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ASSOCIATION OF BAY AREA GOVERNMENTS

Representing City and County Governments of the San Francisco Bay Area



**CALFED Bay-Delta Program  
1997 Category III  
Ecosystem Restoration Projects and Programs**

**Title:** Exotic Species: An Education/Outreach Program to Prevent New Introductions and to Control the Spread of Nonindigenous Aquatic Species in the San Francisco Bay/Delta Estuary.

**Applicant:** Association of Bay Area Governments (ABAG) for the San Francisco Estuary Project (SFEP).

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**Type of Org:** ABAG is a Joint Powers State Agency - Council of Governments

**Tax ID:** 94-2832478

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**Participants and Collaborators:** San Francisco Estuary Project - primary participant  
San Francisco Estuary Institute - scientific review  
Friends of the San Francisco Estuary - youth demonstration project  
ABAG - fiscal agent  
Various stakeholder representatives, scientists and resource managers  
Advisory Committee

**Project Group Type:** Group III: Services (Education)

**Applicant Authorized Signature:** Eugene Y. Leong 7/25/97  
Eugene Y. Leong, Executive Director Date

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***CALFED Bay-Delta Program  
1997 Category III  
Ecosystem Restoration Project and Programs***

***II. EXECUTIVE SUMMARY***

***A. Project Title***

Exotic Species: An Education/Outreach Program to Prevent New Introductions and to Control the Spread of Nonindigenous Aquatic Species in the San Francisco Bay/Delta Estuary

***Applicant***

Association of Bay Area Governments (ABAG) for the San Francisco Estuary Project (SFEP)

***B: Project Description and Primary Biological Objectives***

This is a two-year public education/outreach project to curb new introductions and the spread of exotic aquatic species in the San Francisco Bay Estuary, particularly in the North Bay and Delta. It is focused on six targeted audiences of primary concern: 1) the general public; 2) aquaculture; 3) aquarium shops/owners; 4) recreational boating/fishing communities; 5) seafood distributors; 6) nurseries/gardeners. SFEP will work collaboratively with the UC Sea Grant Program to address ballast water issues under another pending proposal.

The primary biological objective is to reduce undesirable species interactions resulting from existing and new introductions of exotic aquatic species. Primary habitats to be addressed are open water and instream areas, wetlands, riparian zones, and other aquatic-related areas. Primary species include native aquatic plants and animals in the San Francisco Estuary, particularly in the North Bay and Delta. Primary benefits of the project are enhanced sustainability of native plants, animals, and potentially all CALFED listed priority fish species, due to predation and competition for food supplies.

***C: Approach***

Given the already devastating effects of nonindigenous species and the difficulty in eradicating invasive species once established, the approach is to use education as a means of reducing the threat of new exotic species introductions by increasing awareness about exotic species and high risk activities and promoting behavioral changes among targeted constituencies most likely to intentionally or unintentionally introduce new species. The project will use a variety of educational materials and outreach strategies geared to the particular needs of each group. An Advisory Committee, composed of technical experts, stakeholders, resource managers and others will provide guidance on outreach strategies and assist in reviewing information for accuracy. Before and after surveys will be used to monitor the effectiveness of various educational approaches in increasing public awareness and reducing high risk practices.

***D: Justification***

Extensive human activity and accompanying environmental degradation make the San Francisco Estuary highly susceptible to invasion by exotic species. With 212 identified introduced species, the San Francisco Estuary is now the most invaded aquatic ecosystem in Northern America. Native fish species have been affected by the impacts of a variety of

nonindigenous species including the Asian clam *Potamocorbula amurensis*. Given the infinite number of pathways, the increasing frequency of introductions and the great difficulty in eradicating established species, it is imperative to make the general population aware of the danger presented by exotic species, and to take steps to educate those user groups most able to contribute to a positive outcome.

***E: Budget Costs and Third Party Impacts***

The total cost of the two-year project is \$287,308. The San Francisco Estuary Project, the Association of Bay Area Governments and others will provide in-kind services in the amount of \$64,400. CALFED Category III funds are requested in the amount of \$222,908. This is an educational project, and no third party impacts requiring mitigation are anticipated.

***F: Applicant Qualifications***

The San Francisco Estuary Project is responsible for the development and implementation of the project. Since its establishment in 1987, SFEP has undertaken a wide variety of public education/involvement programs to promote better understanding and protection of the San Francisco Estuary. Reducing the threat from exotic species and educating the public about the problems associated with exotic species and their transport are among SFEP's many stated objectives. SFEP held its first Exotic Species Forum in San Francisco in 1996 to address problems related to ballast water. Marcia Brockbank, Program Manager of the San Francisco Estuary Project, and Joan Patton, Communications Program Director, both have extensive experience in designing and implementing large-scale public education and involvement programs. ABAG, the project's fiscal agent, organized in 1961 to solve problems in the areas of environmental quality, land use, transportation, housing and economic development, has served as SFEP's fiscal agent since its establishment.

***G: Monitoring and Data Evaluation***

Educational materials will be reviewed by Dr. Andrew Cohen, San Francisco Estuary Institute, and other technical experts as well as by members of an Advisory Committee composed of scientists, stakeholders, and resource managers. Targeted constituencies will be surveyed before and after to document the program's effectiveness.

***H: Local Support/Coordination with Other Programs***

SFEP will coordinate its activities with other organizations involved in aquatic exotic species research and education, particularly: 1) the Western Regional Panel on Aquatic Nuisance Species; 2) the U.C. Sea Grant Program; 3) Team Arundo del Norte; 4) the San Francisco Estuary Institute (Dr. Andrew Cohen); 5) the Friends of the San Francisco Estuary (Youth Estuarine Science Program). SFEP will build on contacts established through its Clean Vessel Act contract with the Department of Boating and Waterways and outreach efforts to the boating community. The Project will work closely with representatives of targeted constituencies through its Advisory Committee members.

***Project: Exotic Species: An Education/Outreach Program to Prevent New Introductions and to Control the Spread of Nonindigenous Aquatic Species in the San Francisco Bay/Delta Estuary.***

### **III. PROJECT DESCRIPTION AND APPROACH**

#### ***A. Project Description and Approach***

The San Francisco Estuary Project will develop and implement a two-year education/outreach program targeted for six constituencies in order to curb the introduction and spread of exotic aquatic species in the Bay/Delta Estuary. Primary goals of the project are as follows: 1) to increase awareness about exotic species and their transport; 2) to promote user practices that prevent new introductions. Each of the six constituencies represent major pathways for new introductions: a) general public (individuals); b) aquaculture; c) aquariums; d) boating/fishing communities; e) seafood distributors; and f) nurseries/gardeners. Outreach to the shipping industry regarding ballast water will be addressed through a collaborative effort with the UC Sea Grant Program under a pending grant proposal.

The Estuary Project's approach is two-fold. During the first year, SFEP will identify the members of and establish contacts with each of the targeted constituencies; identify exotic species and the user practices of most concern; design and produce most education/outreach materials; survey targeted constituencies to determine levels of awareness and evaluate user practices; and begin outreach activities. An Advisory Committee, including technical experts, stakeholders, resource managers and other interested parties will be formed at the beginning of the project to provide guidance on outreach strategies and determine the best avenues for information dissemination, and to review informational materials for accuracy.

In the Program's second year, SFEP will complete identification of constituency members and begin major outreach to the targeted groups. This phase of the project will include a media campaign and press event aimed at educating the general public. Five informational forums will be held for members of the targeted user groups. A youth demonstration project will be developed in cooperation with the Friends of the San Francisco Estuary. Working with minority, high school students involved in the Friend's environmental education program, SFEP will create and field test an original, stand-alone curriculum on exotic species. The curriculum will become part of Friend's environmental education program and will be made available to high school teachers in the region. The project will conclude by resurveying members of the six constituencies to determine awareness/behavioral changes.

The program will educate about the threat exotic aquatic plants and animals and practices of high risk pose to the San Francisco Estuary ecosystem, and will present information about the user changes required by each group to prevent new introductions. Strategies to reach and educate each of the six constituencies will vary and will be tailored to the specific needs of each group. In order to minimize expense and maximize effectiveness, SFEP will work closely with representatives of each of the targeted audiences to develop avenues for disseminating information that build on existing structures: contacts with leaders in the targeted constituencies; trade shows and magazines; sporting events; fairs; company newsletters; marina and nursery activities; and industry programs and meetings.

Under a Clean Vessel Act grant from the Department of Boating and Waterways, SFEP has developed an extensive public education program for the boating community in the 12-county San Francisco Estuary to reduce pollution from vessel sewage discharges. This successful educational program is now in its fourth year and currently being expanded to reach communities along entire coast of California. SFEP will build on the experience and contacts developed from the boater education project to reach the recreational boaters, anglers and other groups targeted for the exotic species program. In efforts to continue to deter the transport and establishment of the zebra mussel in California, SFEP will build on Sea Grants outreach to recreational boaters and will expand this program originally funded with CALFED dollars.

Educational materials proposed to be produced include a slide show, two posters (exotic aquatic plants and aquatic animals of primary concern), a portable display, a four-page insert in *Estuary* newsletter, magazine/newspaper articles, and fact sheets/point-of-purchase brochures for each of the targeted constituencies (with translated versions as appropriate). SFEP will also make presentations to members of the various target groups and will participate in trade shows, sporting events and fairs. An Internet web site will serve as clearinghouse for general information on invasive species in the San Francisco Estuary and will provide a link with other organizations and experts involved in research and education on exotic aquatic species. Additionally, the Estuary Project will work with Dr. Andrew Cohen at the San Francisco Estuary Institute to incorporate into the outreach program information on exotics previously developed with CALFED funding.

The effectiveness of the education program will be documented in pre- and post-outreach surveys of the targeted groups.

***B: Location and/or Geographic Boundaries of the Project***

The project will address exotic aquatic species in the San Francisco Bay/Delta Estuary with an emphasis on nonindigenous aquatic animals and aquatic-related plants in the North Bay and Delta. (See accompanying map for details)

***C: Expected Results***

***Primary stressors:***

Undesirable species interactions resulting from existing and new introductions of exotic aquatic species.

***Habitats:***

Open water and instream areas, wetlands, riparian zones and other aquatic-related areas.

***Species:***

Native aquatic plants and animals (invertebrates and vertebrates) in the San Francisco Estuary threatened by exotic species. Potentially, all CALFED listed priority fish species, due to reduction in predation and less competition for food supplies.

***Primary benefits:***

Enhanced sustainability of native aquatic plant and animal populations, particularly fish species.

***Secondary benefits:***

Preservation of an ecologically diverse and productive natural estuarine system.

***Third party benefits:***

Potential economic benefits due to reduced dredging and levee maintenance, reduced clogging of water conveyance systems, and greater recreational boating/fishing opportunities.

The project furthers CALFED non-ecosystem goals by:

- a) reducing the risk to water supplies from species that may clog water intake pipes or threaten levee stability;
- b) promoting sustainable and diverse populations of native aquatic plants and animals; and
- c) promoting beneficial uses of the Bay/Delta system including shipping, recreational boating and sports fishing.

Programmatic benefits: Implementation of the Comprehensive Conservation and Management Plan (CCMP), particularly Objective AR-2: "Develop and implement species-specific management actions for the Estuary to assist in the recovery and maintenance of sustainable fish populations and to control or eliminate undesirable non-indigenous species" and specifically, Action AR-2.4: "Develop programs to educate the public about the problems with exotic species and their incidental transport or introduction."

To determine the effectiveness of the educational campaign in enhancing public awareness and changing behavior, before and after surveys of targeted constituencies will be conducted to quantify results.

#### ***D: Background and Biological/Technical Justification***

Estuarine environments are among the most altered ecosystems in the world (Moyle and Leidy, 1991). They are also among the most invaded ecosystems, especially in temperate regions. Extensive human activity and accompanying environmental degradation make these ecosystems more susceptible to invasion by exotic species. The San Francisco Bay/Delta Estuary is no exception.

The San Francisco Estuary is considered the major estuary in the United States most modified by human activity (Nichols et al, 1986). According to Cohen and Carlton (1995), the San Francisco Estuary is also the most invaded aquatic ecosystem in Northern America. There are 212 introduced species; 69 per cent of these are invertebrates, 15 per cent are fish and other vertebrates, 12 per cent are vascular plants and 4 percent are protists. The rate of introduction has accelerated in recent decades to an average of one new species every 12 weeks. Introduced species now account for the majority of species diversity in sites ranging from freshwater Delta locations, through Suisun and San Pablo Bays, to the shallower parts of the Central Bay, down to the South Bay.

Nonindigenous species have arrived in the San Francisco Estuary via a variety of pathways - ship fouling, ballast water, with oyster shipments, intentional governmental fish and shellfish stocking, intentional planting for marsh restoration or erosion control, accidental releases during stocking and planting, in bait and lobster packing material, in biocontrol releases, intentional releases by individuals wanting to establish food sources, and releases from research activities.

The effects and extent of distribution of nonindigenous species is often unpredictable and can have severe negative environmental and economic impacts. Of 52 exotic fishes in California, there is evidence that 20 have had or have the potential to have profound negative effects (Moyle, unpublished). Nearly 30 species of introduced freshwater, brackish and marine fish are now important carnivores throughout the Delta and Bay. Carp, mosquitofish, catfish, green sunfish, bluegills, inland silverside, largemouth and smallmouth bass, and striped bass - Eastern and central America fish - are among the most significant predators and habitat disturbers in the brackish and freshwater reaches of the Delta.

The Asian clam *Potamocorbula amurensis* first collected in the Estuary in 1986, has increased in number to average densities exceeding 2,000/m<sup>2</sup> and now controls phytoplankton populations in the North Bay. *Potamocorbula* in the Northern Estuary can filter the entire water column over the channels more than once a day, and over the shallows nearly 13 times per day. The Asian clam also consumes bacterioplankton, phytoplankton, and zooplankton (copepods), and may be responsible for the near collapse of the copepod-eating opossum shrimp *Neomysis* and resulting decline in juvenile striped bass.

The shipworm *Teredo navalis* caused \$615 million of structural damage to maritime facilities in a period of three years. The highly invasive zebra mussel, firmly established in the Great Lakes region, can colonize and clog pipes of up to two feet in diameter. If transported by ships, recreational vessels or other means into the Estuary, zebra mussels could severely disrupt the Estuary's water delivery systems.

Water hyacinth has become a major problem in Delta waterways - blocking canals, fouling irrigation pumps and boat propellers, and closing marinas. *Hydrilla*, now established in Clear Lake, poses an imminent threat to Delta waters. The giant reed *Arundo donax*, has been observed in the San Joaquin and Sacramento Valleys. This rapidly growing plant is readily available in nurseries.

Nonindigenous species are associated with economic losses resulting from the displacement of native species; ship, waterway and water system fouling; levee maintenance; interference with aquaculture; alteration of properties; loss of recreational opportunities and aesthetic values; and transmission of disease. *Vibrio cholerae* was recently detected in the ballast water of ships arriving in the Gulf of Mexico from foreign ports with outbreaks of cholera.

Eradicating established exotic species is extremely difficult. Prevention is the more effective approach. Given the numerous transport pathways and potentially devastating impacts from the actions of a single individual, education is essential for enlisting community cooperation in controlling new introductions. This project will focus on six targeted audiences of most concern: 1) general public; 2) aquaculture; 3) boating/fishing community; 4) aquariums/pet owners; 5) seafood distributors; and 6) nurseries/gardeners. The Estuary Project is collaborating with UC Sea Grant on another grant proposal to address the shipping industry/ballast water issue.

The University of Minnesota Sea Grant Program in conjunction with the Minnesota Department of Natural Resources recently released survey results of a three-state education campaign for boaters showing the effectiveness of education in raising awareness about exotic species and changing user practices to prevent new introductions. The goals of the SFEP project reflect those of the Minnesota Program: a) to create public awareness regarding the threat of exotic species; and b) to promote behavior changes resulting in the prevention of new introductions.

#### **References:**

Cohen, A.N. and J.T. Carlton. 1995. Nonindigenous aquatic species in a United States estuary: a case study of the biological invasions of the San Francisco Bay and Delta. Report for U.S. Fish and Wildlife Service. 245 pp.

Moyle, P.B. and R.L. Leidy. 1991. Loss of biodiversity in aquatic ecosystems: evidence from fish faunas. Pages 127-170 in P.L. Fiedler and S.K. Jain, editors. Conservation biology: the theory and practice of nature conservation, preservation, and management. Chapman and Hall, New York.

Nichols, F.H., J.E. Cloern, S.N. Luoma, and D.H. Peterson. 1986. The modification of an estuary. *Science*. 231:567-573.

### ***E. Monitoring and Data Evaluation***

The project will monitor the educational benefits of the program by doing before and after surveys with each of the targeted constituencies to document changes in awareness and behavior. Dr. Andrew Cohen of the San Francisco Estuary Institute has agreed to review materials for accuracy. Dr. Paul Olin of the UC Sea Grant Program has agreed to assist with review of materials. An Advisory Committee composed of technical experts, stakeholders, resource managers and other interested parties will also review outreach strategies and educational materials to ensure accuracy and effective implementation. The Estuary Project is coordinating its activities with the following organizations currently involved in exotic species issues: a) UC Sea Grant Extension Program, SF Bay Area (ballast water); b) Team Arundo del Norte (Arundo control); c) the Western Regional Panel on Aquatic Species (SFEP serves as liaison to the panel and facilitated the Education Committee at its July 1997 Forum on Nonindigenous Species); d) California Exotic Pest Plant Council; e) San Francisco Estuary Institute and Dr. Andrew Cohen (nonindigenous aquatic species).

### ***G. Implementability***

Special permits, easements and compliance with particular environmental laws and regulations are not anticipated with this project. Support and involvement of representatives from each of the targeted constituencies will be a major feature of the education/outreach effort. Coordination with other organizations involved with exotic species research and education is planned into the project.

**IV. COSTS AND SCHEDULE TO IMPLEMENT PROPOSED PROJECT**

**A. Budget Costs**

<b>1. Budget Breakdown by Quarterly Tasks</b>	<b>Cat. III Funds</b>	<b>In-Kind Match</b>
<b>Task 1</b> (Identify target species and target constituencies; survey constituencies for general awareness about exotic species issues.)	\$19,217	\$8,050
<b>Task 2</b> (Design/produce public education materials for the general public and boating/fishing constituencies; begin outreach activities to these constituencies.)	\$80,234	\$16,100
<b>Task 3</b> (Design/produce educational materials for aquaculture, aquarium and seafood distribution constituencies; begin outreach activities to these constituencies and continue with others.)	\$30,767 and continue with others)	\$8,050
<b>Task 4</b> (Design/produce educational materials for nursery constituency; begin outreach activities to this constituency and continue outreach to other constituencies.)	\$23,067	\$8,050
<b>Task 5</b> (Establish Web Site; hold five public forums for targeted constituencies and implement youth demonstration project.)	\$31,917	\$8,050
<b>Task 6</b> (Major media event; continue with outreach activities)	\$23,617	\$8,050
<b>Task 7</b> (Resurvey constituencies for changes; conduct final program evaluation)	\$15,547	\$8,050
<b>2. Total funds requested from Category III</b>	<b>\$222,908</b>	
<b>3. Total In-kind Match</b>		<b>\$64,400</b>
<b>4. Total Budget</b>		<b>\$287,308</b>

The San Francisco Estuary Project is dependent on CALFED Category III funding of \$222,908 to implement the project. The first year of the program will identify nonindigenous aquatic species of most concern, identify the members of target groups and design and produce educational/outreach materials. Year two will build on the preparations of year one by implementing the outreach program to the six constituencies: 1) recreational boaters/anglers; 2) aquaculture industry; 3) aquarium shops/pet owners; 4) seafood distributors; 5) nurseries/gardeners; and 6) the general public. Year one and year two could be funded separately; however, the program's effectiveness is based on developing the educational materials during the first year, and then using them the second year with the targeted audiences.

The selected audiences have been identified as those mostly likely to transport exotic species. SFEP will be working in collaboration with the Sea Grant program which has applied for funding to educate the shipping industry about the threat from ballast water. Although SFEP proposes general public education about ballast water, we will not target shipping interests. SFEP is currently collaborating with the Team Arundo del Norte and will assist in the production of a brochure on that subject, funded by the Department of Fish and Game. Finally, SFEP has received a grant from the Department of Boating and Waterways to educate boaters on pollution from vessel sewage discharges, and will use the contacts and dissemination routes developed from that effort to reach the boating community with this new message. ABAG has agreed to provide a 2.5 percent in-kind match.

### ***B. Milestones***

The SFEP exotic species project is a two-year program. Tasks are broken into quarterly segments with specific milestones identified by work products and specific activities to be completed within each quarter. Although the quarters are linked, individual quarters is comprised of discrete tasks and milestones. Payments are requested on a monthly basis, with the completion of each specific product/activity serving as tangible milestones for each quarter.

### ***C. Third Party Impacts***

The project does not anticipate any impacts requiring mitigation because of its educational focus.

## V. APPLICANT QUALIFICATIONS

### ***ABAG and the San Francisco Estuary Project***

ABAG is owned and operated by the cities and counties of the San Francisco Bay Region. It was organized in 1961 under the Joint Exercise of Powers Act to help solve problems in areas such as environmental quality, land use, transportation, housing and economic development. It is designated for planning purposes under several federal and California state laws, and serves as the area-wide clearinghouse for federal Executive Order 12372.

The Association is governed by a General Assembly representing city and county officials, and has a 38-member Executive Board of county supervisors, mayors and city council members. The Executive Board provides policy direction to its committees and staff between meetings of the General Assembly. ABAG works cooperatively through interagency agreements and memoranda of understanding with other regional, state and federal agencies.

The San Francisco Estuary Project (SFEP) is a joint state/federal/local partnership that was established in 1987 under the Clean Water Act's National Estuary Program to develop and implement the Comprehensive Conservation and Management Plan (CCMP) for the Bay-Delta Estuary. SFEP's purpose is to develop effective management, restore water quality and natural resources, while maintaining economic vitality through implementation of the CCMP. The CCMP's nine program areas and 145 actions recognize the Estuary's environmental value and the need to manage habitats within the sub-watersheds from an ecosystem perspective.

SFEP is housed within the San Francisco Bay Regional Water Quality Control Board, which was designated as the lead agency for implementing the CCMP. ABAG acts as SFEP's fiscal agent. SFEP's public education/involvement program has produced the following products with the following outreach success:

First ballast water educational forum, 1996, San Francisco	90 persons
Clean Vessel Act boater education program	100,000 persons
Three State of the Estuary Conferences, plus media coverage	2 million+
"Paint the Drain" Campaign (storm drain stenciling)	12 counties
Presentations to organizations	1000's of persons
Public hearings and media coverage	2 million+
Magazine articles/TV/radio PSAs	5 million+
Selected publications and distribution	
- Fact sheets	250,000
- SFEP brochure	200,000
- Estuarywise	30,000
- Estuary newsletter	mailing list of 3,500
- Boater education materials	100,000+
Seven slide shows and video tapes	1,000's of viewers
Co-sponsorship of community activities/grant programs	1 million+

### ***A. Project Organization***

The San Francisco Estuary Project will be responsible for the development and management of the project. Marcia Brockbank will serve as Technical Contact and overall Project Director, with responsibility for contract oversight and management. Joan Patton will be the project manager (25%). One full-time person and one part-time intern (20%) will be hired to help implement program activities. ABAG will serve as the fiscal agent.

The following in-kind support will be provided each year: 1) SFEP staff, Marcia Brockbank 5% of her time for managerial support (\$3,900); Liz Blair and Marcie Adams, 5% each of their time for administrative support (\$2,250/each); ABAG staff (Gary Binger, Planning Director and SFEP liaison; Joe Chan, Finance Director; Terry Bursztynsky, Environmental Management Director) will provide 2.5% in-kind accounting and managerial support (\$2,800); San Francisco Bay Regional Water Quality Control Board in-kind support for overhead expenses of telephones, copying, space, supplies, etc. (\$12,000); Paul Olin, UC Sea Grant Program, technical assistance (\$1,500); and member participation on the Advisory Committee, two meetings annually and other technical assistance of the 25-member committee (estimated \$10,000). Dr. Andrew Cohen, San Francisco Estuary Institute, and other technical experts will assist with technical review of the information presented.

### ***B. Biosketches for Principals***

**Marcia Brockbank:** Ms. Brockbank is Program Manager for the San Francisco Estuary Project and has overseen a wide array of consensus-based programs aimed at implementing the 145 actions of the CCMP. She is a member of the Western Regional Panel on Aquatic Nuisance Species and will serve as liaison with that organization. Ms. Brockbank is an ABAG employee on an intergovernmental personnel assignment to the San Francisco Bay Regional Water Quality Control Board. She has been with the Estuary Project since 1987, Project Manager since 1994 and has a B.A. from the University of Utah. Ms. Brockbank resigned as a member of CALFED's Bay-Delta Advisory Council, representing the San Francisco Estuary Project, as of July 23, 1997.

**Joan Patton:** Ms. Patton is Communications Program Director for the San Francisco Estuary Project and Program Manager for the Estuary Project's Boater Education Program. She has been responsible for organizing three State of the Estuary Conferences, the "Paint the Drain" urban runoff education/outreach program, and numerous other public education/outreach campaigns. She has a B.A. from U.C. Berkeley and an M.A. from USF.

**Table 1 - Cost Breakdown Table**

**Year One - First Quarter - Task One**

<b>Project Phase and Task</b>	<b>Direct Labor Hours</b>	<b>Direct Salary and Benefits</b>	<b>Products and Other Direct Costs</b>	<b>Category III</b>
<b>Establish Advisory Committee</b>	125	\$2,607		\$2,607
<b>Identify NIS of most concern</b>	171	\$3,567		\$3,567
<b>Develop databases for five constituencies</b>	100	\$2,086		\$2,086
<b>Develop outreach strategies for targeted groups</b>	200	\$4,172		\$4,172
<b>Develop and mail initial surveys to targeted groups</b>	100	\$2,086		\$2,086

<b>Quarterly Sub Total</b>	<b>\$14,518</b>
<b>ABAG Ten Percent Overhead</b>	<b>\$1,613</b>
<b>Total Category III Funds:</b>	<b>\$16,131</b>
<b>Total In-Kind Match:</b>	<b>\$8,050</b>
<b>Total Quarterly Budget:</b>	<b>\$24,181</b>

**Second/Third Quarters - Task Two**

<b>Project Phase and Task</b>	<b>Direct Labor Hours</b>	<b>Direct Salary and Benefits</b>	<b>Products and Other Direct Costs</b>	<b>Category III</b>
<b>Develop Public Outreach Materials</b>				
Slide Show and Copies	167	\$3,483	\$3,500	\$6,983
2 Posters - 40,000 count	200	\$4,172	\$15,000	\$19,172
Portable Display	150	\$3,129	\$2,000	\$5,129
Article in "Estuary" and Extra Copies of Four-Page Insert	100	\$2,086	\$5,000	\$7,086
<b>Develop Boater/ Angler Materials</b>	275	\$5,736	\$3,500	\$9,236
<b>Presentations, Distribution of Materials, Outreach, Fairs</b>	300	\$6,258	\$1,000	\$7,258
<b>Tabulate Surveys</b>	200	\$4,172		\$4,172
<b>Technical Review of Materials</b>	100	\$5,000		\$5,000

<b>Quarterly SubTotal</b>	<b>\$64,036</b>
<b>ABAG Ten Percent Overhead</b>	<b>\$7,115</b>
<b>Total Category III Funds:</b>	<b>\$71,151</b>
<b>Total In-Kind Match:</b>	<b>\$16,100</b>
<b>Total Quarterly Budget:</b>	<b>\$87,251</b>

**Fourth Quarter - Task Three**

<b>Project Phase and Task</b>	<b>Direct Labor Hours</b>	<b>Direct Salary and Benefits</b>	<b>Products and Other Direct Costs</b>	<b>Category III</b>
<b>Develop materials for Aquaculture, Aquariums and Seafood Groups</b>	522	\$10,890	\$10,500	\$21,390
<b>Distribution of Materials, Presentations, Outreach</b>	174	\$3,630	\$1,000	\$4,630

<b>Quarterly SubTotal</b>				<b>\$26,020</b>
<b>ABAG Ten Percent Overhead</b>				<b>\$2,891</b>
<b>Total Category III Funds:</b>				<b>\$28,911</b>
<b>Total In-Kind Match:</b>				<b>\$8,050</b>
<b>Total Quarterly Budget:</b>				<b>\$36,961</b>

- Year One -

<b>Postage and Travel (\$7,400 + 10% Overhead)</b>	<b>\$8,222</b>
<b>Total Category III Funds:</b>	<b>\$124,415</b>
<b>Total In-Kind Match:</b>	<b>\$32,200</b>
<b>Total Annual Budget:</b>	<b>\$156,615</b>

**Year Two - First Quarter - Task Four**

<b>Project Phase and Task</b>	<b>Direct Labor Hours</b>	<b>Direct Salary and Benefits</b>	<b>Products and Other Direct Costs</b>	<b>Category III</b>
<b>Develop Materials for Nurseries</b>	522	\$10,890	\$3,500	\$14,390
<b>Distribution of Materials, Presentations, Outreach</b>	174	\$3,630	\$1,000	\$4,630
<b>Quarterly SubTotal</b>				<b>\$19,020</b>
<b>ABAG Ten Percent Overhead</b>				<b>\$2,113</b>
<b>Total Category III Funds:</b>				<b>\$21,133</b>
<b>Total In-Kind Match:</b>				<b>\$8,050</b>
<b>Total Quarterly Budget:</b>				<b>\$29,183</b>

**Second Quarter - Task Five**

<b>Project Phase and Task</b>	<b>Direct Labor Hours</b>	<b>Direct Salary and Benefits</b>	<b>Products and Other Direct Costs</b>	<b>Category III</b>
<b>Develop Web Site</b>	100	\$2,000		\$2,000
<b>Hold Forums for Five Targeted Groups</b>	522	\$10,890	\$4,000	\$14,890
<b>Youth Demonstration Project</b>	174	\$3,630	\$10,000	\$13,630
<b>Quarterly SubTotal</b>				<b>\$30,520</b>
<b>ABAG Ten Percent Overhead</b>				<b>\$3,391</b>
<b>Total Category III Funds</b>				<b>\$33,911</b>
<b>Total In-Kind Match</b>				<b>\$8,050</b>
<b>Total Quarterly Budget</b>				<b>\$41,961</b>

**Third Quarter - Task Six**

<b>Project Phase and Task</b>	<b>Direct Labor Hours</b>	<b>Direct Salary and Benefits</b>	<b>Products and Other Direct Costs</b>	<b>Category III</b>
<b>Media Event and Outreach</b>	696	\$14,520	\$6,000	\$20,520

<b>Quarterly SubTotal</b>				<b>\$20,520</b>
<b>ABAG Ten Percent Overhead</b>				<b>\$2,280</b>
<b>Total Category III Funds</b>				<b>\$22,800</b>
<b>Total In-Kind Match</b>				<b>\$8,050</b>
<b>Total Quarterly Budget</b>				<b>\$30,850</b>

**Fourth Quarter - Task Seven**

<b>Project Phase and Task</b>	<b>Direct Labor Hours</b>	<b>Direct Salary and Benefits</b>	<b>Products and Other Direct Costs</b>	<b>Category III</b>
<b>Resurvey Groups and Tabulate Results</b>	264	\$5,592		\$5,592
<b>Complete All Tasks and Evaluate Program</b>	264	\$5,592		\$5,592

<b>Quarterly SubTotal</b>				<b>\$11,184</b>
<b>ABAG Ten Percent Overhead</b>				<b>\$1,243</b>
<b>Total Category III Funds:</b>				<b>\$12,427</b>
<b>Total In-Kind Match:</b>				<b>\$8,050</b>
<b>Total Quarterly Budget:</b>				<b>\$20,477</b>

- Year Two -

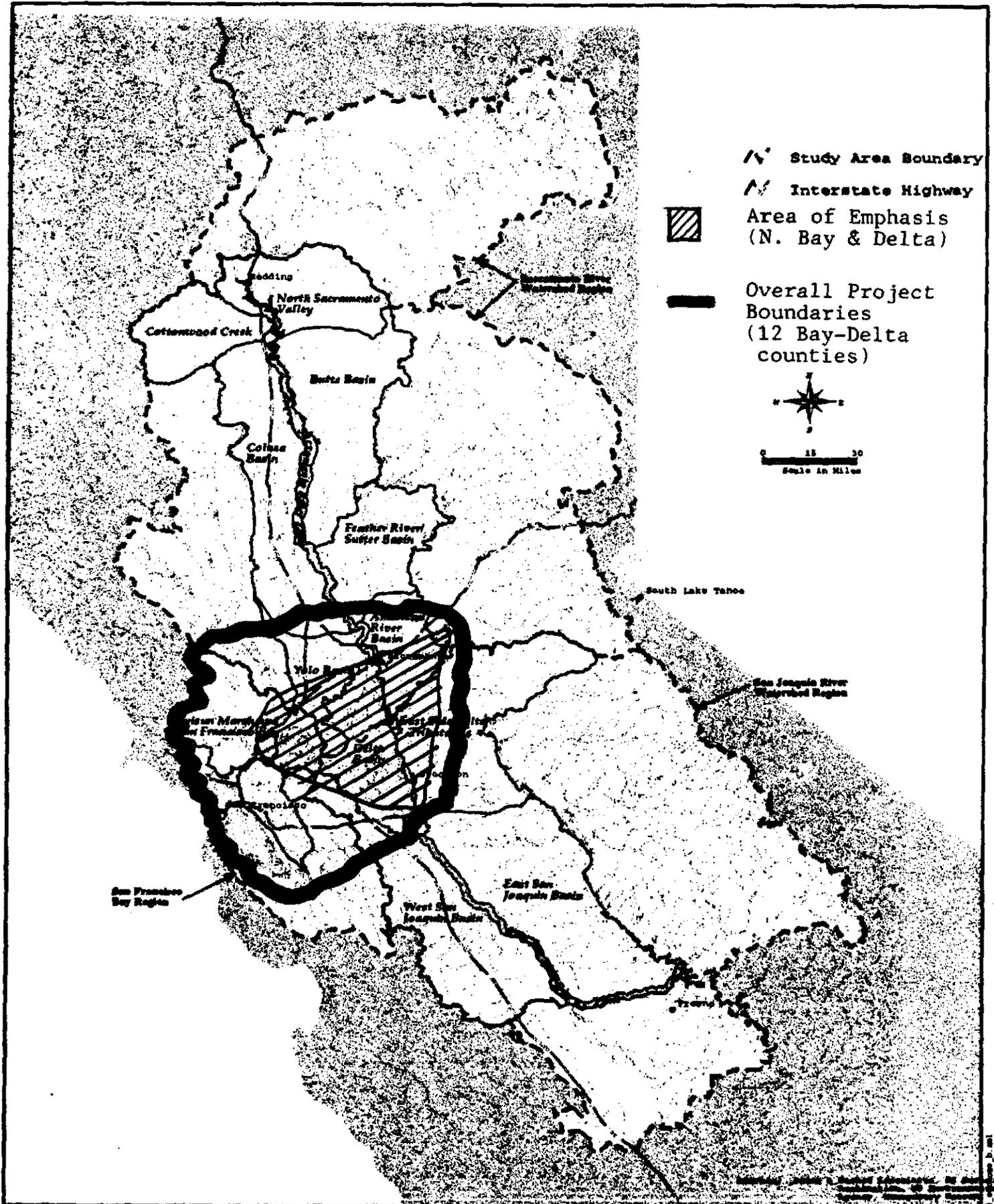
<b>Postage and Travel (\$7,400 + 10% Overhead)</b>	<b>\$8,222</b>
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<b>Total Category III Funds:</b>	<b>\$98,493</b>
<b>Total In-Kind Match:</b>	<b>\$32,200</b>
<b>Total Annual Budget:</b>	<b>\$130,693</b>

- Project Totals -

<b>Total Category III Funds Requested:</b>	<b>\$222,908</b>
<b>Total Match:</b>	<b>\$64,400</b>
<b>Total Budget:</b>	<b>\$287,308</b>

# GEOGRAPHIC SCOPE OF RFP PROGRAMS AND PROJECTS



# NONDISCRIMINATION COMPLIANCE STATEMENT

COMPANY NAME

Association of Bay Area Governments

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

## CERTIFICATION

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

OFFICIAL'S NAME

Eugene Y. Leong

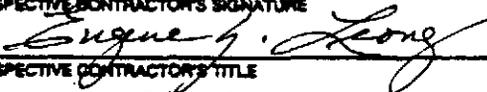
DATE EXECUTED

7/25/57

EXECUTED IN THE COUNTY OF

Alameda

PROSPECTIVE CONTRACTOR'S SIGNATURE



PROSPECTIVE CONTRACTOR'S TITLE

Executive Director

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME