

G1050

Attachment H

COVER SHEET (PAGE 1 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Proposal Title: Delta Watershed Monitoring Project
 Applicant Name: San Francisco BayKeeper/DeltaKeeper
 Mailing Address: Presidio Bldg. 1004, POB 29921 San Francisco, CA 94129-0921
 Telephone: (415) 561-2299, ext. 19
 Fax: (415) 561-2290

Amount of funding requested: \$ 265,200 for 1 years

Indicate the Topic for which you are applying (check only one box). Note that this is an important decision: see page of the Proposal Solicitation Package for more information.

- Fish Passage Assessment
- Floodplain and Habitat Restoration
- Fish Harvest
- Watershed Planning/Implementation
- Fish Screen Evaluations - Alternatives and Biological Priorities
- Fish Passage Improvements
- Gravel Restoration
- Species Life History Studies
- Education

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

- Sacramento River Mainstem
- Delta
- Suisun Marsh and Bay
- San Joaquin River Mainstem
- Landscape (entire Bay-Delta watershed)
- Sacramento Tributary: _____
- East Side Delta Tributary: _____
- San Joaquin Tributary: _____
- Other: _____
- North Bay: _____

Indicate the primary species which the proposal addresses (check no more than two boxes):

- San Joaquin and East-side Delta tributaries fall-run chinook salmon
- Winter-run chinook salmon
- Late-fall run chinook salmon
- Delta smelt
- Splittail
- Green sturgeon
- Migratory birds
- Spring-run chinook salmon
- Fall-run chinook salmon
- Longfin smelt
- Steelhead trout
- Striped bass Rainbow



COVER SHEET (PAGE 2 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

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

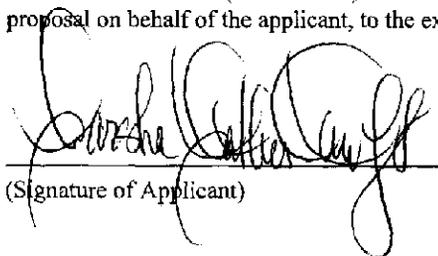
- | | |
|--|---|
| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public/Non-profit joint venture | <input type="checkbox"/> Non-profit |
| <input type="checkbox"/> Local government/district | <input type="checkbox"/> Private party |
| <input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

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

- | | |
|-------------------------------------|---|
| <input 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 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 II.K) 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.



(Signature of Applicant)

**PROJECT TITLE: DELTA WATERSHED MONITORING - PHASE II
IDENTIFYING TOXICITY SOURCES AND IMPACTS ON ESTUARINE AND
ANADROMOUS SPECIES**

NAME OF APPLICANT: SAN FRANCISCO BAYKEEPER, PRESIDIO BLDG.
1004, P.O.B. 29921, SAN FRANCISCO, CA 94129-0921

PHONE (415) 561-2299 **FAX:** (415) 561-2290, **EMAIL:** marsha@sfbaykeeper.org

TAX STATUS: Nonprofit 501(c)3

TAX IDENTIFICATION NUMBER: 68-0120240

TECHNICAL AND FINANCIAL CONTACT PERSON(s):

Bill Jennings, DeltaKeeper (209) 464-5090

Marsha Mather-Thrift, BayKeeper Dev. Director (415) 561-2299, ext. 19

PARTICIPANTS/COLLABORATORS IN IMPLEMENTATION: The Regional Water Quality Control Board Watershed Specialist and U.C. Davis Aquatic Toxicology Laboratory - Dr. David Hinton. Technical Advisors include professionals from the University of the Pacific, Univ. of CA at Berkeley, Delta College in Stockton, and Dept. of Fish and Game staff.

RFP TOPIC ADDRESSED: Local Watershed Stewardship

ORGANIZATION TYPE: Nonprofit Organization, Services

DELTA WATERSHED MONITORING - PHASE II - IDENTIFYING TOXICITY AND IMPACTS ON ESTUARINE AND ANADROMOUS SPECIES -- EXECUTIVE SUMMARY

PROJECT DESCRIPTION & BIOLOGICAL/ECOLOGICAL OBJECTIVES: Riverine and Delta populations of phytoplankton, zooplankton and several fish species (striped bass, Delta smelt, splittail, salmon) are in decline. In order to identify and support beneficial uses and to prioritize restoration actions in the Bay-Delta Process, **it is vital to adequately characterize actual impairments in the Delta Watershed, including those to water quality.** The Phase II Watershed Monitoring Project will gather field samples from Stockton-area and East Side Tributary sites, and conduct toxicity and special studies which will identify likely sources of toxicity and actual impairments to the Sacramento-San Joaquin Delta watershed, including impacts on local fish species and invertebrates. Preliminary data, including data gathered by DeltaKeeper in 1996-1997, indicate that toxicity now seriously impacts key fish species, including *salmonids*. This project will provide vital information and also serve as a catalyst for greater local understanding of watershed stewardship through its active engagement of local citizens and schools in direct, hands-on watershed studies.

Primary biological/ecological objectives are: 1) to identify pollutants of highest concern to threatened fish species, b) to identify likely sources of toxicity, c) to develop recommendations for reduction of these pollutants, c) to engage a diverse group of local citizens in identifying these impacts in order to create buy-in for the concept of watershed improvement (broad, coordinated efforts to date have failed in this region), and d) to complement activities and complete the data "picture" provided by the Sacramento River Watershed Protection Program and Bay Protection and Toxic Cleanup Program and to disseminate study data and recommendations to CalFed and other agencies in order to initiate new strategies for toxicity reduction in the Delta.

APPROACH/TASKS/SCHEDULE: DeltaKeeper proposes to work with the Regional Board Watershed Specialist to continue baseline monitoring vital to characterization of water quality problems in the Delta watershed and to design a series of second-phase special studies on toxicity. This is an important extension of work now funded by CalFed. The on-year project will conduct continued baseline monitoring and sample acquisition at approximately 12 sites throughout the Delta and East Side tributaries in order to a) gather additional data on sources of toxicity, and b) conduct special studies to determine impacts on key species. DeltaKeeper is now refining citizen monitoring QA/QC procedures and training materials it has been developing for use in the field and in a class conducted at Delta College. The Phase II project will utilize these materials and others developed for student use, in order to engage a broader population of skilled citizen monitors in gathering data, to create a monitoring network, and to create greater local awareness of the importance of Delta watershed protection. DeltaKeeper will expand its volunteer training program, utilizing technical advisors from UOP, UCD and UCB as well as Regional Board and DFG staff and hopes to implement an ongoing course at Delta College. The University of California at Davis Aquatic Toxicology Laboratory will provide scientific services,

conduct bioassays, Toxic Identification Evaluations, and special studies, utilizing DeltaKeeper samples, and produce final scientific reports. The results will provide an essential characterization of problems in the Delta watershed, sources of toxicity, and vital data on fisheries impacts and contaminant effects on species in decline. It will also provide specific information which will enable DeltaKeeper to develop new strategies for educating the general public, encouraging Best Management Practices, and reducing pollution. It will enable DeltaKeeper to expand its public education program and encourage grassroots support of good watershed management in an area where collaborative watershed protection efforts have failed.

JUSTIFICATION FOR PROJECT AND FUNDING BY CALFED: In 1998-99 CalFed funded DeltaKeeper to conduct a Phase I Delta Toxicity Monitoring Project, to gather baseline data on levels and types of contaminants impacting fish and invertebrate food sources. This project has begun with an initial \$20,000 from an EPA 319h grant to Placer County RCD, and a CalFed award of \$100,000 to fund Phase I monitoring and a limited number of TIE's. BayKeeper has raised a match of more than \$100,000 in cash and in-kind services for this first-stage project. A CalFed award for Phase II will provide the data necessary to characterize problems in the watershed as a first, vital step in the restoration process, to continue baseline monitoring, conduct special studies (including fertility and mortality), identify specific pollutant impacts on Priority Species, and to engage a variety of stakeholders in the study process. DeltaKeeper companion projects, which will run concurrently, will educate the general public about the need to reduce home and business use of pesticides of concern such as diazinon and *chlorpyrifos*.

BUDGET AND THIRD PARTY IMPACTS: The total budget for this project is \$350,067, with \$265,200 requested from CalFed and a 56% match. There are no third party impacts.

QUALIFICATIONS: DeltaKeeper has conducted important water monitoring work on Stockton and East Side Delta tributaries and mounted a vital public education program. Established with an initial seed fund provided by the East Bay Municipal Utilities District, DeltaKeeper has recruited and trained dozens of volunteers, conducted regular on-the-water monitoring patrols to gather data on Delta pollution problems, and provided a high-profile presence through its boats and community outreach to educate local citizens about the importance of clean water.

LOCAL SUPPORT, COLLABORATION: This is an important complement to the work being done by the Sacramento River Watershed Program and by the San Francisco Estuary Institute, filling an essential data gap which will enhance the quality of their results while providing the information necessary for Delta Watershed Restoration. A variety of stakeholders are involved in the DeltaKeeper project. Phase I is currently being conducted in collaboration with the Placer County, RWQCB staff, other agencies, U.C. Davis, members of key groups such as Audubon and Sierra Club, high schools (Edison), and the Stockton Private Industry Council. Project participants in Phase II will include these groups and others. The Phase II project will provide important citizen education benefits, monitoring, data and scientific data on the impacts of water-borne toxicity on Priority Species. We hope to implement an ongoing college course.

PROPOSAL - DELTA WATERSHED MONITORING PROJECT - PHASE II EFFECTS ON ESTUARINE AND ANADROMOUS SPECIES

BACKGROUND: DeltaKeeper, a project of the San Francisco BayKeeper headquartered in Stockton, was launched to monitor the Delta and its tributaries to protect and restore water quality. DeltaKeeper identifies pollution sources, trains citizen volunteers in monitoring, and conducts ongoing water quality analysis. Since its inception, DeltaKeeper has been working with university experts, the Central Valley Regional Water Quality Control Board Environmental Specialists, and the U.C. Davis Toxicology Laboratory, among others, to establish a Delta Toxicity Monitoring Project designed to provide significant data on sources of toxicity in Delta waterways and the impacts of contaminants on fish species and invertebrate food sources. Phase I of the Delta Watershed Monitoring Project is now getting underway with a contract for \$20,000 from an EPA 319h grant to Placer County RCD, and a CalFed contract for \$100,000. The Placer County portion of the project is developing a QA/QC (quality assurance/quality control) manual for volunteer training, as well as procedures which can be used to achieve high-quality results in the field. Establishment of such a training program provides the groundwork for use of volunteers as an effective, low-cost force aiding in the collection of scientific data. DeltaKeeper has also raised more than \$100,000 in matching cash and in-kind services for this project.

PROJECT DESCRIPTION AND GRANT REQUEST: BayKeeper requests a contract award of \$265,200 from the Cal-Fed Bay Delta Ecosystem Restoration Program to conduct a Phase II Delta Watershed Monitoring Study which will a) continue collection of important baseline toxicity data for the Stockton area and East Side Tributaries region of the Delta, and b) provide for Special Studies (including mortality and fertility studies) to be conducted on Priority Species identified by the CalFed Program to determine precise impacts of toxicity and specific sources of toxicants. This project will complement similar efforts, such as Sacramento River Watershed Project and the Monitoring Program conducted by the San Francisco Estuary Institute, and fills a major gap in knowledge for the Sacramento-San Joaquin Delta, where acute toxicity has been demonstrated. It will provide data on specific toxicants impacting overall waterway and ecosystem health, and vital data to aid in restoring the health of Priority Species such as salmon, splittail, and striped bass. This project will also create a new sense of watershed stewardship among local citizens, including adults, college, and high school students, who engage in studying toxicity in this watershed.

DeltaKeeper's proposed study will extend and amplify the initial effort funded by CalFed in 1998-99, completing a comprehensive picture for baseline toxicity data at 12-14 sites, including Toxic Identification Evaluations to document specific contaminants present and impacts on local species of concern, and special studies on striped bass, splittail, and *salmonids* such as rainbow trout. The U.C. Davis Toxicology Laboratory will provide scientific services and scientific reporting at a very low cost. Although initial isolated studies have been conducted, no comprehensive monitoring program has been implemented despite compelling evidence that toxicity has reached serious levels.

As a highly-skilled nonprofit citizen monitoring organization, DeltaKeeper can conduct such a study

in a low-cost highly efficient manner. CalFed funds would be used to support 1) Project development and oversight by BayKeeper Michael Lozeau, DeltaKeeper Bill Jennings, and the Regional Board Watershed Specialist, 2) operation of the DeltaKeeper boats to gather samples, 3) analyses and reporting performed by the U.C. Davis Aquatic Toxicology Laboratory, 4) special studies to be conducted on Priority Species, 5) hiring of technical consultant(s), 6) project overhead, including copying printing, utilities and telephone, 7) volunteer coordination, training and watershed education, 8) database management to compile data on sampling and study activities, and 9) coordination with local groups including University of the Pacific and Delta college to set up ongoing citizen volunteer training programs to increase direct watershed stewardship and provide a pool of highly-trained volunteers for ongoing DeltaKeeper monitoring projects.

In late 1996 and 1997, DeltaKeeper conducted a citizen monitoring efforts during peak season storms. Sampling and followup analysis documented a prolonged sag in dissolved oxygen levels and lethal concentrations of diazinon, chlorpyrifos and other toxic chemical substances in all streams sampled. In 1997, results showed high toxicity for rainbow trout (*salmonids*) with mortality ranging from 80-100%. In numerous instances in the past two years, DeltaKeeper monitoring has found a) fish kills and prolonged oxygen sags, b) demonstrated toxicity from pesticide contamination, and c) trout mortality which has not yet been explained. The proposed Delta Watershed Project will involve an expanded 12-14 site monitoring program at selected sites throughout the Delta and East Side Tributaries (sites selected with UCD and RWQCB staff). Special studies will also be conducted at additional sites. Special studies include bioassays to assess impacts of toxicity on reproduction, and toxic identification evaluations to identify specific contaminants and impacts on specific species. Species testing will include the EPA's selected three species, others such as rainbow trout and invertebrates, and CalFed Priority Species, including splittail, salmon, and (secondary priority) striped bass.

BIOLOGICAL/TECHNICAL JUSTIFICATION AND PROJECT APPROACH

Riverine and Delta populations of phytoplankton, zooplankton and several fish species Striped Bass, Delta Smelt, Splittail, and Salmon are in decline. In recent years, the number of striped bass and the ocean harvest of salmon has dropped precipitously. The presence of contaminants is one of the factors that have been strongly suggested to account for this. For example, Striped Bass and their primary food source *neomysis* have been shown to exhibit toxicity to rice field effluent. And, a recent study showed that water in the San Joaquin River was toxic to aquatic life in 50% of the samples taken over the course of a year. The USGS has also documented pulses of toxicity from stormwater coursing through the Delta in both the Sacramento and San Joaquin River channels, and yet there has been no further work, such as studies on dispersal rates, residence times, or impacts on local species. Clearly, more work is needed with key species, to determine which toxicants may be responsible for declines in Delta fish and food species.

In the last three years, some toxicity assessment work has been done in the Delta thanks to short-term funding from the Bay Protection and Toxic Cleanup Program, which is now in its final months.

New funds need to be obtained to continue monitoring the health of this critical habitat. The Sacramento River Toxic Pollutant Control Program will focus on contaminant effects in the Sacramento River Watershed only. Similarly, the San Francisco Estuary Institute conducts the Regional Monitoring Program for the Estuary itself, but no comparable program exists for the Delta, a critical missing link. During the last two years, DeltaKeeper has continued to develop an initial understanding of urban runoff and toxicity detection. Through its work with the Bay Protection and Cleanup Program and its initial Phase I project now underway, it is uniquely qualified to conduct this project.

Toxicity is routinely detected in the Delta watershed, in the Sacramento and San Joaquin Rivers, and in East Side tributaries, which provide the majority of freshwater flows to the Delta, and ultimately to San Francisco Bay. Toxicity has been detected using the EPA protocols, which rely on three indicator species: the fathead minnow, *Ceriodaphnia dubia* (zooplankton) and *Selenastrum capricornutum* (phytoplankton). Several studies have linked observed toxicity to pesticides, and established the presence of unidentified toxicity. Identification of the specific contaminants is essential if strategies are to be developed to reduce the level of toxicity. Finally, although the existence of toxicity to indicator species is commonly-known, no landscape assessment of toxicity or "map" of toxic discharge points in the Delta exists. Impacts on local species have also not been clearly-defined. **Where feasible, toxicity testing and toxicant identification need to be conducted with Priority Species which are currently in decline in order to develop toxicity reduction strategies that prioritize effectively, pinpointing ways to reduce contamination from toxicants impacting sensitive species.**

Once contaminant types and sources are identified, a comprehensive and coordinated campaign can be mounted to develop Best Management Practices, reduce or eliminate runoff, direct discharge, overspray practices, stormwater overflows and other sources which, when added together produce massive contamination that threatens the increasingly precarious health of the entire Delta watershed, where all tributaries are now listed as 303(d) list impaired waterbodies.

The total Delta Toxicity Monitoring Project will be conducted jointly by highly-experienced major partners. Staff from the Central Valley Regional Water Quality Control Board have provided background data and technical advice in developing the project to this point, and will take an active role in designing the Phase II project and interpreting the results,

SCOPE OF WORK: (For cost by task, please see attached spreadsheet)

Objectives of the BayKeeper/DeltaKeeper Toxicity Monitoring Project are to:

1) Characterize water quality problems and priorities in the Delta Watershed, 2) obtain high-quality reliable environmental information on the sources and impacts of toxic pollution in the Stockton area waterways; 3) conduct a phase II water quality monitoring program, including special studies on Priority Species; 4) produce a report on the sources and impacts of toxicity in the Sacramento-San Joaquin River Delta, and 5) create broader awareness of the need for Delta

Watershed Restoration and an ongoing program to actively engage local stakeholders in the monitoring and restoration process.

Tasks 1, 10 and 11: Project Management and Reporting (see attached Task Budget)

DeltaKeeper is a project of the San Francisco BayKeeper. DeltaKeeper, headquartered in Stockton, has developed a sophisticated citizen water monitoring program which utilizes highly-trained volunteers to conduct water monitoring activities at a fraction of the normal cost. The DeltaKeeper office is headed by Bill Jennings, DeltaKeeper, and is responsible for field project development and management. The San Francisco BayKeeper, a nonprofit 501(c)3 organization is the administrative umbrella for DeltaKeeper. Its office in San Francisco manages contracts, accounting and audits, additional fundraising, insurance, personnel and other administrative matters connected with this project. Executive Director, Michael Lozeau has ultimate responsibility for the total project. DeltaKeeper will coordinate all aspects of the project, training skilled volunteers through college and other courses, mounting tributary monitoring, setting up sampling stations, collecting and transporting water samples, and coordinating volunteers, staff and consultants.

The U.C. Davis Aquatic Toxicology Laboratory and Dr. David Hinton will subcontract with BayKeeper to develop a Quality Assurance Plan, conduct bioassays and all sample analysis, including TIE's, subcontract as necessary for chemical analysis of samples, and perform special studies as outlined. The UCD Laboratory is uniquely qualified to perform these tests and provide quality assurance and data analysis services. BayKeeper will provide quarterly progress reports on all project activities and monitor performance and report findings of its subcontractor, UC Davis Aquatic Toxicology Laboratory. *Task Product: Quarterly Progress Reports, Draft and Final Project Reports.* The projected project start date will be August 1, 1999, end date will be July 31, 2000.

TASKS 2-10: QA/QC Plan, Revised Monitoring Plan for Continued Baseline Monitoring, implementation, and Special Studies

DeltaKeeper will modify the QA/QC plan and procedures as needed for continued monitoring. DeltaKeeper, Regional Board staff and U.C. Davis Laboratory staff will develop a QA/QC plan for special studies which will be submitted to CalFed for approval. *Task Product: QA/QC Plan.*

DeltaKeeper, the Central Valley Regional Board Watershed Specialist and UCD staff will design: a) a regular monitoring program using the EPA 3 species protocols to monitor for toxicity at 12-14 sites throughout the Delta and East Side tributaries for 12 months. Sampling stations will be established at each of the sites. Samples will be regularly collected and analyzed for toxicity, aiding in the establishment of trend data related to various seasons of rainfall, agricultural pesticide spraying, and other activities. The Monitoring Program is being designed with assistance from DeltaKeeper's Advisory Committee, which includes highly-experienced scientists from universities and the private sector, such as private consultant and engineer Dr. G. Fred Lee and Dr. Gary Litton, Terry Strange, and Dr. Dale Sanders, who are part of the teaching staff at the University of the

Pacific, Delta College, and U.C. Berkeley, respectively.

b) The program for conducting Toxicity Identification Evaluations on samples exhibiting acute toxicity; and c) Special studies as follows:

1) During the striped bass spawning and early recruitment period, an intensive special study will be conducted to determine the toxicity of Sacramento River water samples to Striped bass. Main drains and the River will be sampled several times each week. The effects of river and drain water on fertilization success and early development will be determined.

2) During the splittail spawning and early recruitment period, an intensive special study will be conducted to determine the toxicity to splittail of water samples collected from key habitat areas. The effects of these waters on fertilization success and early development will be determined.

3) During the four periods of salmon spawning, a special study will be conducted in the upstream tributaries of the Sacramento River. Rainbow trout fertilization and early development tests will be conducted.

d) During the special study periods, concurrent with the fish testing, toxicity tests will also be conducted with key invertebrate species.

Studies proposed include bioassays of three selected local species (splittail, Striped bass, and Rainbow trout) during fertilization and larval stages. Testing would focus on eggs and sperm collected from the fish during these periods to determine their viability in relation to varying levels of contaminants in water collected at certain peak periods. Events of special focus would include dormant spray periods (Jan-Feb), alfalfa periods (March), urban runoff impacts during high intensity storm periods (Nov-May), rice production (April-June), and impacts throughout the year evaluated from routine sample collection. In addition to the three local species being evaluated tests would be done on rotifers and *neomysis*, which provide an essential foodsource to early life stages of fish. The Regional Board Watershed Specialist will assist DeltaKeeper with both phases and work with Dr. David Hinton and the staff at the U.C. Davis Aquatic Toxicology Laboratory. The consultant will also assist DeltaKeeper in designing protocols and assessing additional studies or sample collection work which might be needed.

ANTICIPATED BENEFITS: The proposed project would provide vital information now missing in attempts to stop the decline of local fisheries. Evidence suggests that pesticides and unidentified contaminants are a significant source of toxic pollution in Delta tributaries and waterways, but no conclusive work has yet been done. This project would fill in the "information gap" which now exists between EPA surrogate fish species studies and local fish species and provide vital information to be used in improving water quality and reversing the decline of these important fisheries. It is likely that a number of factors contribute to the decline of key species. Several years will be needed to determine the role of toxics relative to other factors. We would anticipate a need to continue

studies beyond the two years, but believe this two-year project will provide important information not now available, encourage public interest in this crucial project, and focus attention on the critical plight of water quality in Central Valley Rivers. Information provided would also be utilized by the BayKeeper/DeltaKeeper Toxics Reduction Program to develop strategies for more effective direct action to reduce contamination from pollutants and all data and information from this project will be shared with numerous stakeholders, including local agencies, university scientists at UOP and University of California, and other nonprofit environmental groups, local industry groups, as well as high school teachers, students, volunteers and others engaged in citizen monitoring.

PROJECT MANAGEMENT, DATA EVALUATION, AND IMPLEMENTATION: The major partners in this project have extensive complementary skills and a significant history in successful management of projects of this kind. For twelve years, the U.C. Davis Aquatic Toxicology laboratory has collaborated with the Central Valley Regional Water Quality Control Board staff to identify toxic pesticides associated with the use of dormant spray insecticides. They have conducted studies on insecticide problems in the Colusa Basin Drain caused by rice crops and affecting *neomysis* and Striped bass. U.C. Davis laboratory staff have also worked with CVRWQCB staff to develop Toxic Identification Evaluation (TIE) techniques for agricultural and urban stormwater runoff. In addition, the laboratory has extensive experience in testing with the EPA's 3 species (fathead minnow, *Ceriodaphnia*, and *Selenastrum*). They also have developed the ability to conduct toxicity testing for zooplankton such as *Neomysis* and for Rotifers. Preliminary work has also been done on techniques for successfully spawning and rearing larval splittail, striped bass, and rainbow trout. Dr. David Hinton is well-known for his expertise on effects of contamination on various species. The U.C. Davis Aquatic Toxicology Laboratory staff are uniquely qualified to conduct toxicity assessments and determine contaminant effects. All studies, protocols, and materials needed to implement this study are being supplied by the Regional Water Quality Control Board.

IMPLEMENTATION ISSUES: The BayKeeper Watershed Monitoring Project began in part in 1996 with monitoring of toxicity from stormwater outfalls during peak rain events. The major Phase I baseline study funded by CalFed will begin officially on August 1, 1998. BayKeeper has raised \$70,000 in cash and will contribute more than \$30,000 in in-kind services to this project. (In fact, it has already contributed much more than this in early 1998 planning, design and contract finalization stages of this project). If funded, the Phase II project will begin in 1999.

Although the U.C. Davis Aquatic Toxicology Laboratory has an outstanding record and highly experienced scientists, unforeseen circumstances may arise. Local species studies are contingent upon the ability to acquire eggs, sperm and fish as needed. Phase I lab work will be developmental, i.e. designed to acquire some data and develop strategies to deal with any problems. Phase II lab work will provide the most conclusive data. Studies of winter-run chinook salmon, spring-run chinook salmon and late-fall run chinook salmon will also be conducted if eggs can be acquired. Winter-run salmon are expected to be extremely difficult to acquire. In the event that a species is unavailable, a similar species may need to be substituted. All such changes will be submitted to the CalFed contract manager and carefully reviewed before implementation.

APPLICANT QUALIFICATIONS BIOGRAPHICAL INFORMATION STAFF AND CONSULTANTS

In just eight years, BayKeeper has mounted a highly-effective, nationally-recognized pollution reduction campaign on San Francisco Bay, and has now expanded this work into the Delta. (DeltaKeeper is engaged in, among other projects, an extensive Delta Monitoring Project supported by East Bay MUDD). DeltaKeeper patrols the Delta with its three boats, identifying pollution sources. BayKeeper and DeltaKeeper detect and stop pollution, dredging and other activities currently causing major damage to Bay/Delta water quality and habitat. BayKeeper has been recognized for its efforts by the UN Environmental Programme, the national Management Center, and the California Environmental Protection Agency. It has also been recognized as one of the top organizations implementing the Comprehensive Conservation and Management Plan developed by the National Estuary Program for San Francisco's Bay and Delta.

In just the last four years, BayKeeper has: * Responded to more than 800 incidents - working with polluters to clean up, and pursuing cases against willful violators, * Directed more than \$1.2 million in funds from successful pollution settlements to important Bay restoration projects, including fisheries enhancement, wetlands restoration, toxic discharge reduction and restoration projects employing disadvantaged youth in their own communities, * Initiated study to assess health risks of fish contamination from heavy metals and pesticides. Prompted the Regional Water Board and the Dept. of Health to undertake a full-scale study, * Developed clean water programs with dischargers and introduced them to equipment which would reduce their pollution impacts, * Begun to build an informed constituency for Bay and waterway protection through media articles and newscasts reaching millions of people across the U.S. and through dozens of presentations yearly to Bay and Delta area clubs, groups, and professional conferences, * been a founder of the 14-member National Alliance of River, Sound, and BayKeepers and the West Coast Keeper Alliance, which pursue national and coastal strategies to stop pollution.

BAYKEEPER STAFF

Michael Lozeau, Esq., BayKeeper and Executive Director. J.D. Honors Rutgers University. For five years before he became Director, Mike was General Counsel and Program Director for BayKeeper. Prior to that, he was Associate Attorney at Sierra Club Legal Defense Fund and a sole practitioner, specializing in Clean Water Act and Endangered Species litigation. He has worked with a coalition of environmental groups on protection of the endangered Desert Tortoise, on opposition to a low-level nuclear waste dump in Ward Valley, CA., and as lead attorney in the Penn Mine pollution case. He has been instrumental in developing BayKeeper's highly successful Legal Program and in setting up new environmental law clinics with U.C. Berkeley and Golden Gate University.

Bill Jennings, DeltaKeeper. For the past decade, Bill Jennings has fought to protect the environment. He has served as Chairman of the California Sportfishing Alliance and the Committee to Save the Mokelumne River, fighting to preserve water quality in rivers flowing to the Sacramento-San Joaquin Delta. His efforts to save the Mokelumne and a resulting settlement with the East Bay Municipal Utilities District for serious contamination of the river by mining debris led to the creation of DeltaKeeper. In October of 1995, Bill was hired as DeltaKeeper. Since then, he has set up the Stockton office and kicked off a highly successful program, including an important toxicity monitoring effort aimed at determining the causes of high levels of toxins in the San Joaquin River.

Marsha Mather-Thrift, Development Director. As a development director and consultant, Marsha has raised more than \$3 million dollars in revenue for grassroots nonprofit organizations, Marsha served as founder and Executive Director of The Foundation for Ethical Studies for two years, and Executive Director of the the California Center for Wildlife for five years. Prior to that she was Program Director for the Fort Mason Foundation. She is currently on the Earth Share of California Board of Directors, serving as No. Calif. Business Development Chair.

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

DR. VAL CONNOR, WATERSHED SPECIALIST

Dr. Connor has authored more than 20 reports on toxic contaminants in the Central Valley. She has been a staff scientist at the Central Valley Regional Water Quality Control Board since February of 1988, working on the Surface Water Toxic Testing Program. She is also coordinator of the Sacramento River Watershed Protection Program. Prior to that, she worked for the U.S. Environmental Protection Agency developing toxicity testing procedures. She holds an M.A. and Ph.D. in Zoology from University of California at Davis. She has worked closely with the U.C. Davis Aquatic Toxicology Laboratory staff for a number of years, and more recently, with DeltaKeeper.

U.C. DAVIS AQUATIC TOXICOLOGY LABORATORY

Dr. David Hinton

Dr. Hinton has over 28 years of experience in the fields of aquatic toxicology and carcinogenesis. He is a tenured faculty member of the Department of Anatomy, Physiology, and Cell Biology in the School of Veterinary Medicine at University of California at Davis. Dr. Hinton will oversee all studies and provide guidance with respect to experimental design and interpretation of data. He has served as Professor of Fish Pathology and Aquatic Toxicology in the Agricultural Experiment

Station at U.C. Davis and in the Aquaculture and Fisheries Program at the University, As Associate Professor in the Dept. of Anatomy and Pathology at West Virginia University Medical Center, and Assistant Professor in the Department of Pathology at the University of Baltimore School of Medicine. Dr. Hinton holds a Ph.D. from the University of Mississippi Medical Center.

DELTAKEEPER PROJECT ADVISORS

TERRY STRANGE, INSTRUCTOR, DELTA COLLEGE: M.S. Natural Resources, Humboldt State University. Instructor at San Joaquin Delta College and University of the Pacific in Stockton. He has also taught at Sacramento City College, College of the Redwoods, and Humboldt State University. He is a fisheries biologist and wetlands specialist for the San Joaquin County Mosquito and Vector Control District.

DR. G. FRED LEE - Dr. Lee is the President of G. Fred Lee and Associates and formerly Distinguished Professor, Civil and Environmental Engineering, New Jersey Institute of Technology. He has served as a Senior consulting Engineer for EBASCO-Envirosphere, N.J., as Coordinator for the Estuarine and Marine Water Quality Management Program for the New Jersey Marine Sciences Consortium Sea Grant Program and as Director of the Site Assessment and Remedial Action Division for Industry Cooperative Center for Research in Hazardous and Toxic Substances. From 1961 to 1984, Dr. Lee was a professor at Texas Tech, Colorado State University, University of Texas and the University of Wisconsin-Madison.

DR. DALE SANDERS, PH.D. Senior Planner, Physical and Environmental Planning Office, U.C. Berkeley (1987 - present). Dr. Sanders has been an instructor in Environmental Science and Conservation and Resource Studies at U.C. Berkeley, and formerly taught at California State University. He also served as Senior Planning Ecologist for the Contra Costa County Environmental Program, and has published extensively on human impacts on wildlife.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

9443 Router Road, Suite A
Sacramento, CA 95827-9098
PHONE: (916) 255-6000
FAX: (916) 255-3015



30 June 1998

CalFed Bay-Delta Program
1416 Ninth Street, Suite 1155F
Sacramento, CA 95814

Regional Board Staff Collaboration with DeltaKeeper Watershed Program

The Regional Water Quality Control Board Aquatic staff are a primary collaborator in the DeltaKeeper Phase II Toxicity Monitoring Project. We fully support this important project, in which we have agreed to be involved during 1999-2000. This proposal is one element of a broader watershed management plan.

I have worked with the DeltaKeeper staff on many occasions, including having assisted them with their current Phase One project design and with their overall monitoring program. DeltaKeeper conducts one of the highest quality citizen monitoring programs in the region and is unique in its creative and effective approaches to reducing pollution in the Bay-Delta. DeltaKeeper has, on several occasions, continued testing programs initiated by Board staff.

The Regional Board will provide a staff member for 1/3 PY or more (depending upon funding availability) to aid in designing special studies on toxicity to key fish species, including salmonids. Board staff will also aid in interpreting and reporting data and in ensuring that this data will be used to fully support the Bay-Delta Restoration process.

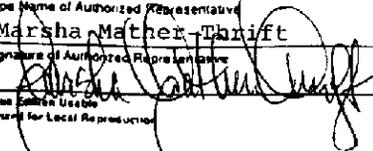
Please feel free to call me if you would like to discuss this proposal. I would also be pleased to provide a reference for DeltaKeeper

VALERIE CONNOR
Senior Environmental Specialist

Figure 1
Standard Form 424

OMB Approval No. 0348-0043

**APPLICATION FOR
FEDERAL ASSISTANCE**

1. TYPE OF SUBMISSION: Application <input type="checkbox"/> Construction <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction <input type="checkbox"/> Non-Construction		2. DATE SUBMITTED 	Applicant Identifier N/A										
3. DATE RECEIVED BY STATE N/A		State Application Identifier N/A											
4. DATE RECEIVED BY FEDERAL AGENCY		Federal Identifier											
5. APPLICANT INFORMATION													
Legal Name: San Francisco BayKeeper		Organizational Unit											
Address (give city, county, state, and zip code): Presidio Bldg. 1004, POB 29921 San Francisco, CA 94129-0921		Name and telephone number of person to be contacted on matters involving this application (give area code): Marsha Mather-Thrift (415) 561-2299, ext. 19											
6. EMPLOYER IDENTIFICATION NUMBER (EIN): <table border="1"> <tr> <td>6</td><td>8</td><td>-</td><td>0</td><td>1</td><td>2</td><td>0</td><td>2</td><td>4</td><td>0</td> </tr> </table>		6	8	-	0	1	2	0	2	4	0	7. TYPE OF APPLICANT: (enter appropriate letter in box) <input checked="" type="checkbox"/> N	
6	8	-	0	1	2	0	2	4	0				
8. TYPE OF APPLICATION: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es) <input type="checkbox"/> <input type="checkbox"/> A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other (specify):		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) <u>Nonprofit</u>											
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: TITLE: <u>N/A</u>		9. NAME OF FEDERAL AGENCY: CalFed Bay Delta Restoration											
12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.): San Joaquin and other Delta Counties		11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Delta Watershed Monitoring Project Toxicity Impacts on Estuarine and Anadromous Species											
13. PROPOSED PROJECT		14. CONGRESSIONAL DISTRICTS OF:											
Start Date 8/1/99	Ending Date 7/31/00	a. Applicant b. Project											
15. ESTIMATED FUNDING:		16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?											
a. Federal	\$ 265,200.00	a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:											
b. Applicant	\$ 148,607.00	DATE _____											
c. State	\$ 00.00	b. NO. <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E.O. 12372											
d. Local	\$ 00.00	<input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW											
e. Other	\$ 00.00	17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?											
f. Program Income	\$ 00.00	<input type="checkbox"/> Yes If "Yes," attach an explanation. <input checked="" type="checkbox"/> No											
g. TOTAL	\$ 350,067.00												
18. 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.													
a. Type Name of Authorized Representative Marsha Mather-Thrift		b. Title Development Director	c. Telephone Number (415) 561-2299										
d. Signature of Authorized Representative 		e. Date Signed 7/1/98	x 19										

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Standard Form 424 (REV. 4-82)
Preceded by OMB Circular A-112

Figure 2 * Projected cash and in-kind match
Standard Form 424A to be raised in 1999.

OMB Approval No. 0348-0044

BUDGET INFORMATION - Non-Construction Programs

SECTION 1 - BUDGET SUMMARY						
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		\$ 265,200	\$ 158,211*	\$	\$	\$
2.						
3.						
4.						
5. Totals		\$	\$	\$	\$	\$
SECTION 2 - BUDGET CATEGORIES						
6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)	
	(1)	(2)	(3)	(4)		
a. Personnel	\$ 60,000				\$	
b. Fringe Benefits	7,500					
c. Travel	2,200					
d. Equipment						
e. Supplies	20,000					
f. Contractual	175,500					
g. Construction						
h. Other						
i. Total Direct Charges (sum of 6a-6h)						
j. Indirect Charges						
k. TOTALS (sum of 6i and 6j)	\$ 265,200	\$	\$	\$	\$	
7. Program Income	\$ 0	\$	\$	\$	\$	

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Standard Form 424A (Rev. 4-92)
Prescribed by OMB Circular A-102

1-012139

1-012139

Figure 3
Standard Form 424B

OMB Approval No 0348-0040

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 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 nineteen 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 provide 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.

Standard Form 424A (cont'd.)

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 periods (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

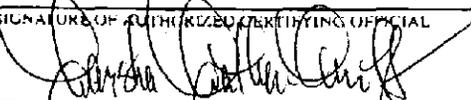
Line 21 - Use this space to explain amounts for individual direct object-class cost categories that may appear to be out of the ordinary or to explain the details as required by the Federal grantor agency.

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.

Figure 3
Standard Form 424B (cont'd.)

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 11988; (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 (Clear Air) Implementation Plans under Section 176(c) of the Clear 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 of 1984 or OMB Circular No. A-133, Audits of Institutions of Higher Learning and other Non-profit Institutions.
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 	TITLE DEVELOPMENT DIRECTOR
APPLICANT ORGANIZATION SAN FRANCISCO Paykeeper	DATE SUBMITTED 7/1/98

Standard Form 424B (Rev. 4/92) back

CALFED DELTA TOXICITY MONITORING TASK BUDGET															
PHASE TWO - ONE YEAR EXPANDED STUDY															
TASK PROPOSED	DIR LABR	DELTAK	PRJ COR	ADMIN	BK PROJ	BOAT MG	UCD STF	DK/UCD	REG BD	DK/BK	UCD OHD	TRAVEL	TOTAL	CALFED	
	HOURS	198/DA	121/DA	120/DA	MGM 10%	68/DA	202/DA	SUPPLY	SF 1/3PY	OHD 8%	10%		BY TASK	AMOUNT	
1 PROJECT MGMT	560	5000	4000	1500	3500		5000			5000	7160	700	31860	21000	
2 REVISED MONITORING PLAN	138	1200	1350				1000		7000	2500	1790		6532	6500	
3 RECRUITMENT	306	400	1500	2880						2500	0		7280	3700	
4 TRAINING	432	3400	3025	1440		700	1000		3000	2500	0		15065	8000	
5 ACQUISITION OF EQUIP/SUP	46	400	450					20000		2500	1790		25140	23000	
6 MONITORING	1360	14444	10000	2000		4400	0		6000	5500	0	1500	43844	30000	
7 TOXICITY TESTING AND TIE'S	8	0	120				50000			0	2690		52810	40000	
8 SPECIAL STUDIES	8	0	120				60000		10000	0	2690		72810	60000	
9 INVERTEBRATE STUDIES		0					40000			0	2690		42690	40000	
10 ANALYTICAL CHEMISTRY		0					20000			0	0		20000	10000	
11 UCD REPORT TO DK		0	0	0			18100				2220	2690	23010	18000	
12 DK DRAFT REPORT/CALFD	40	990	120	500	800		0		4000	2220	0		8630	5000	
13 DK FINAL REPORT/CALFD	16	396			500										
TOTALS	2914	26230	20685	8320	4800	5100	195100	20000	30000	24940	21500	2200	349671	265200	
Matching grants have not yet been committed for this project,															
but core BayKeeper funders have expressed strong interest and we															
believe matching grants will be readily available.															
Once Phase I work is well underway, we will apply for matches.															
If additional grants can be acquired, we will conduct additional special studies.															

1-012143

1-012143

CALFED DELTA TOXICITY MONITORING TASK BUDGET															
PHASE TWO - ONE YEAR EXPANDED STUDY															
TASK PROPOSED	DIR LABR	DELTA K	PRJ COR	ADMIN	BK PROJ	BOAT MG	UCD STF	DK/UCD	REG BD	DK/BK	UCD OHD	TRAVEL	TOTAL	CALFED	
	HOURS	198/DA	121/DA	120/DA	MGM 10%	88/DA	202/DA	SUPPLY	SF 1/3PY	OHD 8%	10%		BY TASK	AMOUNT	
1 PROJECT MGMT	580	5000	4000	1500	3500		5000			5000	7160	700	31860	21000	
2 REVISED MONITORING PLAN	138	1200	1350				1000		7000	2500	1790		6532	6500	
3 RECRUITMENT	306	400	1500	2880						2500	0		7280	3700	
4 TRAINING	432	3400	3025	1440		700	1000		3000	2500	0		15065	8000	
5 ACQUISITION OF EQUIP/SUP	46	400	450							20000			25140	23000	
6 MONITORING	1380	14444	10000	2000		4400	0		6000	5500	0	1500	43844	30000	
7 TOXICITY TESTING AND TIE	8	0	120												
8 SPECIAL STUDIES	8	0	120				50000			0	2690		52810	40000	
9 INVERTEBRATE STUDIES		0					60000		10000	0	2690		72810	60000	
10 ANALYTICAL CHEMISTRY		0					40000			0	2690		42690	40000	
11 UCD REPORT TO DK		0	0	0			18100			0	0		20000	10000	
12 DK DRAFT REPORT/CALFD	40	990	120	500	800		0		4000	2220	2690		23010	18000	
13 DK FINAL REPORT/CALFD	16	396			500						0		8630	5000	
TOTALS	2914	26230	20685	6320	4800	5100	195100	20000	30000	24940	21500	2200	349671	265200	
Matching grants have not yet been committed for this project,															
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