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San Francisco Bay Area Wetlands Ecosystem Goals Project

San Francisco Estuary Institute
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Non-Profit Research Institute
[501(c)3]

Tax Identification No. 94-2951373

Principal Investigator/Technical Contact: Dr. Josh Collins
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Financial Contact: Ms. Margaret Johnston
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This proposal is submitted in collaboration with the members of the
Resource Managers Group
of the
San Francisco Bay Area Wetlands Ecosystem Goals Project

RFP Project Group Type: Other Services

I. EXECUTIVE SUMMARY

A. Project Title and Applicant Name—

San Francisco Bay Area Wetlands Ecosystem Goals Project
San Francisco Estuary Institute

B. Project Description and Primary Biological/Ecological Objectives --

The Goals Project is a multi-agency, interdisciplinary planning effort whose main objective is to identify the kinds, amounts, and distribution of wetlands and related habitats needed to sustain diverse and healthy communities of fish and wildlife resources in the San Francisco Bay area. When completed, the goals will provide guidance for private, local, state, and federal entities seeking to protect and improve the region's wetlands. The habitat goals will also provide the biological basis for a regional wetlands management plan, the development of which is scheduled to begin in mid-1998.

In collaboration with members of the Goals Project's Resource Managers Group, the San Francisco Estuary Institute (SFEI) is seeking CALFED funding to complete wetlands habitat goals for the North Bay and Suisun Bay sub-regions.

C. Approach/Tasks/Schedule —

Participants in the Goals Project have worked for two years towards establishing habitat goals. The process has included identifying the Bayland's wetlands habitats and representative species of plants, fish, and wildlife that inhabit them; assembling and analyzing data and other information regarding historical and current distributions of habitats and species; and describing the ecological relationships between the habitats and species. Project technical teams are now beginning to prepare habitat recommendations, these recommendations will be combined into an integrated set of recommendations for the amounts and distribution of the various wetland habitat types. The goals will be expressed as quantitative and qualitative objectives and will be described in narratives and in maps and other graphics.

Staff of the San Francisco Estuary Institute have provided technical assistance and support to the Goals Project participants throughout the life of the project. In assisting participants to complete the preparation of habitat goals for the North Bay and Suisun Bay sub-regions, SFEI will conduct nine tasks between October 1997 and May 1998:

1. Digitize combined focus team map and derive habitat metrics. The map and attendant metrics — acreages of each major habitat type, range of habitat patch sizes, and the mix of minor habitats — will form the basis of the project's preliminary habitat recommendations.
2. Develop a simple scenario planning model to facilitate habitat scenario planning using SFEI's GIS, the EcoAtlas.
3. Apply the model developed in Task 2 to help project participants quickly develop several alternative scenarios using the EcoAtlas to illustrate various ways of attaining habitat goals.
4. Distribute the EcoAtlas to all of the RMG agencies and assist appropriate staff in its use.
5. Assist Goals Project participants to prepare a draft Habitat Goals document for public review and comment. This report will provide background information on the Goals Project and process, and it will present the goals in narrative and graphic formats.

6. Prepare large-format poster displays of the technical team materials and the draft goals for presentations at three public workshops.
7. Assist Goals Project participants to prepare a final Habitat Goals document for public dissemination.
8. Assist the Goals Project participants to prepare a Baylands Ecosystem report that describes the Baylands species, habitats, and the functional relationships between species and habitats. SFEI will assist in assembling, editing, and publishing the report.
9. Provide technical and science support to the Resource Managers Group, technical focus teams, and Hydrogeomorphic Advisory Team.

D. Justification for Project and Funding by CALFED —

Regional wetlands habitat goals are needed for several reasons: To provide integrated guidance with a regional perspective for entities seeking to restore and improve wetlands; to provide the biological basis for a regional wetlands management plan; to help resources agencies develop a consensus regarding the values of various wetlands types; and to assist CALFED in deciding appropriate wetlands projects to fund. In particular, the habitat goals will provide CALFED a stronger scientific basis on which to base decisions regarding the restoration of certain kinds of wetlands in the North Bay and Suisun Bay sub-regions as described in the CALFED Environmental Restoration Program Plan.

E. Budget Costs and Third Party Impacts —

The Goals Project has received funding from a variety of local, state, and federal entities. Direct funding to date totals \$643,000. In addition, more than one hundred technical experts from the private and public sectors have contributed in-kind services valued at about \$932,000.

SFEI and the Resource Managers Group seeks \$76,053 from CALFED to complete the habitat goals for the North Bay and Suisun Bay sub-regions. We estimate that project participants will contribute about \$200,000 of in-kind services to complete the goals in these areas.

We believe there will be no direct third party impacts resulting from the preparation of habitat goals for the North Bay and Suisun Bay sub-regions.

F. Applicant Qualifications —

SFEI has provided science guidance and technical support to the San Francisco Bay Area Wetlands Ecosystem Goals Project for more than two years. At SFEI, Dr. Joshua Collins is the primary technical contact. At the request of the Resource Managers Group and under the direction of the S.F. Bay Regional Water Quality Control Board, Dr. Collins undertakes specific tasks. As appropriate, Dr. Collins also directs his staff to undertake specific tasks. Staff include Mr. Robin Grossinger, Mr. Zoltan Der, and Ms. Adrienne Yang.

G. Monitoring and Data Evaluation —

The project entails no monitoring. Monitoring of wetlands projects will be a part of future implementation. Data sets in the SFEI GIS include appropriate metadata.

H. Local Support/Coordination/Compatibility with CALFED Objectives —

The Goals Project enjoys extensive support from dozens of local, state, and federal agencies and from the private sector. It is well coordinated with many government wetlands habitat and regulatory programs and is completely compatible with CALFED

II. TITLE PAGE

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RFP Project Group Type: Other Services

III. PROJECT DESCRIPTION

A. Project Description and Approach —

In June 1993, the Governor of California and the Administrator of the U.S. Environmental Protection Agency signed the San Francisco Estuary Project's Comprehensive Conservation and Management Plan. The plan recommends establishing regional wetland habitat goals for use as the basis of a regional wetlands management plan to protect, enhance, restore, and create wetlands in the San Francisco Bay-Delta Estuary. Subsequently, representatives of state and federal resource agencies involved in wetlands regulation and management began meeting with staff of the San Francisco Estuary Institute to design a process for establishing these goals. These discussions led to the initiation in mid-1995, of the San Francisco Bay Area Wetlands Ecosystem Goals Project.

The Goals Project is using available information to identify the kinds, amounts, and distribution of wetlands and related habitats needed to sustain diverse and healthy communities of fish and wildlife resources in the San Francisco Bay area. When completed, the goals will provide guidance for private, local, state, and federal entities seeking to protect and improve the region's wetlands.

The Goals Project is directed by the Resource Managers Group (RMG), representative of eight state and federal agencies with major responsibilities for Bay area wetlands. Assisting the RMG are teams of species experts, physical scientists, and a science review group; in total, more than 100 scientists are volunteering in the effort. The San Francisco Estuary Institute provides project participants with technical guidance and analytical support, and the San Francisco Bay Regional Water Quality Control Board assists with project administration. Funding has come from several local, state, and federal sources.

Establishing the habitat goals involves several steps. These include identifying the bayland's wetland habitats and the representative species of plants, fish, and wildlife that inhabit them; assembling and analyzing data and other information regarding historical and current distributions of habitats and species; describing the ecological relationships between the habitats and species; and, finally, recommending the amounts and distribution of the various wetland habitat types. The goals will be expressed as quantitative and qualitative objectives and will be described in narratives and in maps and other graphics.

In the coming months, the project will issue draft habitat goals for public review and comment. It also will host three public workshops to describe the goals and to explain how they were developed. Based on the public comments on the draft goals, and on any new information developed by the technical teams, project participants will prepare and issue final habitat goals in Spring of 1998.

B. Geographic Boundaries of the Project —

The geographic scope of the Goals Project includes the four primary sub-regions of the Estuary downstream of the Sacramento-San Joaquin Delta: Suisun Marsh and Bay, San Pablo Bay, Central San Francisco Bay, and South San Francisco Bay.

This proposal for Calfed Category III funding is limited to the project's North Bay sub-regions: Suisun Marsh and Bay, and San Pablo Bay.

C. Expected Benefits —

The Goals Project is addressing many of the stressors identified in the CALFED Implementation Strategy, and will lead to major improvements for nearly all of the CALFED species and habitats in the North Bay and Suisun Bay sub-regions.

Stressors —

1. Alteration of Flows and other Effects of Water Management

Migration Barriers and Straying. The project will make recommendations for extensive tidal marsh restoration in the North Bay and Suisun Bay sub-regions. Marsh restoration will entail removing dikes that currently are blocking movement of many species of fish and other aquatic organisms of interest to CALFED.

2. Floodplain and Marshplain Changes

Hydrological Isolation of Floodplain or Marshplain. Restoration of tidal flows on thousands of acres of the historic floodplain will allow increased sediment deposition in the floodplain, addition of organic carbon to the Bay aquatic ecosystem, and re-establishment of rearing and spawning habitat for scores of estuarine fishes.

Physical Isolation of Floodplain or Marshplain. Project recommendations will call for decreased habitat fragmentation, increased habitat patch size, and restoration of the connectivity of the wetlands to the Estuary's waters.

Elimination of Fine Sediment Replenishment. Tidal marsh restoration will greatly increase the volume of sediment able to reach the historic floodplain, with concomitant enhancement of ecological and physical functions associated with that floodplain.

3. Channel Form Changes

Alteration of Channel Form. Participants of the Goals Project, especially the Fish Focus Team, are very interested in providing adequate habitat for native aquatic species. Habitat goals will foster the restoration of a diversity of shallow channels using natural processes. Likewise, they will seek to restore natural channel meanders in the tidal marshes and along tributary streams, and to reduce the isolation of sidechannels and tributaries. The inclusion of physical scientists with expertise in hydrodynamics, sediment transport, and tidal marsh restoration will ensure that the project addresses these issues.

Loss of Riparian Zone or Lack of Regeneration Potential. Nearly all of the tributaries to the North Bay and Suisun Bay have lost extensive stands of riparian vegetation. Recognizing the importance of linking the Baylands to the adjacent uplands, the Goals Project will be making recommendations regarding riparian restoration and connectivity. These may include removing levees or reestablishing riparian vegetation.

4. Water Quality

Increased Contaminants. The restoration of wetlands in the North Bay and Suisun Bay sub-regions will greatly increase the area of the floodplain. The tidal marshes that become established there will help sequester trace elements and some organic contaminants. Some of these materials will be trapped in the marsh sediments, and others will be converted to less harmful forms.

Increased Nutrient Input. The restoration of tidal and seasonal wetlands in the North Bay

and Suisun Bay sub-regions will help reduce nutrient loadings to the Estuary from non-point runoff.

Increased Mobilization of Contaminants Due to Dredging In many parts of the North Bay, diking and farming have lowered the elevation of the land surface. The disposal of dredged material at such sites prior to restoring tidal flows could speed up marsh formation.

5. Water Temperature

Goals Project recommendations will include extensive riparian restoration which should improve temperature regimes of many North Bay streams.

6. Undesirable Species Interactions

Competition from Introduced Plants. Several undesirable plant species are becoming well established in the Bay area. These include smooth cordgrass, pepperweed, and *Arundo*. The Goals Project likely will make strong recommendations regarding their management.

7. Adverse Fish and Wildlife Harvest Impacts

The Goals Project will likely have little bearing on this stressor.

8. Population Management

The Goals Project will likely have little bearing on this stressor.

9. Land Use

Grazing. The Goals Project will make recommendations regarding grazing and other land uses that occur adjacent to the tributaries in the North Bay and Suisun Bay sub-regions.

Urbanization. Urbanization is one of the key threats to the North Bay's remaining wetlands and areas suitable for wetlands restoration. Although the Goals Project will not directly affect land use decisions, it will provide biological guidance for city and county planners.

10. Human Disturbance

The Bay area's six million human inhabitants pose a serious threat to many valuable wetlands. Bicyclists, hikers, dog-walkers, and others seek out the wetlands open space as part of the "Bay" experience. Conflicts between these users and among the resource agencies tasked with wetlands protection are not uncommon. The Goals Project will likely recommend ways to minimize the effects of recreational uses on the area's wetlands.

Priority Species —

Restoring large expanses of tidal marshes and their networks of channels in the North Bay and Suisun Bay areas will benefit many of the CALFED Priority Species, including winter-run chinook salmon, spring-run chinook salmon, late-fall-run chinook salmon, Delta smelt, longfin smelt, splittail, steelhead trout, striped bass, and migratory birds.

Priority Habitats —

The Goals Project will make recommendations regarding the amount and distribution of many of the CALFED Priority Habitats that occur in the North Bay and in Suisun, including tidal perennial aquatic habitat, seasonal wetlands and aquatic habitat, instream aquatic habitat, shaded riverine aquatic habitat, and saline emergent wetlands habitat.

The restoration and enhancement of these habitats will provide myriad benefits to hundreds of species of fish and wildlife by increasing resting, foraging, nursery, and escape habitat. They also will enhance flood water retention, improve water quality, provide recreational opportunities, and secure large areas as open space.

At this time, it is too early to quantify the recommendations that will be forthcoming from the Goals Project. Discussions of the project's technical teams, however, indicate that habitat goals will call for extensive (i.e., thousands of acres) tidal marsh restoration, protection and improvement of seasonal wetland functions, and the reestablishment of riparian vegetation along many of the streams that flow into the North Bay and Suisun Bay. The Goals Project represents the most comprehensive attempt at developing a biological vision for the Baylands. One of the key benefits of the project will be the development of an integrated, ecosystem approach at improving and restoring wetlands and associated habitats throughout this major component of the Bay-Delta Estuary. It will help CALFED participants refine their habitat restoration targets, and it also should assist many of the resource agencies to agree on a coherent strategy for improving North Bay wetlands.

Many entities interested in undertaking efforts to protect or improve wetlands will benefit from the work of the Goals Project. Some of the agencies likely to use the goals as guidance include the agencies of the Resource Managers Group and Administrative Core Team (see Section V). Other entities likely to use the goals include open space districts, park and resource conservation districts, land preservation groups, and private developers.

D. Background and Biological/Technical Justification —

In the past hundred years, some 80 percent of San Francisco Bay's wetlands were filled or converted to other uses. These massive habitat changes simplified the Bay's ecosystem, reduced populations of many species, and resulted in the listing of several species as threatened or endangered. In recent years, the rate of wetland loss declined and public support for wetlands restoration increased. By the early 1990s, however, there was still no collective vision for the kinds of habitat changes that were needed, and many agencies had diametrically opposing views regarding the relative values of various types of wetlands. This state of affairs certainly did not exemplify effective government.

The Goals Project seeks to develop consensus-based recommendations for restoring and enhancing the Estuary's wetlands downstream of the Delta. It is focused primarily on the habitats of the Baylands — historical and modern tidal and subtidal areas — and on adjacent lands and waters that are higher than tidal elevations but required to maintain populations of plants and animals that mainly inhabit the Baylands. The project will develop goals for about a dozen major habitat types.

Dr. Joshua Collins of SFEI developed the initial technical approach for establishing habitat goals. The approach is species-based and requires assessing the habitat needs of representative keystone species, and determining the appropriate amounts and distribution of their supporting habitats. The Resource Managers Group modified this approach somewhat in 1995. And recently, the project's Science Review Group approved the approach.

E. Proposed Scope of Work —

Completing the habitat goals will require several tasks. These tasks will be undertaken by

SFEI staff for all four of the Goals Project's sub-regions. Note, however, that we are requesting CALFED Category III funding only for the portion of the project in the North Bay and Suisun Bay sub-regions. Tasks include:

Task 1. Digitize Combined Focus Team Map and Derive Habitat Metrics

In the coming months, the five technical focus teams are expected to prepare an integrated view of their respective habitat recommendations. SFEI staff will digitize and geo-reference this map in their geographic information system (EcoAtlas). They then will derive habitat measurements or metrics including the acreages of each major habitat in the four project sub-regions, the range of habitat patch sizes, and the mix of minor habitats within the major habitat patches. This map and the attendant metrics will form the basis of the project's preliminary habitat recommendations.

Task 2. Development of a Scenario Planning Model

To automate metric analysis and to facilitate the development of habitat planning scenarios using the EcoAtlas, SFEI staff will develop a simple model that computes, for each habitat type and for any sub-region, size-frequency distribution, area, and perimeter length. In addition, the model will derive mixtures of minor habitat types.

Task 3. Scenario Planning

Using the EcoAtlas and the habitat map described in Task 1, and applying the model developed in Task 2, SFEI staff will work with project participants to develop several alternative scenarios in the EcoAtlas to illustrate various ways of attaining the goals. Participants will likely want to evaluate four or five alternative scenarios.

Task 4. Distribution of EcoAtlas to State and Federal Agencies

The SFEI EcoAtlas is a powerful, state-of-the-art tool for understanding the historical and modern conditions of the Baylands. But its utility for state and federal resource agencies can be maximized only if their staff are able to use it. Under this task, SFEI staff will distribute the EcoAtlas to all of the RMG agencies and assist appropriate staff in its use.

Task 5. Prepare Draft Habitat Goals Document

SFEI staff will assist Goals Project participants to prepare a draft Habitat Goals document for public review and comment. This report will present background information on the Goals Project, describe the process for establishing the habitat goals, and present the goals in narrative and in graphic formats. The report will be relatively plain, produced in black and white, and about 50 pages in length. About 1000 copies will be printed.

Task 6. Prepare Materials for Draft Habitat Goals Workshops

The Goals Project process calls for the RMG to present draft habitat goals at three public workshops. One of the workshops will be in the South Bay, and two will be in the North Bay and Suisun areas. As was done for two recent workshops, SFEI staff will prepare large-format poster displays of the technical team materials and the draft goals.

Task 7. Prepare Final Habitat Goals Document

Based on the draft goals and on public input, the RMG will prepare final habitat goals. SFEI staff will assist Goals Project participants in preparing a final Habitat Goals document for public dissemination. This report will present background information on the Goals Project, describe the process for establishing the habitat goals, and present the goals in narrative and in graphic formats. The report will about 50 pages in length and produced in two colors. About 2000 copies will be printed for distribution.

Task 8. Prepare "Baylands Ecosystem" Report

Goals Project participants have produced several technical materials leading up to the establishment of the habitat goals. Some of this material summarizes, for the first time, information on the species utilizing the Baylands habitats. It also describes the habitats and the functional relationships between species and habitats. To ensure that this information is made available in a useable format to agencies and the public, SFEI will assist the RMG to assemble, edit, and publish this material. A draft report will be prepared for internal review; it will be relatively plain, produced in black and white, and about 350 pages in length. A final report will be produced in two colors for public distribution.

Task 9. Provide Technical and Science Support to the Resource Management Group, Technical Focus Teams, and Hydrogeomorphic Advisory Team

Since the initiation of the Goals Project, Dr. Collins has provided technical and science support to the project participants. This support has been instrumental in moving the focus teams toward preparing habitat recommendations. It will need to continue as participants prepare integrated habitat goals, and as the draft goals undergo public review.

F. Monitoring and Data Evaluation —

The Goals Project has not generated any new data. It has, however, compiled several datasets (primarily on avian resources) developed by local researchers, and has begun to analyze these data. The SFEI GIS (EcoAtlas) includes many data sets, and the metadata information for these datasets have been prepared in accordance with federal standards. Many of the data sets used by project participants to formulate the goals will be made available to interested parties through SFEI.

The Goals Project's Science Review Group provides overall guidance on process, and it will oversee peer review of the draft goals document, the draft "Baylands Ecosystem" report, and other project products, as appropriate. Members of the SRG are listed in Section V.

Wetland projects implemented in accordance with the habitat goals should include monitoring of many physical and biological parameters. Monitoring plans will be developed by project sponsors, and should comply with appropriate monitoring design and protocols.

G. Implementability —

The Goals Project is a unique, multi-agency effort to establish habitat goals for the Bay Area. The goals will be implemented by many entities including private and public landowners, local planning agencies, land conservation organizations, and state and federal resource agencies. All implementation actions will need to be conducted in accordance with relevant laws and regulations.

To ensure widespread public support of the goals, the project has funded the San Francisco Estuary Project to undertake public outreach. Outreach has included the preparation of a project information package, a brochure, and presentations at more than two dozen meetings of decisionmakers and special interest groups. Two public "progress report" workshops were held on July 15 and 17 of this year.

IV. COSTS AND SCHEDULE TO IMPLEMENT PROPOSED PROJECT

A. Budget Costs —

Since its initiation, nine public entities have provided funding for the Goals Project. These include the City of San Jose, State Office of Oil Spill Prevention and Response, San Francisco Bay Regional Water Quality Control Board, Sausalito-Marín City Sanitation District, Shell Oil Spill Trustees, State Resources Agency, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service. The total amount provided by these entities is \$643,000. Compared to other large-scale landscape planning efforts, such as the EPA-sponsored work in the Willamette Valley of Oregon and the U.S. Fish and Wildlife Service work in coastal Southern California, the Goals Project has received relatively modest funding.

More than one hundred technical experts from the private sector and local, state, and federal agencies have participated on the Goals Project. A conservative estimate of the value of this in-kind service is \$932,000. Therefore, the total amount of funding and in-kind services applied to the project thus far is \$1,575,000.

Even with the extensive funding and in-kind services provided by the community to date, additional funds are required to complete the habitat goals. **Table 1** displays the cost breakdown for all project activities and products necessary to complete goals for the North Bay and Suisun Bay sub-regions. The total amount SFEI and the Resource Managers Group is seeking from CALFED for the North Bay and Suisun Bay areas is \$76,053.

The cost figures in **Table 1** represent one-half of the total funding needed to complete the Goals Project. The figures were derived by developing costs for each of the nine tasks for the entire project area, then dividing each cost by one-half because the North Bay and Suisun represent one-half of the Baylands total area.

We anticipate that project participants will continue to provide their in-kind services throughout the remainder of the project. We estimate that the value of these services will be about \$400,000. The value of in-kind services to complete the goals for the North Bay and Suisun will be about \$200,000.

Funding to complete the habitat goals for Central and South San Francisco Bay will be provided by the California Department of Fish and Game and the U.S. Environmental Protection Agency. Project participants will provide \$200,000 of in-kind services.

B. Schedule Milestones —

The Goals Project's current schedule calls for releasing draft goals and conducting public workshops in mid-November 1997, and issuing final goals by the end of March 1998. Recent discussions among the RMG and the technical focus teams, however, indicate that the schedule for the draft goals and workshops will likely be extended a couple of months to allow the focus teams enough time to integrate their recommendations. Assuming a new schedule is adopted, the nine tasks described in Section E, Proposed Scope of Work, would occur as follows:

- Task 1. Digitize Combined Focus Team Map and Derive M...
- Task 2. Develop a Scenario Planning Model 8
- Task 3. Scenario Planning
- Task 4. Distribute EcoAtlas to State and Federal Agencies
- Task 5. Prepare Draft Habitat Goals
- Task 6. Prepare Materials for Technical Goals Workshops
- Task 7. Prepare Final Habitat Goals
- Task 8. Prepare "Baylands Ecosystems"
- Task 9. Provide Technical and Information to the RMG, Technical Focus on Wetlands and Hydrogeomorphic Areas

C. Third Party Impacts —

Completion of the wetlands habitat goal... Bay areas will not result in any direct third party impacts.

Table 1. Costs for Completing Wetlands Habitat Goals for San Pablo Bay and Suisun Bay Sub-regions

TASK	Direct Labor hours	Direct Salary and Benefits	Overhead, General & Admin.	Service Contracts	Miscellaneous & other direct cost	Total cost
1 Digitize map/ derive metrics	167	4,893	2,544			7,438
2 Develop Scenario Model	86	2,429	1,263			3,693
3 Scenario Planning	112	3,314	1,723			5,038
4 Distribute EcoAtlas	96	3,246	1,688		travel 116	5,050
5 Draft Goals Document	86	4,056	2,109			6,166
6 Workshop Materials	36	1,380	717		printing 300	2,397
7 Final Goals Document	60	2,014	1,047	printing 7,000		10,061
8 Baylands Ecosystem Report	172	5,481	2,850	printing 8,000		16,331
9 Technical Team Support	221	13,079	6,801			19,880
TOTAL	1,036	\$39,893	\$20,744	\$15,000	\$416	\$76,053

V. APPLICANT QUALIFICATIONS

After two years of collaboration, the Resource Managers Group, SFEI, and the San Francisco Bay Regional Water Quality Control Board have developed an effective process of managing the work conducted by SFEI for the Goals Project. Typically, the RMG or the focus teams request specific support or preparation of a product. The Regional Board Project Manager then instructs Dr. Collins to develop a cost estimate and timeline for the work. Finally, the Regional Board Project Manager directs SFEI to undertake the work and oversees its progress. This process for managing tasks has worked well, and we propose to continue using it for managing future tasks funded by CALFED, by the California Department of Fish and Game, and by the U.S. Environmental Protection Agency. Within SFEI, Dr. Collins oversees the work and coordinates the schedules of his staff: Robin Grossinger, Zoltan Der, and Adrienne Yang.

Dr. Joshua N. Collins, Environmental Scientist

Dr. Collins is an environmental scientist at the San Francisco Estuary Institute, where he coordinates an effort to set regional wetlands habitat goals and to develop a regional wetlands monitoring program for the San Francisco Bay Area. He received his Doctorate in Entomological Sciences and conducted post-doctoral research in Geography and Ecology at the Davis and Berkeley campuses of the University of California. His published research is on the hydrology, geomorphology, and plant-animal interactions of wetlands in the western United States.

Mr. Robin M. Grossinger, Environmental Analyst

Mr. Grossinger received his B.A. in Biology in 1991 and his M.S. in Marine Sciences in 1995 from the University of California at Santa Cruz. In his Masters' research, he used historical data to characterize the natural plan form of tidal marshlands in the San Francisco Bay-Delta Estuary and the effects of local freshwater inputs on subregional marsh form. At SFEI, Mr. Grossinger works on wetlands and is the Technical Director of the Historical Ecology Project. He has also worked with the Center for the Restoration of Waters in Falmouth, Massachusetts, with the Sierra Club, and has done graduate research on benthic trace metal accumulation in the Estuary. Mr. Grossinger joined the staff of SFEI in 1993.

Mr. Zoltan Der, Environmental Analyst

Mr. Der has a broad educational background which includes majors in English, Film, Environmental Science and Planning, and Geography. He is currently working on his B.A. Degree in Geography at Sonoma State University. Prior to joining the staff of SFEI in 1994, Mr. Der operated a film and video production and services company for ten years. He has designed, implemented, and maintains SFEI's GIS-based EcoAtlas.

Ms. Adrienne Yang, Editor

Ms. Yang received her B.A. in Geography from the University of California at Berkeley in 1995. She joined SFEI that year and has managed several education programs including Kids in Creeks, the annual educators conference, the Sausal Creek Watershed Awareness Program, and Teacher Action Grants. Currently, Ms. Yang edits and does layout for the Institute's various publications and fliers which include the Regional Monitoring Program's Annual Report and quarterly newsletters. She is also updating the Institute's Public Information and Outreach Strategy.

V. (Continued)

Key Groups of the San Francisco Bay Area Wetlands Ecosystem Goals Project:

Resource Managers Group

Bob Batha, San Francisco Bay Conservation and Development Commission
Dennis Becker, California Department of Fish and Game
Andree Breaux, San Francisco Bay Regional Water Quality Control Board
Joelle Buffa, U.S. Fish and Wildlife Service
Dan Cheng, National Marine Fisheries Service
Brenda Grewell, California Department of Water Resources
Nadine Hitchcock, California Coastal Conservancy
Mike Monroe U.S. Environmental Protection Agency
Ruth Pratt, U.S. Fish and Wildlife Service
Bob Tasto, California Department of Fish and Game
Carl Wilcox, California Department of Fish and Game

Science Review Group

Dr. Stephen Beissinger, U.C. Berkeley
Dr. Theodore Foin, U.C. Davis
Mr. David Hulse, University of Oregon
Dr. Luna Leopold, U.C. Berkeley
Dr. Charles Simenstad, University of Washington
Dr. Joy Zedler, San Diego State University

Administrative Core Team

Jeff Blanchfield, San Francisco Bay Conservation and Development Commission
Marcia Brockbank, San Francisco Estuary Project
Josh Collins, San Francisco Estuary Institute
Craig Denisoff, California Resources Agency
Paul Jones, U.S. Environmental Protection Agency
Mike Monroe, U.S. Environmental Protection Agency
Peggy Olofson, San Francisco Bay Regional Water Quality Control Board
Nancy Schaefer, San Francisco Bay Joint Venture
Carl Wilcox, California Department of Fish and Game

Technical Focus Teams

Plants
Fish and Macroinvertebrates
Shorebirds and Waterfowl
Other Birds
Mammals, Amphibians, Reptiles and Invertebrates

VI. Compliance with Standard Terms and Conditions

At this time, the only form required of SFEI for this proposal is the attached, signed Nondiscrimination Compliance Statement. SFEI finds agreeable all terms and conditions of the Statement.