



Sacramento
Area Flood
Control
Agency

July 28, 1997

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F1-308

Ms. Kate Hansel
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Subject: Proposals to Establish Comprehensive Management Program and Four
Habitat Demonstration Projects for the Lower American River Ecosystem

Dear Ms. Hansel:

The lower American River (LAR) ecosystem encompasses highly valued and biologically diverse aquatic and terrestrial resources. Many organizations are actively working to protect and enhance the ecosystem. Recent coordination among stakeholders has identified SAFCA's Floodway Management Plan and the Draft Water Forum Agreement as the central programs for helping to ensure the long-term viability of the LAR ecosystem. The Floodway Management Plan and the Habitat Mitigation Element of the Draft Water Forum Agreement have become the focus of the coordinated effort among the stakeholders.

SAFCA, with the support of the Water Forum and other LAR stakeholders, proposes a comprehensive management program for habitat management and monitoring of the LAR, consistent with the above plans. The program would consolidate and coordinate overall LAR habitat and species monitoring, and implement four demonstration habitat enhancement projects identified as high priority targets for the LAR ecosystem. The program would also establish a Technical Assistance Team representing the broad interests of the stakeholders, and serve as a peer review body and as a clearinghouse for information on the success of habitat studies and enhancement projects.

The proposed program for coordinating LAR management efforts would optimize investments in ecosystem enhancements, ensure efficiency in scientific research, and promote communications among the stakeholders towards the common goal of ecosystem protection. A key feature of the program is the coordination of project-level monitoring, such as the four proposed demonstration projects (submitted separately) and other ongoing projects. The information on overall ecosystem health and habitat project successes would be evaluated with data on species population monitoring and other ecosystem function to make cost-effective management decisions on future ecosystem investments.

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I-006689

I. EXECUTIVE SUMMARY

a. Project Title and Applicant Name:

Comprehensive Habitat Management Program for the Lower American River
 Sacramento Area Flood Control Agency
 Timothy N. Washburn, Agency Counsel
 1007 7th Street, 5th Floor
 Sacramento, CA 95814

Phone: (916) 440-7606

Fax: (916) 440-8289

b. Project Description and Primary Biological/Ecological Objectives: Sacramento Area Flood Control Agency (SAFCA), the Sacramento Area Water Forum, and other American River stakeholders have joined together to offer this proposal for a comprehensive habitat management program to restore the ecosystem health of the lower American River (LAR). The primary objectives of this program are to coordinate and oversee ongoing and planned habitat restoration projects, to develop a protocol for application of a hydraulic model to identify appropriate revegetation locations, and to conduct monitoring and evaluation of both the demonstration projects (proposed separately by SAFCA) and population trends of indicator fish species to evaluate ecosystem health of the LAR.

c. Approach/Tasks/Schedule: Task 1 - Fall 1997: Establish a Technical Assistance Team for the LAR, including fisheries and water resource experts, to guide restoration actions on the American River. The team will also coordinate schedules, deliverables, and budgets. Task 2 - Early 1998: Development of a monitoring and evaluation plan. The plan will specify sampling methods, a monitoring schedule, and participants. The plan will also establish a process for evaluation of monitoring results, including a process for assessment of projects implemented and assessment of future project feasibility and appropriateness. A reporting process of all results will be developed. Task 3 - 1998: Development of a protocol for application of a hydraulic model. Task 4 - 1998-2001: Implementation of monitoring and evaluation plan. Task 5: Progress reports. Monthly progress reports will be submitted describing key activities performed, deliverables submitted during the invoicing period, and funds spent and remaining for the project.

d. Justification for Project and Funding by CALFED: The Comprehensive Habitat Management Program will focus on high-risk species and the habitats that support those species, all of which have experienced great declines in the LAR. The LAR is a managed system, with natural anadromous fish production limited to the lower 23 miles. The most effective management of this system to benefit priority species and habitats will be the combination of optimal flow and water temperature management (addressed by the Sacramento Area Water Forum, the AFRP, and other initiatives (e.g., P.L. 101-514 Fazio water service contracts)) with actions to restore habitat. The Comprehensive Habitat Management Program will coordinate and expedite ongoing actions and leverage future actions on the LAR. The institutional framework that will be given to this program by including it in SAFCA's Floodway Management Plan and the Sacramento Area Water Forum Agreement will increase the long-term effectiveness of the program.

Through the participation of many diverse interest groups on the LAR, including the Water Forum stakeholders, the LAR Task Force, and the LAR Technical Team, a Comprehensive Habitat Management Program is being proposed to coordinate restoration efforts and facilitate implementation of management efforts in an expeditious manner. Additionally, the institutional framework that will be given to the Program and associated habitat restoration projects by incorporating them into the Water

Forum Agreement and SAFCA's Floodway Management Plan will increase the long-term effectiveness of the project and the durability of the biological benefits.

- e. Budget Costs and Third Party Impacts: The total budget costs are \$889,350 according to the following tasks listed below. SAFCA is proposing that CALFED fund 50% of these costs.

Task 1 - \$121,000	Task 3 - \$ 38,500
Task 2 - \$154,000	Task 4 - \$495,000

Third-Party Impacts: The Comprehensive Habitat Management Program would not be expected to create any adverse third-party impacts.

- f. Applicant Qualifications: SAFCA is the Project Sponsor. SAFCA and the Water Forum have assembled a team of resource consultants to conduct the proposed study. Surface Water Resources, Inc. (SWRI) and Jones and Stokes Associates (JSA) are proposed to coordinate efforts and conduct monitoring. SWRI and JSA were selected as SAFCA consultants for this project because of their extensive individual and corporate experience in ecological resources issues, particularly aquatic issues, and planning processes in the lower American River, the Central Valley, and the Bay-Delta.

Project Coordination - Timothy Washburn, Agency Counsel
Project Management & Design - Paul Bratovich, M.S., Senior Scientist
Project Management & Design - Steve Chainey, M.S., Senior Ecologist
Aquatic Monitoring & Sampling Design - Michael Bryan, Ph.D., Aquatic Ecologist
Aquatic Monitoring & Sampling Design - Thomas Cannon, M.S., Senior Ecologist
Hydraulic Modeling - George "Buzz" Link, P.E., Senior Water Resources Engineer
Aquatic Monitoring and Endangered Species - Amy Harris, Aquatic Ecologist

- g. Monitoring and Data Evaluation: The proposed project is designed to be a comprehensive monitoring and evaluation program for the LAR, to coordinate restoration actions and assess ecosystem health. There are two, distinct monitoring components of the Comprehensive Habitat Management Program. The first component includes monitoring of demonstration projects to assess preferential use of restored habitats, compared to a control, to determine whether the project has successfully provided habitat for priority species. The second component is an overall assessment of population trends of indicator fish species in the LAR to evaluate the ecosystem health and function of the LAR.

- h. Local Support/Coordination with other Programs/ Compatibility with CALFED objectives: The Sacramento Area Water Forum, representing 46 stakeholders, the City/County Office of Metropolitan Water Planning, and the LAR Task Force which is comprised of 8 Community Groups, 6 Environmental Interests, 2 Recreation Interests, 8 Flood Control Agencies, and 3 Resource Agencies (*see attached Statement of Support*). The program is consistent with the objectives of CALFED and the goals of other ongoing projects. The Lower American River Technical Team endorses a consultation and technical assistance team of fisheries and water resources experts to identify, guide, and oversee restoration actions and enhancement measures on the LAR.

II. TITLE PAGE

a. Title of Project: Comprehensive Habitat Management Program for the Lower American River

b. Name of Applicant(s): Sacramento Area Flood Control Agency

Principle Investigator(s):

Paul Bratovich, Senior Scientist	Thomas Cannon, Senior Ecologist
Michael Bryan, Aquatic Ecologist	Steven Chainey, Senior Ecologist
Surface Water Resources, Inc.	Jones & Stokes Associates
455 Capitol Mall, Suite 600	2600 V Street
Sacramento, CA 95814	Sacramento, CA 95818
Phone: (916) 325-4050	Phone: (916) 737-3000
Fax: (916) 446-0143	Fax: (916) 737-3030
email: swri@ix.netcom.com	email: jsa@jsanet.com

c. Type of Organization and Tax Status: Joint Powers Agency, IRS Exempt

d. Tax Identification Number: 94-6000529

e. Technical and Financial Contact person(s):

Financial Contact Person

Julie Lienert
Director of Administration, SAFCA
1007 7th Street, 5th floor
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Technical Contact Person

Timothy N. Washburn
Agency Counsel, SAFCA
1007 7th Street, 5th Floor
Sacramento, CA 95814
Phone: (916) 440-7607
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f. Participants/Collaborators in Implementation: The Sacramento Area Water Forum, representing 46 stakeholders, the City/County Office of Metropolitan Water Planning, and the LAR Task Force which is comprised of 8 Community Groups, 6 Environmental Interests, 2 Recreation Interests, 8 Flood Control Agencies, and 3 Resource Agencies (*see attached Statement of Support*).

g. RFP Project Group Type- Services/Consulting/Research

III. PROJECT DESCRIPTION

a. Project Description and Approach

The proposed Comprehensive Habitat Management Program consists of a monitoring, evaluation and habitat management plan to coordinate the existing and anticipated restoration actions for priority species and habitats on the lower American River (LAR), to conduct monitoring of populations of indicator fish species to assess the health of the LAR ecosystem, and to make recommendations for modification of management actions. The program will also include development of a protocol to apply a hydraulic model for the LAR to evaluate future vegetation management and proposed habitat restoration or mitigation projects based on reach-by-reach floodway standards. These modeling results will provide important information necessary to reduce potential conflicts between habitat expansion projects and floodway management. The Comprehensive Habitat Management Program is a component of several programs related to watershed management of the LAR, including the Sacramento Area Water Forum Draft Agreement and SAFCA's Floodway Management Plan.

The Comprehensive Habitat Management Program will be community-based and include local leadership and the participation of diverse interests through the formation of a Technical Assistance Team. The plan is supported by the Water Forum, which represents more than 40 stakeholders from the business community, environmental interests, public interests, Sacramento water interests, and foothill water interests. The Comprehensive Habitat Management Program will include the continued participation of the Lower American River Technical Team and the Lower American River Task Force, also representing a broad range of interests in the Sacramento area and on the American River.

The Lower American River Technical Team has identified four demonstration habitat restoration projects on the LAR to address the stressors, priority species, and priority habitats identified by CALFED. These efforts have resulted in a package of proposals for habitat restoration actions on the LAR, as well as the Comprehensive Habitat Management Program proposal to coordinate the restoration actions and enhancement measures. Four specific habitat restoration action proposals developed by the Technical Team and endorsed by the Lower American River Task Force have been submitted to CALFED as separate proposals. The Comprehensive Habitat Management Program will coordinate efforts among these projects, including monitoring and evaluation, to increase efficiency, cost-effectiveness, and consistency among the projects.

TECHNICAL ASSISTANCE TEAM: The Comprehensive Habitat Management Program includes the formation of a Technical Assistance Team, primarily from the CALFED Lower American River Technical Team, to coordinate and review restoration actions (proposed and future), monitoring, and evaluations. The Program will be based on the concept of adaptive management, including testing of alternative methods of habitat restoration, and evaluation of actions such as optimal flow management. The Technical Assistance Team will use the results of monitoring to make recommendations for future management actions on the LAR. Species such as steelhead, fall-run chinook salmon, and splittail will be used as indicators of ecosystem health, and will be included in the monitoring and evaluation plan to measure improvement in the LAR over time.

HYDRAULIC MODEL PROTOCOL: Historically, routine floodway maintenance activity and standards have been at odds, often unavoidably, with the desire to optimize the extent and quality of fish and wildlife habitat on the LAR. Aquatic and riparian habitat has been removed or degraded, and riverine habitat

restoration proposals have occasionally been thwarted, because of the perceived concern that more habitat equates to reduced channel capacity and therefore lower public safety thresholds. Irrefutable scientific verification of the perceived conflict between habitat expansion and floodway capacity has not been possible in most instances because of the absence of advanced technology (a river-wide hydraulic model) and insufficient reach-by-reach data on channel characteristics. Without proof of the compatibility of better habitat within the floodway, public safety has and will be the prudent choice of responsible resource managers.

Vegetation management and periodic removal of trees and shrubs growing on bars and banks along the river have been a routine component of maintaining the flood-carrying capacity of the river. In-channel vegetation potentially increases the resistance to flow at higher river stages, and dense stands may trap excessive volumes of floating woody debris at channel constrictions (e.g., bridge spans) during large floods. Trees growing in the face of levees may be dislodged during flood stage, weakening levee stability. Vegetation removal occurs as necessary within the LAR to meet floodway and levee maintenance standards set by the Corps of Engineers and the state Reclamation Board.

According to recent flood simulation hydraulic models, the LAR floodway has adequate capacity to convey the design flood event without encroaching into minimum freeboard standards for peak flood stage (generally three feet below the top of levees). However, increases in flood stage caused by higher-than-anticipated flows or an increase in channel roughness (resistance to flow from vegetation, gravel bar formation, or debris jams) may contribute to higher risk of seepage and boils at levees, or increase the rate of bed scour and bank erosion at high velocity sites. Although channel maintenance engineers use professional judgment to anticipate locations where vegetation encroachment and bar formation is potentially threatening the channel capacity, a comprehensive hydraulic model of the entire river has not been available to scientifically verify assumed high-risk locations where vegetation and gravel removal is performed.

The Corps of Engineers (Corps) has recently (1997) completed comprehensive aerial photography of the LAR which is being used to prepare a one-foot contour model of the entire floodway. Digital topographic data will be used to prepare a river-wide hydraulic model to be completed in 1997 or early 1998. The sophisticated UNET model will be available to the Corps, the U.S. Bureau of Reclamation, and others to simulate future flood events and test proposed flood operations, bank protection projects, new structures (water intakes), and potential changes in channel roughness (e.g., more vegetation within the floodway).

SAFCA is proposing to take advantage of the Corps' UNET hydraulic model of the river to advance the ecosystem needs of the LAR. Future vegetation management and proposed habitat restoration or mitigation projects will be evaluated based on hydraulic modeling verification of site-specific or reach-by-reach floodway standards. Hydraulic model results will ensure that habitat expansion projects are not in conflict with public safety thresholds (e.g., adequate freeboard, avoidance of seepage risk, levee protection). Model results will also be used to identify sites where surplus channel capacity exists, and thereby identify suitable sites for habitat restoration projects, or to recommend altered or reduced channel maintenance procedures that promote greater aquatic and riparian habitat quality.

This proposal includes development of a uniform protocol for application of the hydraulic model to evaluate or redesign habitat restoration projects and channel maintenance procedures. SAFCA has

recently offered to take over American River floodway maintenance responsibilities from the Department of Water Resources, and to coordinate future habitat enhancement efforts by other agencies and non-profit organizations. To test and demonstrate hydraulic verification protocols, five case studies will be applied using proposed guidelines at specific sites where restoration, mitigation, or channel clearing are under consideration. Composite channel roughness coefficients will be developed at these sites to compare existing conditions with floodway design standards and proposed habitat modifications. Standardized criteria will be developed to support acceptance, rejection, or modification of proposals to change channel conditions to meet ecosystem and floodway objectives.

b. Location and/or Geographic Boundaries of Project

The Comprehensive Habitat Management Program will be applicable to the LAR, within Sacramento County. The geographic boundaries of the project will extend from Folsom Dam to the confluence of the American River and Sacramento rivers.

c. Expected Benefit(s)

The Comprehensive Habitat Management Program will focus on high-risk species and the habitats that support those species, all of which have experienced great declines in the LAR. The demonstration habitat restoration projects (proposed separately by SAFCA) overseen by the Comprehensive Habitat Management Program will benefit priority species such as steelhead and splittail, and will benefit secondary priority species including striped bass and migratory birds. The priority habitats under the program which support the priority species include seasonal wetland and aquatic habitat, instream aquatic habitat, and shaded riverine aquatic habitat. Because the restoration actions will be coordinated with other ongoing and planned actions, and will be incorporated into a long-term plan for the lower American River, the effectiveness of the actions in providing benefits to priority species and habitats will be increased. Results of the monitoring, evaluation and management program will be used to recommend changes in management for optimal management of resources on the LAR.

To identify appropriate restoration actions for the LAR, the Comprehensive Habitat Management Program will prioritize use of natural processes to accomplish restoration objectives where feasible. For example, although restoration of the natural hydrograph as it originally occurred in the LAR is not feasible, optimization of releases from Folsom Dam could maintain the coldwater pool for a greater period of the year, potentially reducing summer temperatures in the LAR and providing better rearing conditions for juvenile steelhead. Non-ecosystem benefits include developing information to increase compatibility of habitat restoration with flood control.

d. Background and Biological/Technical Justification

Historically, over 125 miles of riverine habitat were available for anadromous fish in the American River system. In 1955, with the completion of Nimbus Dam, upstream access to the river was blocked, and all anadromous fishes are now restricted to the lower 23 miles of the LAR. Natural steelhead production in the LAR is currently limited by summer rearing temperatures. In this context, the most effective management of the priority species and habitats in the LAR will be a combination of optimal management of flow and cold water releases from Folsom Dam with actions to restore habitat which will support these species. Through the participation of many diverse interest groups on the LAR, including the Water Forum stakeholders, the LAR Task Force, and the LAR Technical Team, a Comprehensive Habitat Management Program is being proposed to coordinate restoration efforts and facilitate implementation of management efforts in an expeditious manner. Additionally, the

institutional framework that will be given to the Program and associated habitat restoration projects by incorporating them into the Sacramento Area Water Forum Agreement and SAFCA's Floodway Management Plan will increase the long-term effectiveness of the project and the durability of the biological benefits.

e. Proposed Scope of Work

- Task 1: *Establish a Technical Assistance Team.* The team will include fisheries and water resource experts to guide restoration actions on the American River. The team will also coordinate schedules, deliverables, and budgets.
- Task 2: *Develop a monitoring, evaluation and management plan.* The plan will specify sampling methods, monitoring schedule, and participants. The plan will also establish a process for evaluation of monitoring results, including a process for assessment of projects already implemented and future project feasibility and appropriateness. A reporting process of all results will be developed. The plan will identify a process for using monitoring and evaluation results to adaptively manage the LAR. DELIVERABLE: Monitoring and Evaluation Plan.
- Task 3: *Develop a uniform protocol for application of a hydraulic model.* To test and demonstrate hydraulic verification protocols, five case studies will be applied using proposed guidelines at specific sites where restoration, mitigation, or channel clearing is under consideration. Standardized criteria will be developed to support acceptance, rejection, or recommend redesign of proposals to change channel conditions to meet ecosystem and floodway objectives. DELIVERABLE: Final report describing guidelines for application of a hydraulic model.
- Task 4: *Implement monitoring and evaluation program.* Data collection and evaluation will be carried out according to the monitoring and evaluation plan developed in Task 2. DELIVERABLE: Annual reports to CALFED and Comprehensive Habitat Management Program participants.
- Task 5: *Prepare progress reports.* As part of invoicing activities, progress reports will be prepared, describing key activities performed and deliverables submitted during the invoicing period. Included in these reports will be financial statements describing funds spent and remaining. DELIVERABLE: Progress Reports.

f. Monitoring and Data Evaluation

The proposed project is designed to be a comprehensive monitoring and evaluation program for the lower American River, to coordinate restoration actions and to provide guidance for future actions. There are two, distinct monitoring components of the Comprehensive Habitat Management Program. First, monitoring of demonstration habitat restoration projects (proposed separately) will be coordinated and conducted through this program to increase efficiency and cost-effectiveness. This effort will focus on evaluation of preferential use of habitats by priority species, compared to control (untreated) areas. This assessment will determine whether the project has successfully provided habitat for the priority species.

The second component is an overall assessment of population trends of indicator fish species in the LAR to evaluate the ecosystem health and function of the LAR. This effort will integrate ongoing monitoring on the LAR, including monitoring associated with the Central Valley Project Improvement Act (CVPIA), the Comprehensive Assessment and Monitoring Program (CAMP), and the continued monitoring project by the California Department of Fish and Game (CDFG) originally associated with the *Environmental Defense Fund vs. East Bay MUD* litigation. It is anticipated that CDFG and other resource agencies would participate in developing and implementing the program, and would be potential participants in data collection.

The results of monitoring and evaluations conducted will be assessed by the Technical Assistance Team to recommend modifications to management actions if necessary, and to determine the success of the demonstration projects in meeting program objectives.

g. Implementability

Compliance with laws and regulations for the Comprehensive Habitat Management Program will include obtaining scientific collecting permits. In the event that steelhead are listed by NMFS, monitoring of steelhead will require Section 10 ESA permits.

An integral component of the Program is the coordination of projects on the LAR. A stated goal of the Floodway Management Program for the LAR is to provide a planning mechanism and institutional framework to be used by SAFCA and the LAR Task Force to coordinate flood control and environmental management activities with local, state, and federal agencies and other entities. Additionally, the AFRP supports development of a riparian corridor management program.

Local support for this program and the associated habitat restoration projects is very strong, including the Sacramento Area Water Forum, representing 46 stakeholders, the City/County Office of Metropolitan Water Planning, and the LAR Task Force which is comprised of 8 Community Groups, 6 Environmental Interests, 2 Recreation Interests, 8 Flood Control Agencies, and 3 Resource Agencies (*see attached Statement of Support*). These groups will continue to participate in the process and provide input to the Technical Assistance Team.

IV. COSTS AND SCHEDULE TO IMPLEMENT PROPOSED PROJECT

a. Budget Costs

SAFCA is proposed to cost-share the Comprehensive Habitat Management Program with CALFED. Costs of the program include \$121,000 to conduct quarterly meetings of the Technical Assistance Team for three years. A plan for habitat management and monitoring will cost \$154,000 to complete within six months. Development of a hydraulic model verification protocol and criteria, with five case studies, will cost \$38,500 for engineering, geotechnical, and environmental technical support. Implementation of the habitat management and monitoring program will cost \$495,000 for three years. It is anticipated that CDFG would participate in data collection activities. Conducting monitoring for several demonstration projects (proposed separately) under the auspices of the Comprehensive Habitat Management Program will increase efficiency and reduce overall costs of the program. SAFCA has dedicated funds to match CALFED and CVPIA funds for habitat restoration in the LAR including 50% of the proposed Comprehensive Habitat Management Program. Costs associated with preparation of monthly progress reports will be included in overhead expenses.

b. Schedule Milestones

Task 1, establishing a Technical Assistance Team, will be completed in fall 1997. The Team will be formed from the members of the Lower American River Technical Team, including fisheries and water resource experts. Task 2, development of a monitoring and evaluation plan, will be completed within six months, by early 1998. Task 3, development of a protocol for application of a hydraulic model, will be completed in 1998. Task 4, implementation of the monitoring and evaluation plan, will begin following completion of the plan in 1998. This task will continue for three years, 1998-2001. Task 5, preparation of progress reports, will be completed as part of monthly invoicing activities.

c. Third Party Impacts

The proposed Comprehensive Habitat Management Program itself would be unlikely to have any negative third party impacts. The program would, however, be expected to provide valuable information on the ecosystem health of the lower American River and the success of the restoration actions to interested parties on the American River and to parties involved in restoration in other watersheds.

V. APPLICANT QUALIFICATIONS

SAFCA is the Project Sponsor. SAFCA and the Water Forum have assembled a team of resource consultants to conduct the proposed study. Surface Water Resources, Inc. (SWRI) and Jones and Stokes Associates (JSA) are proposed to coordinate efforts and conduct monitoring. SWRI and JSA were selected as SAFCA consultants for this project because of their extensive individual and corporate experience in ecological resources issues, particularly aquatic issues, and planning processes in the lower American River, the Central Valley, and the Bay-Delta. The proposed project team does not have any conflicts of interest.

Project Coordination - Timothy Washburn, Agency Counsel
Project Management & Design - Paul Bratovich, M.S., Senior Scientist
Project Management & Design- Steve Chainey, M.S., Senior Ecologist
Aquatic Monitoring & Sampling Design- Michael Bryan, Ph.D., Aquatic Ecologist
Aquatic Monitoring & Sampling Design- Thomas Cannon, M.S., Senior Ecologist
Hydraulic Modeling- George "Buzz" Link, P.E., Senior Water Resources Engineer
Aquatic Monitoring and Endangered Species - Amy Harris, Aquatic Ecologist

TIMOTHY WASHBURN is the General Counsel for the Sacramento Area Flood Control Agency with responsibility for planning and environmental review of regional flood control projects, supervision of consulting engineers, biologists, and associate counsels in preparation of project reports and related documents. Other activities include coordination of planning activities with the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, State Reclamation Board, State Department of Water Resources, State Department of Fish and Game, State Historic Preservation Officer, City of Sacramento, County of Sacramento, County of Sutter, Reclamation District 1000, and the American River Flood Control District. Notable projects include the American River Watershed Investigation, Natomas Area Flood Control Improvement Project, Natomas Basin Habitat Conservation Plan, and Interim Reoperation of Folsom Dam and Reservoir.

PAUL M. BRATOVICH, M.S. has worked as a fisheries consultant and water resources specialist in California for the past 15 years. As a recognized fisheries expert of Central Valley streams and the Bay/Delta, with particular expertise on the American River, he is actively participating in a broad range of forums in a variety of consultative, advisory, and technical expert capacities. For example, Mr. Bratovich is presently serving as a lead consultant to the Sacramento Area Water Forum on behalf of the joint Sacramento City-County Office of Metropolitan Water Planning. As a fisheries expert on the Bay/Delta Oversight Council, Mr. Bratovich served on both the Aquatic Resources Technical Advisory Committee and on the Lower Sacramento River and Delta Tributaries Technical Team. As part of the Anadromous Fish Restoration Program (AFRP) of the Central Valley Project Improvement Act (CVPIA), he was assigned responsibility for the American and Yuba rivers, and continues to provide technical expertise regarding instream flow and habitat issues to the U.S. Fish & Wildlife Service. Mr. Bratovich has participated in a variety of other interagency consultative teams including the Interagency Ecological Program (IEP) Resident Fish Project Work Team and the Delta Smelt and Sacramento Splittail Co-applicants Technical Subcommittee, and continues to serve as a technical expert of the Lower American River Operations Working Group and the Alameda County Superior

Court Lower American River Technical Advisory Committee in support of the Environmental Defense Fund (EDF) et al. vs. East Bay Municipal Utility District (EBMUD).

He has served as Principal-in-Charge on a number of project initiatives regarding lower American River fisheries issues and has been responsible for the design, implementation, and report preparation of multi-faceted aquatic ecology investigations of the lower American River. Investigative elements have included habitat classification and mapping, application of the Instream Flow Incremental Methodology (IFIM), estimation of chinook salmon abundance and distribution by habitat type, chinook salmon micro-habitat suitability data acquisition, and water temperature monitoring including the preparation of a water temperature calibration report for Folsom Reservoir and the lower American River.

STEVE CHAINEY, M.S., is a restoration ecologist, specializing in environmental mediation, riparian ecology, hydrogeomorphology, restoration planning, design, and supervision, riparian and wetland revegetation, natural resources master planning, and environmental impact studies. He will be responsible for managing the restoration project. His experience on the lower American River includes the Lower American River Bank Stabilization Project for the Corps of Engineers and the Lower American River Task Force.

MICHAEL D. BRYAN, PH.D., holds a doctorate degree in fisheries biology and toxicology, and has over 10 years of combined research and consulting experience. He has extensive expertise in the areas of environmental toxicology, ecological risk assessment, fisheries biology, aquatic ecology, experimental design and statistics. His past work has focused on the toxicological effects of heavy metals, organophosphorus insecticides, stormwater runoff and wastewater treatment plant effluent on freshwater aquatic organisms. Recently, Dr. Bryan developed the experimental design and field sampling procedures and coordinated field work activities for a North American sediment contamination survey to determine the range of concentrations of polydimethylsiloxanes (PDMS) in marine and fresh water sediments. Dr. Bryan's other recent projects have involved serving as a fisheries expert on behalf of the Anadromous Fish Restoration Program of the Central Valley Project Improvement Act (CVPIA), monitoring urban stormwater runoff water quality, identifying causes for recent declines in Bay/Delta fishery resources, evaluating potential fisheries impacts from Folsom Reservoir operations, and conducting fisheries field surveys in the Central Valley.

THOMAS CANNON, M.S., as an aquatic ecologist and biostatistician, his experience in the Bay-Delta and its tributary watersheds dates back 20 years. Most recently he participated in various activities relating to ecological restoration of the LAR, including supporting CALFED staff in preparing the American River Vision of the ERPP, supporting EBMUD in evaluating the Water Forum's program for the LAR, and as a consultant to SAFCA in developing a floodway management plan for the LAR. Mr. Cannon also participated in efforts to develop a Water Management Plan for the American River for the USFWS under the CVPIA program.

GEORGE "BUZZ" LINK has over 22 years experience in real-time operation, analysis, and management of water and power systems. Mr. Link has special expertise in the development and application of mathematical computer models for water and power operations for planning purposes that incorporate water supply, water quality, power supply, flood control, recreation, and fish and wildlife considerations. Mr. Link is a registered professional engineer in the state of California. Prior to

becoming president of Surface Water Resources, Incorporated, Mr. Link served as a water and power resources engineer with both Water Resources Management, Inc. and Resource Management International, and as a hydraulic engineer with the U.S. Bureau of Reclamation. Mr. Link developed operation simulation models for the U.S. Bureau of Reclamation that evaluate water and hydroelectric project attributes of existing and planned Central Valley Project facilities. These models facilitate evaluation of alternative water and hydroelectric project features and configurations and their effects on water supply and power generation.

AMY HARRIS is an aquatic ecologist with a strong background in biological sciences. Her expertise is in design and implementation of monitoring programs for freshwater ecosystems. Ms. Harris has prepared and provided support for aquatic and terrestrial resource impact analyses for CEQA and NEPA documents. She has conducted aquatic and terrestrial surveys for use in habitat monitoring and planning, including riparian vegetation surveys along the southern Oregon coast and freshwater fisheries habitat in the lower Cosumnes River in California. She has also been involved in habitat restoration planning and implementation projects in the Central Valley.

VI. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

The standard terms and conditions are agreeable, and SAFCA will be in compliance with the terms and conditions.

Cost

Comprehensive Habitat Management Program									
Project Phase and Task	Direct Labor Hours	Direct Salary and Benefits	Overhead Labor	Service Contracts		Materials	Misc. and Direct Costs	Total Cost	Subtotal/ Task
				Labor	Materials				
Task 1: Technical Assistance Team			\$11,000	\$110,000					\$121,000
Task 2: Management/Monitoring Plan			\$14,000	\$140,000					\$154,000
Task 3: Hydraulic Model Protocol			\$3,500	\$35,000					\$38,500
Task 4: Implement Management/Monitoring Plan			\$45,000	\$450,000					\$495,000
Task 5: Progress Reports									
Contingency (10 percent)									\$80,850
Subtotal			\$73,500	\$735,000					
								Total Cost of Project	\$889,350

PROJECT COST SHARING			
Project Phase and Task	Total Cost by Task	CALFED Cost Share	SAFCA Cost Share
Task 1: Technical Assistance Team	\$121,000	\$60,500	\$60,500
Task 2: Management Monitoring Plan	\$154,000	\$77,000	\$77,000
Task 3: Hydraulic Model Protocol	\$38,500	\$19,250	\$19,250
Task 4: Implement Management/Monitoring Plan	\$495,000	\$247,500	\$247,500
Task 5: Progress Reports		\$0	\$0
Contingency (10 percent)	\$80,850	\$40,425	\$40,425
Total	\$889,350	\$444,675	\$444,675

1-006702

1-006702

NONDISCRIMINATION COMPLIANCE STATEMENT

COMPANY NAME

Sacramento Area Flood Control Agency

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

F.I. Hodgkins

DATE EXECUTED

July 24, 1997

EXECUTED IN THE COUNTY OF

Sacramento

PROSPECTIVE CONTRACTOR'S SIGNATURE

PROSPECTIVE CONTRACTOR'S TITLE

Executive Director

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

Sacramento Area Flood Control Agency

**NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY
BIDDER AND SUBMITTED WITH BID FOR PUBLIC WORKS**

STATE OF CALIFORNIA)
)ss
COUNTY OF Sacramento)

F. I. Hodgkins, being first duly sworn, deposes and
(name)
says that he or she is Executive Director of
(position title)
Sacramento Area Flood Control Agency
(the bidder)

the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

DATED: July 24, 1997 By [Signature]
(person signing for bidder)



(Notarial Seal)

Subscribed and sworn to before me on

July 24, 1997
[Signature]
(Notary Public)

Lower American River Task Force

STATEMENT OF SUPPORT

for

CALFED APPLICATION

(Ratified by the Lower American River Task Force on July 15, 1997)

The Lower American River Task Force has reviewed and supports the attached application to CALFED for restoration of key sites on the Lower American River. We strongly urge that these valuable projects be funded. They will provide critical information for the development of restoration opportunities for this important river system.

Community Groups

1. American River Parkway Foundation
2. California State University, Sacramento
3. Campus Commons Park Corporation
4. Citizens-at-Large
5. Dos Rios Neighborhood Association
6. Natomas Community Association
7. River Park Neighborhood Association
8. Sierra Oaks Neighborhood Association

Environmental Interests

1. Environmental Council of Sacramento (EDOS)
2. Environmental Defense Fund
3. Friends of the River
4. Protect American River Canyons (PARC)
5. Save the American River Association (SARA)
6. Sierra Club, Mother Lode Chapter

Flood Control Agencies

1. American River Flood Control District
2. City of Sacramento Utilities
3. City of West Sacramento
4. Reclamation District 900
5. Reclamation District 1000
6. Sacramento Area Flood Control Agency (SAFCA)
7. State Reclamation Board
8. State Department of Water Resources

Recreation Interests

1. California Exposition and State Fair
2. Sacramento County Parks and Recreation

Resource Agencies

1. State Department of Fish and Game
2. State Lands Commission
3. U.S. Fish and Wildlife Service