion of this proposed project will facilitate achieving CALFED's Strategic Plan objective of working with stakeholders in local watersheds and communities to develop local implementation plans that will effectively facilitate restoring processes and habitats that benefit priority fish species. Funding for the implementation of prioritized actions will be obtained from CALFED and other agencies/parties via separate proposals.

The project site is the lower Yuba River, defined as the 24-mile reach between Englebright Dam and the confluence with the Feather River. **Figure 1** is a regional map showing the location of the lower Yuba River, within Nevada and Yuba counties, and key watershed elements (e.g., dams, reservoirs, diversions, and tributaries) that affect fishery habitat conditions in the lower Yuba River, including New Bullards Bar and Englebright dams and reservoirs, Narrows I and Narrows II powerhouses, and Daguerre Point Dam.

The primary objectives for the project include:

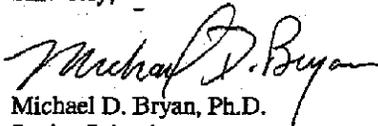
- developing a detailed implementation plan providing the conceptual framework and process that will guide the refinement, evaluation, prioritization, implementation, monitoring, and post-monitoring revision of ERP actions, as well as actions proposed by other agencies, and newly developed actions;
- facilitating implementation of Yuba River enhancement/restoration actions and studies leading to population increases for the lower river's fall-run/late-fall-run and spring-run chinook salmon, steelhead, and other anadromous fish populations; and

- structuring the implementation of near-term actions and studies in a manner that initiates effective recovery of chinook salmon and steelhead populations, while increasing knowledge pertaining to how key watershed and river structures, processes, operations, and related factors work individually and collectively to influence anadromous fish habitat and populations within the lower river.

SWRI will serve as project manager and will prepare, or coordinate the preparation of, all initial work products associated with development of the Implementation Plan. These work products will be distributed to all YRFTWG participants for review and comment at the group's bi-monthly meetings. YRFTWG participants have already discussed and acknowledged that universal agreement on all enhancement/restoration actions and studies prioritized for implementation (i.e., specific components of the plan) will not always be possible, nor essential to meet the broad goals of the agencies and stakeholders participating in the YRFTWG. Nevertheless, all YRFTWG participants have agree to support the development and use of the Implementation Plan as the best mechanism for achieving their specific and shared goals associated with lower Yuba River fishery enhancement/restoration. As such, the YRFTWG as a whole will serve as a "steering committee" to guide development of the Implementation Plan. Development of the Implementation Plan will include opportunities for input from the general public.

We look forward to working with Nevada County agencies, should the proposal be funded. Please feel free to contact me at (916) 325-4043 with any questions you might have.

Sincerely,



Michael D. Bryan, Ph.D.
Senior Scientist

Enclosure

cc: Nevada County Board of Supervisors
Yuba River Fisheries Technical Working Group

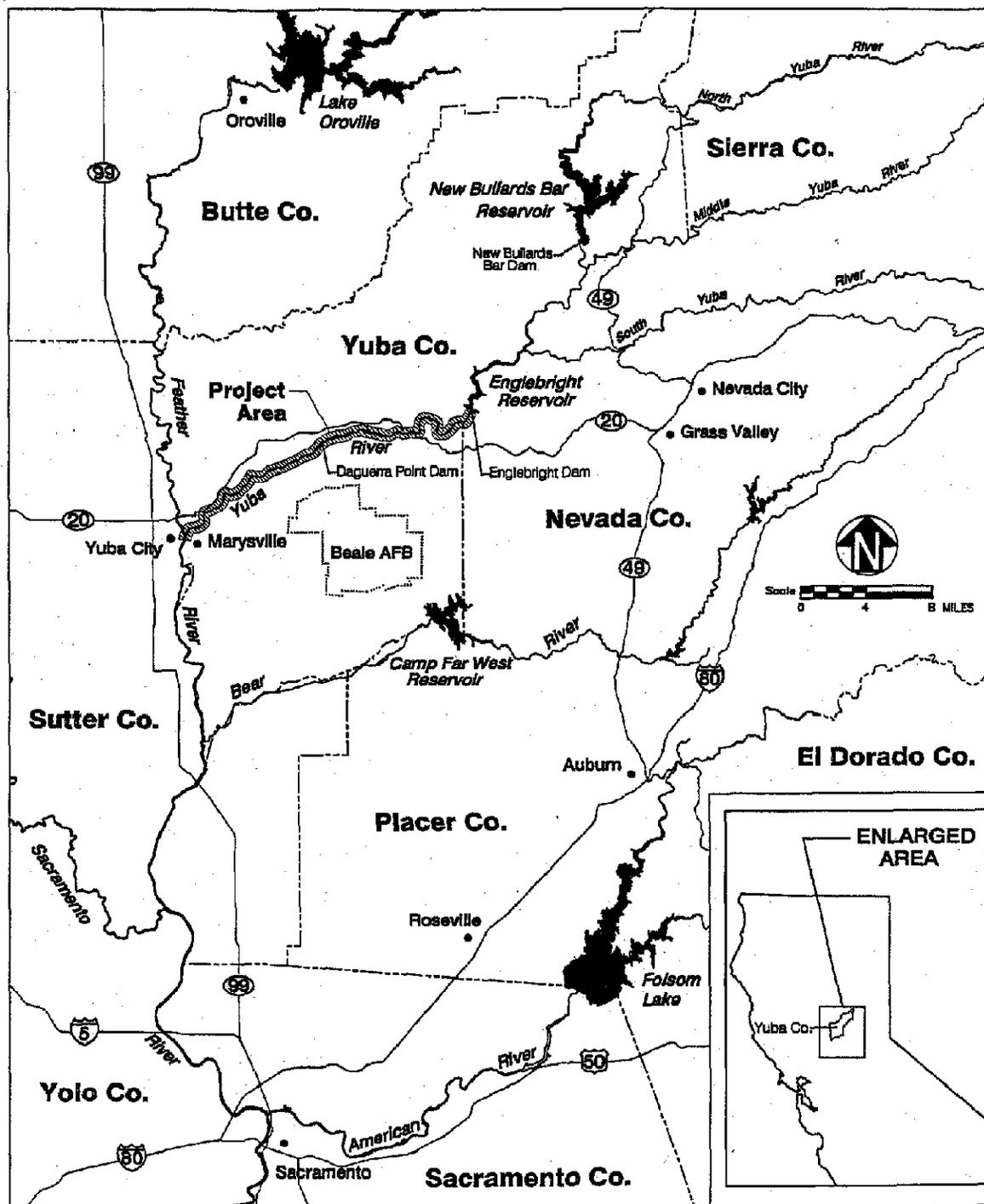


Figure 1. Regional Location and Project Area

April 14, 1999

Mr. Tim Manning
Planning Director
Community Development Department
Yuba County
938 14th Street
Marysville, CA 95901

Dear Mr. Manning:

This letter is to inform Yuba County that Surface Water Resources, Inc. (SWRI) plans to submit a proposal to CALFED on behalf of the Yuba River Fisheries Technical Working Group (YRFTWG) to develop a local-level, multi-agency implementation plan (Implementation Plan) to direct the near-term implementation of prioritized Yuba River anadromous fish habitat enhancement and restoration actions. The YRFTWG currently has representatives from the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Yuba County Water Agency, Pacific Gas and Electric Company, South Yuba River Citizens League, and Friends of the River. The Implementation Plan will be based on the principles of adaptive management, and will be consistent with long-term goals identified by CALFED and other parties for ecosystem- and watershed-level protection, enhancement, and restoration. Completion of this proposed project will facilitate achieving CALFED's Strategic Plan objective of working with stakeholders in local watersheds and communities to develop local implementation plans that will effectively facilitate restoring processes and habitats that benefit priority fish species. Funding for the implementation of prioritized actions will be obtained from CALFED and other agencies/parties via separate proposals.

The project site is the lower Yuba River, defined as the 24-mile reach between Englebright Dam and the confluence with the Feather River. **Figure 1** is a regional map showing the location of the lower Yuba River, within Yuba and Nevada counties, and key watershed elements (e.g., dams, reservoirs, diversions, and tributaries) that affect fishery habitat conditions in the lower Yuba River, including New Bullards Bar and Englebright dams and reservoirs, Narrows I and Narrows II powerhouses, and Daguerre Point Dam.

The primary objectives for the project include:

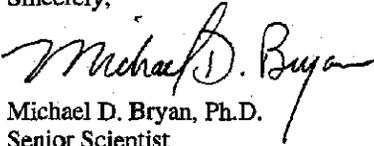
- developing a detailed implementation plan providing the conceptual framework and process that will guide the refinement, evaluation, prioritization, implementation, monitoring, and post-monitoring revision of ERP actions, as well as actions proposed by other agencies, and newly developed actions;

- facilitating implementation of Yuba River enhancement/restoration actions and studies leading to population increases for the lower river's fall-run/late-fall-run and spring-run chinook salmon, steelhead, and other anadromous fish populations; and
- structuring the implementation of near-term actions and studies in a manner that initiates effective recovery of chinook salmon and steelhead populations, while increasing knowledge pertaining to how key watershed and river structures, processes, operations, and related factors work individually and collectively to influence anadromous fish habitat and populations within the lower river.

SWRI will serve as project manager and will prepare, or coordinate the preparation of, all initial work products associated with development of the Implementation Plan. These work products will be distributed to all YRFTWG participants for review and comment at the group's bi-monthly meetings. YRFTWG participants have already discussed and acknowledged that universal agreement on all enhancement/restoration actions and studies prioritized for implementation (i.e., specific components of the plan) will not always be possible, nor essential to meet the broad goals of the agencies and stakeholders participating in the YRFTWG. Nevertheless, all YRFTWG participants have agreed to support the development and use of the Implementation Plan as the best mechanism for achieving their specific and shared goals associated with lower Yuba River fishery enhancement/restoration. As such, the YRFTWG as a whole will serve as a "steering committee" to guide development of the Implementation Plan. Development of the Implementation Plan will include opportunities for input from the general public.

We look forward to working with Yuba County agencies, should the proposal be funded. Please feel free to contact me at (916) 325-4043 with any questions you might have.

Sincerely,



Michael D. Bryan, Ph.D.
Senior Scientist

Enclosure

cc: Yuba County Board of Supervisors
Yuba River Fisheries Technical Working Group

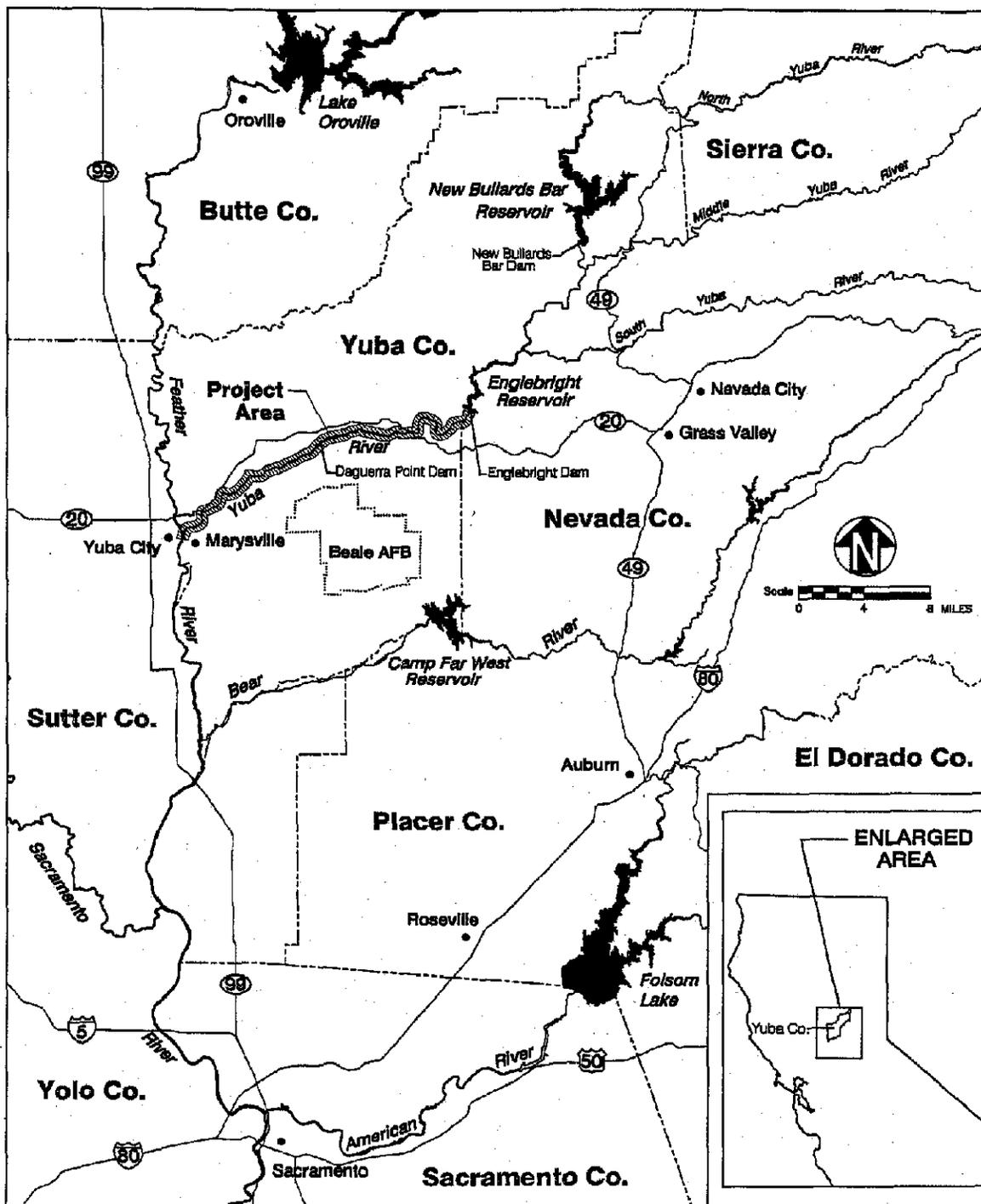


Figure 1. Regional Location and Project Area

Appendix B

Required State and Federal Forms

Nondiscrimination Compliance Statement

Standard Form 424 - Application for Federal Assistance

Standard Form 424A Budget Information

Standard Form 424B Assurances Non-Construction Programs

*Certifications Regarding Debarment, Suspension and Other
Responsibility Matters, Drug-Free Workplace Requirements and
Lobbying*

NONDISCRIMINATION COMPLIANCE STATEMENT

STD. 19 (REV. 3-85) FMC

COMPANY NAME

Surface Water Resources, Inc.

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

Paul M. Bratovich

DATE EXECUTED

April 16, 1999

EXECUTED IN THE COUNTY OF

Sacramento, California

PROSPECTIVE CONTRACTOR'S SIGNATURE

Paul M. Bratovich / Partner

PROSPECTIVE CONTRACTOR'S TITLE

Partner

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

Surface Water Resources, Inc.

**APPLICATION FOR
FEDERAL ASSISTANCE**

OMB Approval No. 0348-0043

TYPE OF SUBMISSION: <input type="checkbox"/> Application <input checked="" type="checkbox"/> Construction <input type="checkbox"/> Non-Construction <input type="checkbox"/> Preapplication <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction	2. DATE SUBMITTED <i>April 16, 1999</i>	Applicant Identifier
	3. DATE RECEIVED BY STATE	State Application Identifier
	4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

APPLICANT INFORMATION

Legal Name: *Surface Water Resources, Inc.* Organizational Unit:

Address (give city, county, State, and zip code):
*455 Capitol Mall, Suite 600
Sacramento, CA 95814*

Name and telephone number of person to be contacted on matters involving this application (give area code):
*Michael D. Bryan, Ph.D.
916/325-4050*

EMPLOYER IDENTIFICATION NUMBER (EIN):
68-0387309

7. TYPE OF APPLICANT: (enter appropriate letter in box)

TYPE OF APPLICATION:

New Continuation Revision

Revision, enter appropriate letter(s) in box(es):

A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other (specify):

7. TYPE OF APPLICANT: (enter appropriate letter in box)

A. State H. Independent School Dist.
B. County I. State Controlled Institution of Higher Learning
C. Municipal J. Private University
D. Township K. Indian Tribe
E. Interstate L. Individual
F. Intermunicipal M. Profit Organization
G. Special District N. Other (Specify)

9. NAME OF FEDERAL AGENCY:
CALFED

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:
TITLE: *N/A*

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:
Development of an Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration

12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.):
Yuba and Nevada County, California

13. PROPOSED PROJECT

Start Date	Ending Date	14. CONGRESSIONAL DISTRICTS OF:
		a. Applicant <i>3-5, 11</i>
		b. Project <i>2</i>

5. ESTIMATED FUNDING:

1. Federal	\$	00
2. Applicant	\$	00
3. State	\$	00
4. Local	\$	00
5. Other	\$	00
Program Income	\$	00
TOTAL	\$	<i>171,100</i>

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS? *N/A*

a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:
DATE _____

b. No. PROGRAM IS NOT COVERED BY E. O. 12372
 OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
 Yes If "Yes," attach an explanation. No

8. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

Type Name of Authorized Representative <i>Paul M. Bratovich</i>	b. Title <i>Partner</i>	c. Telephone Number <i>916/325-4050</i>
Signature of Authorized Representative <i>Paul M. Bratovich / Partner</i>	e. Date Signed <i>April 16, 1999</i>	

INSTRUCTIONS FOR THE SF-424

Public reporting burden for this collection of information is estimated to average 45 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0043), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

This is a standard form used by applicants as a required facesheet for preapplications and applications submitted for Federal assistance. It will be used by Federal agencies to obtain applicant certification that States which have established a review and comment procedure in response to Executive Order 12372 and have selected the program to be included in their process, have been given an opportunity to review the applicant's submission.

- | Item: | Entry: | Item: | Entry: |
|-------|--|-------|--|
| 1. | Self-explanatory. | 12. | List only the largest political entities affected (e.g., State, counties, cities). |
| 2. | Date application submitted to Federal agency (or State if applicable) and applicant's control number (if applicable). | 13. | Self-explanatory. |
| 3. | State use only (if applicable). | 14. | List the applicant's Congressional District and any District(s) affected by the program or project. |
| 4. | If this application is to continue or revise an existing award, enter present Federal identifier number. If for a new project, leave blank. | 15. | Amount requested or to be contributed during the first funding/budget period by each contributor. Value of in-kind contributions should be included on appropriate lines as applicable. If the action will result in a dollar change to an existing award, indicate <u>only</u> the amount of the change. For decreases, enclose the amounts in parentheses. If both basic and supplemental amounts are included, show breakdown on an attached sheet. For multiple program funding, use totals and show breakdown using same categories as item 15. |
| 5. | Legal name of applicant, name of primary organizational unit which will undertake the assistance activity, complete address of the applicant, and name and telephone number of the person to contact on matters related to this application. | 16. | Applicants should contact the State Single Point of Contact (SPOC) for Federal Executive Order 12372 to determine whether the application is subject to the State intergovernmental review process. |
| 6. | Enter Employer Identification Number (EIN) as assigned by the Internal Revenue Service. | 17. | This question applies to the applicant organization, not the person who signs as the authorized representative. Categories of debt include delinquent audit disallowances, loans and taxes. |
| 7. | Enter the appropriate letter in the space provided. | 18. | To be signed by the authorized representative of the applicant. A copy of the governing body's authorization for you to sign this application as official representative must be on file in the applicant's office. (Certain Federal agencies may require that this authorization be submitted as part of the application.) |
| 8. | Check appropriate box and enter appropriate letter(s) in the space(s) provided:

- "New" means a new assistance award.

- "Continuation" means an extension for an additional funding/budget period for a project with a projected completion date.

- "Revision" means any change in the Federal Government's financial obligation or contingent liability from an existing obligation. | | |
| 9. | Name of Federal agency from which assistance is being requested with this application. | | |
| 10. | Use the Catalog of Federal Domestic Assistance number and title of the program under which assistance is requested. | | |
| 11. | Enter a brief descriptive title of the project. If more than one program is involved, you should append an explanation on a separate sheet. If appropriate (e.g., construction or real property projects), attach a map showing project location. For preapplications, use a separate sheet to provide a summary description of this project. | | |

SF-424 (Rev. 7-97) Back

INSTRUCTIONS FOR THE SF-424A

Public reporting burden for this collection of information is estimated to average 180 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0044), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET, SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

General Instructions

This form is designed so that application can be made for funds from one or more grant programs. In preparing the budget, adhere to any existing Federal grantor agency guidelines which prescribe how and whether budgeted amounts should be separately shown for different functions or activities within the program. For some programs, grantor agencies may require budgets to be separately shown by function or activity. For other programs, grantor agencies may require a breakdown by function or activity. Sections A, B, C, and D should include budget estimates for the whole project except when applying for assistance which requires Federal authorization in annual or other funding period increments. In the latter case, Sections A, B, C, and D should provide the budget for the first budget period (usually a year) and Section E should present the need for Federal assistance in the subsequent budget periods. All applications should contain a breakdown by the object class categories shown in Lines a-k of Section B.

Section A. Budget Summary Lines 1-4 Columns (a) and (b)

For applications pertaining to a *single* Federal grant program (Federal Domestic Assistance Catalog number) and *not* requiring a functional or activity breakdown, enter on Line 1 under Column (a) the catalog program title and the catalog number in Column (b).

For applications pertaining to a *single* program requiring budget amounts by multiple functions or activities, enter the name of each activity or function on each line in Column (a), and enter the catalog number in Column (b). For applications pertaining to multiple programs where none of the programs require a breakdown by function or activity, enter the catalog program title on each line in Column (a) and the respective catalog number on each line in Column (b).

For applications pertaining to a *multiple* programs where one or more programs require a breakdown by function or activity, prepare a separate sheet for each program requiring the breakdown. Additional sheets should be used when one form does not provide adequate space for all breakdown of data required. However, when more than one sheet is used, the first page should provide the summary totals by programs.

Lines 1-4, Columns (c) through (g)

For new applications, leave Columns (c) and (d) blank. For each line entry in Columns (a) and (b), enter in Columns (e), (f), and (g) the appropriate amounts of funds needed to support the project for the first funding period (usually a year).

For continuing grant program applications, submit these forms before the end of each funding period as required by the grantor agency. Enter in Columns (c) and (d) the estimated amounts of funds which will remain unobligated at the end of the grant funding period only if the Federal grantor agency instructions provide for this. Otherwise, leave these columns blank. Enter in Columns (e) and (f) the amounts of funds needed for the upcoming period. The amount(s) in Column (g) should be the sum of amounts in Columns (e) and (f).

For supplemental grants and changes to existing grants, do not use Columns (c) and (d). Enter in Column (e) the amount of the increase or decrease of Federal funds and enter in Column (f) the amount of the increase or decrease of non-Federal funds. In Column (g) enter the new total budgeted amount (Federal and non-Federal) which includes the total previous authorized budgeted amounts plus or minus, as appropriate, the amounts shown in Columns (e) and (f). The amount(s) in Column (g) should not equal the sum of amounts in Columns (e) and (f).

Line 5—Show the totals for all columns used.

Section B. Budget Categories

In the column headings (1) through (4), enter the titles of the same programs, functions, and activities shown on Lines 1-4, Column (a), Section A. When additional sheets are prepared for Section A, provide similar column headings on each sheet. For each program, function or activity, fill in the total requirements for funds (both Federal and non-Federal) by object class categories.

Lines 6a-i—Show the totals of Lines 6a and 6h in each column.

Line 6j—Show the amount of indirect cost.

Line 6k—Enter the total of amounts on Lines 6i and 6j. For all applications for new grants and continuation grants the total amount in column (5), Line 6k, should be the same as the total amount shown in Section A, Column (g), Line 5. For supplemental grants and changes to grants, the total amount of the increase or decrease as shown in Columns (1)-(4), Line 6k should be the same as the sum of the amounts in Section A, Columns (e) and (f) on Line 5.

Line 7—Enter the estimated amount of income, if any, expected to be generated from this project. Do not add or subtract this amount from the total project amount. Show under the program.

INSTRUCTIONS FOR THE SF-424A (continued)

narrative statement the nature and source of income. The estimated amount of program income may be considered by the federal grantor agency in determining the total amount of the grant

Section C. Non-Federal Resources

Lines 8-11--Enter amounts of non-Federal resources that will be used on the grant. If in-kind contributions are included, provide a brief explanation on a separate sheet.

Column (a) - Enter the program titles identical to Column (a), Section A. A breakdown by function or activity is not necessary.

Column (b) - Enter the contribution to be made by the applicant.

Column (c) - Enter the amount of the State's cash and in-kind contribution if the applicant is not a State or State agency. Applicants which are a State or State agencies should leave this column blank.

Column (d) - Enter the amount of cash and in-kind contributions to be made from all other sources.

Column (e) - Enter totals of Columns (b), (c), and (d).

Line 12--Enter the total for each of Columns (b)-(e). The amount in Column (e) should be equal to the amount on Line 5, Column (f) Section A.

Section D. Forecasted Cash Needs

Line 13--Enter the amount of cash needed by quarter from the grantor agency during the first year.

Line 14--Enter the amount of cash from all other sources needed by quarter during the first year.

Line 15--Enter the totals of amounts on Lines 13 and 14.

Section E. Budget Estimates of Federal Funds Needed for Balance of the Project.

Lines 16-19--Enter in Column (a) the same grant program titles shown in Column (a), Section A. A breakdown by function or activity is not necessary. For new applications and continuation grant applications, enter in the proper columns amounts of Federal funds which will be needed to complete the program or project over the succeeding funding period (usually in years). This section need not be completed for revisions (amendments, changes, or supplements) to funds for the current year of existing grants.

If more than four lines are needed to list the program titles, submit additional schedules as necessary.

Line 20--Enter the total for each of the Columns (b)-(e). When additional schedules are prepared for this Section, annotate accordingly and show the overall totals on this line.

Section F. Other Budget Information

Line 21--Use this space to explain amounts for individual direct object-class cost categories that may appear to be out of the ordinary or to explain the details as required by the Federal grantor agency.

Line 22--Enter the type of indirect rate (provisional, predetermined, final or fixed) that will be in effect during the funding period, the estimated amount of the base to which the rate is applied, and the total indirect expense.

Line 23--Provide any other explanations or comments deemed necessary.

BUDGET INFORMATION - Non-Construction Programs						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. CALFED Bay-Delta Program Ecosystem		\$	\$	\$ 99,160	\$ 35,500	\$ 134,660
2. Restoration Program (ERP)						
3.						
4.						
5. Totals		\$	\$	\$ 99,160	\$ 35,500	\$ 134,660
FUNCTIONS, PURPOSES, OBJECTS						
6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)	
	(1) ERP	(2)	(3)	(4)		
a. Personnel	\$ 66,696	\$	\$	\$	\$	
b. Fringe Benefits	28,584					
c. Travel	776					
d. Equipment						
e. Supplies	3,104					
f. Contractual	35,500					
g. Construction						
h. Other						
i. Total Direct Charges (sum of 6a-6h)						
j. Indirect Charges						
k. TOTALS (sum of 6i and 6j)	\$ 134,660	\$	\$	\$	\$	
7. Program Income		\$	\$	\$	\$	\$

1-014609

SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8. ERP	\$ 50,000	\$	\$	\$ 50,000	
9.					
10.					
11.					
12. TOTAL (sum of lines 8 - 11)	\$ 50,000	\$	\$	\$ 50,000	
SECTION D - GRANT-SPECIFIC NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 99,160	\$ 23,650	\$ 27,350	\$ 23,050	\$ 25,110
14. NonFederal	35,500	7,100	7,100	10,650	10,650
15. TOTAL (sum of lines 13 and 14)	134,660	30,750	34,450	33,700	35,760
SECTION E - BUDGET ESTIMATES BY FUNDING PERIOD (FOR GRANTS OF THE FISCAL YEAR)					
(a) Grant Program	FUTURE FUNDING PERIODS (Years)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16. ERP	\$ 71,940	\$	\$	\$	
17.					
18.					
19.					
20. TOTAL (sum of lines 16-19)	\$ 71,940	\$	\$	\$	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges:		22. Indirect Charges:			
23. Remarks:					

1-014609

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET.
SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provides for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11968; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1986 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL <i>Paul M. Bratorich</i>	TITLE <i>Partner</i>
APPLICANT ORGANIZATION <i>Surface Water Resources, Inc.</i>	DATE SUBMITTED <i>April 16, 1999</i>

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U.S. Department of the Interior

Certifications Regarding Debarment, Suspension and
Other Responsibility Matters, Drug-Free Workplace
Requirements and Lobbying

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions - The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions. See below for language to be used; use this form for certification and sign; or use Department of the Interior Form 1954 (DI-1954). (See Appendix A of Subpart D of 43 CFR Part 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternate I. (Grantees Other Than Individuals) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR Part 12)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

CHECK IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

CHECK IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.

Alternate I. (Grantees Other Than Individuals)

A. The grantee certifies that it will or continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an ongoing drug-free awareness program to inform employees about—
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will —
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification numbers(s) of each affected grant;
- (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted —
 - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a) (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

455 Capitol Mall, Suite 600
Sacramento, CA 95814

Check if there are workplaces on file that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternate II. (Grantees Who Are Individuals)

- (a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

PART E: Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS \$100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT; SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

CHECK IF CERTIFICATION IS FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF \$150,000, OR A SUBGRANT OR SUBCONTRACT EXCEEDING \$100,000, UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL

Paul M. Bratovich / Partner

TYPED NAME AND TITLE

Paul M. Bratovich, Partner

DATE

April 16, 1999