F1-260

PROPOSAL FROM THE SAN FRANCISCO BAYKEEPER

PROJECT TITLE: ENDANGERED TRIBUTARIES MONITORING
NAME OF APPLICANT: SAN FRANCISCO BAYKEEPER,
BLDG. A, FORT MASON CENTER, SAN FRANCISCO, CA 94123.
PHONE (415) 567-4401, FAX: (415) 567-9715
ORG TYPE AND TAX STATUS: BayKeeper is a nonprofit 501(c)3 organization
TAX IDENTIFICATION NUMBER: 68-0120240
TECHNICAL AND FINANCIAL CONTACT PERSON(s):
Bill Jennings, DeltaKeeper (209) 464-5090
Marsha Mather-Thrift, BayKeeper Dev. Director (415) 567-4401, ext. 19
COLLABORATORS IN IMPLEMENTATION: DeltaKeeper volunteers, professionals from Delta College and University of the Pacific at Stockton
RFP PROJECT GROUP TYPE: Nonprofit Organization, Services

II. BRIEF PROJECT DESCRIPTION AND NEEDS ADDRESSED:
A number of recent studies have demonstrated the presence of serious toxicity to aquatic life in the Delta, with up to 50% of samples taken in some studies demonstrating high levels of contamination. Yet, residents of the Central Valley communities most affected by these trends seem unaware of the serious pollution affecting Delta water quality. In a move designed to foster greater public awareness, American Rivers declared the San Joaquin River to be the nation's Fourth Most Endangered River this year. DeltaKeeper proposes a project which will support and strategically expand this public awareness effort -- while providing effective toxicant discharge reduction through a complementary component of the project. The Endangered Tributaries Monitoring Project proposes a two-pronged approach which includes a) direct on-the-water boat patrols of Delta waterways, targeting specific discharge problems in the East Side tributaries, and b) a complementary public education project which will combine a simple and effective bioassay monitoring technique with environmental science education for grades 6-12, providing hands-on experience for young students. The education project will a) develop student mentors and leaders, b) create a hands-on fieldwork program teaching real-world science skills, c) engage students in cooperative activity which can demonstrate the potential for grassroots planning and community-building, and d) generate public interest in pollution problems via a student project with strong visibility and news appeal.

Benefits include: a) expansion of a unique, low-cost monitoring program, complementing the work of resource and regulatory agencies by detecting specific toxic discharge sources polluting Delta waterways, b) reduction of pollution through direct work with dischargers to develop and implement Best Management Practices, c) creation of a simple system for determining which locales in the Stockton region are toxic to selected fish species, d) student involvement in a science project with a public benefit component, including demonstrable impacts on environmental quality, and e) enhancement of public awareness which will result in reduction of toxic discharges to water.

student projects.

To become environmentally literate, students need to forge strong links to local habitat and become aware that they have the power to improve or degrade fragile resources. Delta StudentKeepers, an important project conceived as a complement to a several new initiatives in environmental education, will offer college and career-bound high school and junior high students important opportunities to study and affect local pollution problems, creating a sense strong community participation in students' learning experience and a sense of power in regard to solving environmental problems. Delta StudentKeepers will also serve as an important part of the total Delta Monitoring Project, supporting DeltaKeeper boat patrol activities designed to pinpoint significant discharge points. The two complementary projects provide important components needed to: a) clean up current sources of pollution, b) develop a strong sense of environmental stewardship among college and career-bound youth, and c) develop broader public awareness of the individual's direct links to nearby waterways and role in pollution. Such awareness will reduce present, and aid in preventing future, pollution.

PROJECT COMPONENT #1: DELTA BOAT PATROL MONITORING SCOPE OF WORK

DeltaKeeper has acquired two boats and an inflatable which are now used to monitor Delta tributaries. The DeltaKeeper boats facilitate ongoing on-the-water patrols which provide highly valuable data on illegal and harmful discharges, fill, unscreened water diversions and other activities which are affecting the health of the Delta. These patrols fill an important gap, complementing the work of regulatory agencies, who do not have adequate staff or funding for this purpose. DeltaKeeper's trained staff and volunteers conduct regular on-the-water monitoring patrols and collect data on discharge and other sites where pollution is believed to be occurring. This data is then analyzed and coupled with water sampling data taken from suspect sites to yield information on specific discharge problems. DeltaKeeper also serves as a highly visible symbol of the battle to stop the Delta's decline, attracting general public attention, as well as the attention of boaters, fishers, and hunters, who have a vested interest in waterway protection.

With funding provided via this proposal, DeltaKeeper proposes to expand its current patrol activity, by training new boat skippers and volunteers, conducting an additional 3-4 patrols per week, and targeting specific categories of concern for data collection over the next two years, i.e. industrial, municipal, and agricultural dischargers as well as recreational sources such as marinas, and related boating problems such as bilge pumpouts and hull maintenance wastes. Information developed on sites of concern will be utilized to mount category-specific cleanup efforts, i.e. in the case of boat discharges, DeltaKeeper will work with harbormasters to create greater awareness of impacts caused by fecal coliform, fuel spills, and illegal

The Stream Sentinel technique is simple: Students take plastic 2 litre bottles (which have been perforated), add a float and an anchor, and immerse them in streams and rivers upstream and downstream from outfalls and other suspected discharge sites. Students then add fish (EPA's chosen monitoring species--fathead minnows), and follow up by conducting a series of monitoring visits to record data on the condition of the fish and any mortality which occurs. Results from the student monitoring visits provide a record of toxicity at specific sites. If the test minnows die, it is likely that a pollutant was present. Placement of "stream sentinels" in upstream areas near the outfall can help to further trace and isolate sources of discharges. This information can then be used as a basis for investing in water sample analysis to determine precise toxicants causing fish mortality.

In addition to use of fathead minnows, DeltaKeeper staff will supervise experimentation with other species to determine best test organisms. Since fathead minnows are quite hardy, they make the best test species for the student work; however, DeltaKeeper will also develop standard protocols for use of such species as Golden shiners, Mosquitofish, Rainbow Trout, Hitch, Inland silversides, and Sacramento perch.

DeltaKeeper will train individual teachers in water quality monitoring techniques through the Delta College course, and through use of professional science staff from University of the Pacific (currently advisors to DeltaKeeper) who will assist in training teachers at the DeltaKeeper office, in order to give student project supervisors a broader background in both Delta water quality issues and types of monitoring that can be done. Through teacher training for local grade 6-12 teachers and science teachers (the first training session is scheduled for August 6-7), DeltaKeeper will enlist full involvement of 8-10 key teachers for each year of its two-year project. In the Phase One, the project will focus on developing materials and project activities for Grades 9-11, in order to engage high school students who can then serve as mentors for younger students in the following Phase Two project. This focus will make the first year project effective in two realms - as a toxicity detection project and as an educational project. In Phase Two, DeltaKeeper would simplify concepts and activities presented in Phase One and develop teaching materials appropriate for younger children in grades 7-8. Classes to be involved in initial phases include 5 science classes and two Advanced Placement Science classes at Lincoln High School and students from Pacific School, Brookside School and Village Oaks. At the end of the two years, approximately 300-400 Delta region children will have participated in this project. We will also encourage students to present information about their work to other classes at their schools, thus creating broader local awareness. In Year Two, we plan to export the project to other school districts via the Regional Consortium of Environmental Education Coordinators.

Throughout the project, in an effort to expand public awareness, DeltaKeeper will provide information to local newspapers, television, and radio stations about the

BayKeeper's history on San Francisco Bay has demonstrated that a direct focus on cleanup of pollution sites fills the gap between laws on the books and long-term scientific studies, accomplishing actual pollution reduction now, when badly needed.

MONITORING AND DATA EVALUATION: DeltaKeeper conducts regular evaluations of its program with BayKeeper, its parent organization. DeltaKeeper also frequently evaluates the effectiveness of its total program and will conduct quarterly evaluations of the proposed project, evaluating the following: a) Number of pollution incidents recorded, including toxicity from stormwater outfalls identified by the "stream sentinel" approach, b) Significance of pollution incidents recorded, categorized by source, amount of discharge identified, types of toxicants, c) Effectiveness of strategies developed to deal with the problem, d) Number of pollution locales effectively cleaned up and successful cleanup negotiations, e) Number of volunteers, teachers, and students involved in the project, f) Numbers of public interest news stories generated by "stream sentinel" project

IMPLEMENTABILITY: This project is extremely implementable. BayKeeper has conducted its StudentKeepers project for high school students for the last two years, engaging science students from five local high schools in fecal coliform analysis of water quality on creeks and in the Bay. The "stream sentinel" project is equally easy to implement -- materials are inexpensive and readily available and teacher training materials are already being developed which will complement this program. DeltaKeeper's on-the-water monitoring program has already achieved substantial success and BayKeeper's has done so for the last eight years, demonstrating outstanding achievements in identifying specific categories of pollution and working with groups of businesses, such as junkyards, boatyards and industrial and municipal dischargers to reduce pollution in stormwater and stop other discharges. We hope you will choose to fund this highly-valuable project for 1997 and 1998.

SUMMARY: We hope the CalFed Bay/Delta Program will choose to fund this important project to expand water monitoring in the Delta, reduce pollution, and educate a new generation of water protection activists through an exciting fieldwork project, Delta StudentKeepers.

PROJECT TIMETABLE

DATE	*ACTIVITY*
AUG-SEPT 97	*Hire Education Coordinator*
	Develop list of target schools and teachers
	Develop, schedule and implement training programs for teachers and new boat / monitoring volunteers - Delta College class scheduled to take place
	Acquire materials for Sentinel Monitoring
	Acquire volunteered boats for patrol
	Coordinate with teachers to schedule high school mentor program activities
OCTOBER 97	*Expanded monitoring of Delta*
	Stream Sentinel project kicks off in time for first rain events
	Target mapping of sites for increased regular monitoring, including industrial, municipal and agricultural dischargers
DECEMBER 97	*First project evaluation and report*
JANUARY 98	*Second Stream Sentinel group Kickoff*
JULY 98	*First-year evaluation and reporting, Year two work plan schedule developed*

PAYMENT SCHEDULE: Grant payments could be made on a half-yearly basis, in equal payments.

THIRD PARTY IMPACTS: No third party impacts are anticipated in this proposal.

CONTRACT REQUIREMENTS: All terms and conditions of the contract for Nonprofit Organizations under the Services/Consulting/Preconstruction/Research Contract are acceptable to BayKeeper. BayKeeper possesses a liability insurance policy of $1 million per occurrence for bodyily injury and property damage liability combined and will forward a certificate of insurance upon award of any grant.

No contractors are anticipated for this project and thus no bidding process would need to be used.