

FI-312

I. Executive Summary

a. Project Title and Applicant Name:

City of Sacramento Fish Screen Improvement Project (Phase I)	
City of Sacramento, Department of Utilities	5770 Freeport Boulevard, Suite 100
Gary E. Gosse, Project Manager	Sacramento, CA 95822
Phone: (916) 433-6611	Fax: (916) 433-6652

b. Project Description and Primary Biological/Ecological Objectives: The existing fish screens at the City of Sacramento's water intake structures at the Sacramento River Water Treatment Plant (SRWTP) on the Sacramento River and the E.A. Fairbairn Water Treatment Plant (FWTP) on the Lower American River (LAR), will need to be replaced to be consistent with current California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) criteria. The project would consist of three phases: 1) development and evaluation of alternatives, including environmental documentation; 2) final design and construction; and 3) monitoring and evaluation. This proposal seeks partial funding under the Category III 1997 funds for Phase 1. The cost of Phase 1 would be shared among the U.S. Bureau of Reclamation, the City of Sacramento, and CALFED/Category III.

c. Approach/Tasks/Schedule:

Sacramento River Diversion (SRWTP)

- Task 1: *Complete update of preliminary engineering design report.* Deliverable: Updated Pre-Design Report.
- Task 2: *Complete development and evaluation of alternatives.* Deliverable: Final Feasibility Report.
- Task 3: *Complete environmental documentation.* Deliverable: Administrative, Public, and Final NEPA/CEQA documents.

American River Diversion (FWTP)

- Task 1: *Complete update of preliminary engineering design report.* Deliverable: Updated Pre-Design Report.
- Task 2: *Complete development and evaluation of alternatives.* Deliverable: Final Feasibility Report.
- Task 3: *Complete environmental documentation.* Deliverable: Administrative, Public, and Final NEPA/CEQA documents.

All three tasks for both the SRWTP and FWTP will be completed by June 1, 1998.

d. Justification for Project and Funding by CALFED: The SRWTP and FWTP diversions are excellent candidates for fish screen improvement projects under 1997 Category III funding because of the potential for direct, short-term benefit to multiple high-risk fish species. The replacement screens could be designed to meet diversion needs through the year 2030, potentially providing long-term benefits as well.

e. Budget Costs and Third Party Impacts: The total cost for Phase 1 is estimated to be \$225,000. Task 1-\$25,000. Task 2-\$75,000. Task 3-\$125,000. The U.S. Bureau of reclamation has approved a 50% cost share under P.L. 102-575, Title XXXIV, Section 3406 (b) (21). The City of Sacramento is proposing that CALFED fund up to 50% of the remaining costs, equal to \$56,250.

No third-party impacts are anticipated.

f. Applicant Qualifications: The City of Sacramento has assembled a team of resource consultants to conduct the project. Montgomery Watson and SWRI are proposed to conduct the technical work because of their extensive individual and corporate experience in fish screen design and environmental documentation projects.

g. Monitoring and Data Evaluation: Screen performance would be evaluated, in a subsequent phase of the project, to determine whether the screen meets hydraulic performance criteria under various river flow and pumping rates, and debris loading/fouling levels. Additional studies would be performed to estimate the relative degree of fish losses that would occur at the screen under different screen hydraulics dictated by different river flows, pumping rates, and debris-accumulation levels.

h. Local Support/Coordination with other Programs/Compatibility with CALFED objectives: CALFED's "Summary of Technical Team Reports Stressors and Example Restoration Actions" dated June 5, 1997, identifies an example restoration action titled, "Assess feasibility, prioritize, install, upgrade, and maintain fish screens in order to decrease entrainment" as consistent with 1997 Category III funding.

II. Title Page

a. Title of Project: City of Sacramento Fish Screen Improvement Project (Phase I)

Name of applicants(s): City of Sacramento, Department of Utilities

City of Sacramento, Department of Utilities

~~Gary E. Gossa~~, Project Manager

Phone: (916) 433-6611

5770 Freeport Boulevard, Suite 100

Sacramento, CA 95822

Fax: (916) 433-6652

Principal Investigator(s):

Don Spiegel, P.E.

Principal Engineer

Montgomery Watson

777 Campus Commons, Suite 250

Sacramento, CA 95825

Phone: (916) 924-8844

Fax: (916) 924-9102

Paul M. Bratovich

Partner/Senior Scientist

Surface Water Resources, Inc. (SWRI)

455 Capitol Mall, Suite 600

Sacramento, CA 95814

Phone: (916) 325-4050

Fax: (916) 446-0143

c. Type of Organization: Municipal Government Organization

d. Tax Identification Number: 94-6000410

e. Technical and Financial Contact Person:
(same as applicant, above)

f. Participants/Collaborators in Implementation:

g. Group 3: Services

III. Project Description and Approach

a. Project Description and Approach:

The existing fish screens at the City of Sacramento's water intake structures at the Sacramento River Water Treatment Plant (SRWTP) on the Sacramento River and the E.A. Fairbairn Water Treatment Plant (FWTP) on the Lower American River (LAR), will need to be replaced to be consistent with current California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) criteria. The ultimate project would consist of three phases: 1) development and evaluation of alternatives, including environmental documentation; 2) final design and construction; and 3) monitoring and evaluation. This proposal seeks partial funding under the Category III 1997 funds for Phase 1. The cost of Phase 1 would be shared among the U.S. Bureau of Reclamation, the City of Sacramento, and CALFED/Category III.

As part of the feasibility study, a range of alternatives would be assessed, including options for replacing the screens at the existing intake structures, a proximate relocation of the SRWTP, or designing screens which would be compatible with expanded diversions at a later date to minimize construction in the river and provide long-term fish screening protection. Development of alternatives would consist of updating the preliminary engineering design and assessment of alternatives according to their environmental, engineering, and economic feasibility. Alternatives determined to be feasible would be included in the environmental analysis and documentation process.

The environmental review process would consist of agency consultation, public scoping, noticing, and preparation of administrative, public, and final drafts of NEPA/CEQA documents. This process will include the solicitation of resource agency participation in the pre-design considerations regarding screen criteria applications, the environmental review process, and ESA consultations. The NEPA/CEQA document would evaluate the alternatives deemed to be feasible, as well as the no-project alternative.

b. Location and/or geographic boundaries of project:

Sacramento River Diversion

The intake pier for the City's SRWTP is located in Sacramento County in the Sacramento River downstream from the confluence of the American River. The Sacramento River water treatment plant is located east of the I-5 freeway and adjacent to and north of the Southern Pacific Railyards.

American River Diversion

The intake pump station for the City's FWTP is located in Sacramento County in the American River downstream from the Howe Avenue Bridge. The FWTP itself and the intake are located just east of, and adjacent to, the campus of California State University, Sacramento.

c. Expected benefit(s):

CALFED's "Summary of Technical Team Reports Stressors and Example Restoration Actions" dated June 5, 1997, identifies an example restoration action titled, "Assess feasibility, prioritize, install, upgrade, and maintain fish screens in order to decrease entrainment" as consistent with 1997 Category III funding.

The proposed fish screen improvement project has the potential to directly benefit multiple priority species including steelhead, winter-run, spring-run, and late-fall-run chinook salmon, splittail, and green sturgeon, by reducing the stressor of entrainment on the Sacramento and American rivers. This stressor is common to most of the fish species identified as priority species by CALFED.

The primary benefit of cost-sharing and collaborative efforts on these fish screen improvement projects will be to expedite and leverage the implementation of the replacement fish screen. Secondary benefits of this project could include the use of the results to upgrade other fish screens on the Sacramento River and other areas.

An important non-ecosystem objective of this project will be the benefits to water supply in the Sacramento area. Without replacement of the fish screen, the City of Sacramento will not be able to increase pumping capacity to meet increasing demands. Third party benefits include water supply benefits to other entities dependent on water diversion from these sites (e.g. Sacramento County, Arcade Water District). Coordination of the fish screen replacement will provide the necessary protection to priority fish species compatible with water supply demands.

d. Background and Biological/Technical Justification:

The SRWTP diversion potentially affects species such as steelhead, winter-run, spring-run, and late-fall-run chinook salmon, splittail, and green sturgeon. The FWTP diversion potentially affects steelhead and splittail, and fall-run chinook salmon. Both of these facilities require fish screen improvement projects to meet screening criteria to protect these species.

The basis for expected benefit includes compliance with resource agency guidelines and occurrence of the priority species in the vicinity of the diversions. These new screening facilities are anticipated to provide the most reasonably expedient and effective means of protecting juveniles of these fish species from the chronic impacts of entrainment and/or entrapment.

Efforts to improve the fish screens at these diversion facilities have been underway since 1987. Preliminary pre-design work has been completed for both projects. Additionally, the U.S. Bureau of Reclamation has recently approved assisting with feasibility studies, environmental documentation, and construction of the fish screens associated with the Anadromous Fish Screen Improvement Program under the Central Valley Project Improvement Act (Public Law 102-575, Title XXXIV, Section 3406 (b) (21)). Reclamation is authorized to contribute an amount up to, but not exceeding, 50 percent of the total cost of the project.

The existing fish screen at the SRWTP intake pier has five gate openings at four different elevations. Steel bar grates with ¾-inch stainless steel mesh screens cover the gate openings in the intake pier. The ¾-inch mesh screen material was installed over the steel bar grates in the 1960's.

The existing fish screens at the FWTP are located on each side of the intake with two screens for each pump. The fish screens consist of 5/16-inch perforated stainless steel plate with 3/8-inch holes on ½-inch staggered centers.

Recently updated fish screening criteria from CDFG and NMFS require that, in waters where steelhead fry occur, slotted openings in the screen shall not exceed 0.0689 in. which is 80% smaller than the existing opening the screen.

A 1988 engineering report commissioned by the City of Sacramento on the pre-design work for the expansion of the FWTP included expanding the existing intake pump station on the American river. A 1995 engineering report commissioned by the City of Sacramento covered pre-design work for the expansion of the Sacramento River water treatment plant, including a new intake pump station on the Sacramento River. It is expected that work on the feasibility report and final design of the screens could begin almost immediately.

As part of invoicing activities, monthly progress reports will be prepared describing key activities performed and deliverables submitted. These reports will include financial summaries. All tasks will be completed and final reports submitted by June 1, 1998.

e. Proposed Scope of Work:

Sacramento River Diversion (SRWTP)

Task 1: *Complete update of preliminary engineering design report.* Deliverable: Updated Pre-Design Report.

Task 2: *Complete development and evaluation of alternatives.* Deliverable: Final Feasibility Report.

Task 3: *Complete environmental documentation.* Deliverable: Administrative, Public, and Final NEPA/CEQA documents.

American River Diversion (FWTP)

Task 1: *Complete update of preliminary engineering design report.* Deliverable: Updated Pre-Design Report.

Task 2: *Complete development and evaluation of alternatives.* Deliverable: Final Feasibility Report.

Task 3: *Complete environmental documentation.* Deliverable: Administrative, Public, and Final NEPA/CEQA documents.

As part of invoicing activities, monthly progress reports will be prepared describing key activities performed and deliverables submitted. These reports will include financial summaries. All tasks will be completed and final reports submitted by June 1, 1998.

f. Monitoring and Data Evaluation:

In a subsequent phase of the project, screen performance would be evaluated to determine whether the screen meets hydraulic performance criteria under various river flow and pumping rates, and debris loading/fouling levels. Additional studies would be performed to estimate the relative degree of fish losses that would occur at the screen under different screen hydraulics dictated by different river flows, pumping rates, and debris-accumulation levels.

Approach and sweeping velocities would be measured along the screen face under a range of river flow and pumping conditions. Approach and sweeping velocity measurements would be taken at multiple locations vertically and horizontally. Debris levels on the front of the screen as well as biological growth (i.e., algae, periphyton) on the back side of the screen would be documented each time screen hydraulics were measured. Effectiveness of screen cleaning mechanisms would be evaluated. It is presently anticipated that the monitoring

report will include elements identified by the resource agencies (NMFS, USFWS, CDFG) and submitted to them for review, as appropriate.

g. Implementability:

The SRWTP and FWTP diversions are excellent candidates for fish screen improvement projects under 1997 Category III funding because of the potential for direct, short-term benefit to multiple high-risk fish species. The replacement screens could be designed to meet diversion needs through the year 2030, potentially providing long-term benefits as well.

Compliance with all laws and regulations will be incorporated into the environmental review process described above, including ESA consultation. Additionally, the participation of resource agencies early in the environmental review process is expected to increase the efficiency of the process.

IV. Costs and Schedule to Implement Proposed Project

The total cost for Phase 1 is estimated to be \$225,000. Task 1-\$25,000. Task 2-\$75,000. Task 3-\$125,000. The U.S. Bureau of reclamation has approved a 50% cost share under P.L. 102-575, Title XXXIV, Section 3406 (b) (21). The City of Sacramento is proposing that CALFED fund up to 50% of the remaining costs, equal to \$56,250.

The City of Sacramento is prepared to immediately perform these tasks. As part of invoicing activities, monthly progress reports will be prepared describing key activities performed and deliverables submitted. These reports will include financial summaries. All tasks will be completed and final reports submitted by June 1, 1998.

No third-party impacts are anticipated.

V. Applicant Qualifications

Staff of the City of Sacramento Department of Utilities operates and maintains the City's two water treatment plants (SRWTP and FWTP) as well as 29 water production wells and ten water storage tanks. The Department staff has years of experience and participation in the design and construction of many improvements to these facilities.

The City of Sacramento has assembled a team of resource consultants to conduct the project. Montgomery Watson and Surface Water Resources, Inc. are proposed to conduct the technical work because of their extensive individual and corporate experience in fish screen design and environmental documentation projects. The project applicant and principal investigators do not have any conflicts of interest. References for similar projects are provided below.

Montgomery Watson
Mr. Jack Warren
Special Projects Engineer
Placer County Water Agency
144 Ferguson Road
Auburn, CA 95604
Phone: (916) 823-4889

Surface Water Resources, Inc.
Mr. O.L. "Van" Tenney
District Manager
Glenn-Colusa Irrigation District
344 East Laurel Street
Willows, CA 95988
Phone: (916) 934-8881

Mr. Les Heringer, Jr.
M&T Chico Ranch
Phone: (916) 342-2957

Mr. Rod Hall
Environmental Specialist
U.S. Bureau of Reclamation
7794 Folsom Dam Road
Folsom, CA 95630
Phone: (916) 989-7279

Mr. Keith DeVore
Chief, Water Resources Division
Sacramento County Water Agency
827 7th Street, Room 301
Sacramento, CA 95814
Phone: (916) 440-6851

PAUL BRATOVICH, SWRI, has worked as a fisheries consultant and water resources specialist in California for the past 14 years. As a recognized fisheries expert of Central Valley streams and the Bay/Delta, with particular expertise on the American River, he is actively participating in a broad range of forums in a variety of consultative, advisory, and technical expert capacities. Recently he, along with SWRI, was retained by the Arcade Water District to initiate an evaluation of various water intake configurations. Mr. Bratovich is also supervising the preparation of a joint EIS/EIR to address ongoing problems associated with the fish screens at the Glenn-Colusa Irrigation District facilities. For the EIS/EIR, Mr. Bratovich manages all aquatic habitat and fisheries impacts analyses which focus on the state and federally endangered winter-run chinook salmon, and coordinates client liaison for interagency committee meetings, field surveys, and interpretation of engineering alternatives. In addition to river intake facilities, Mr. Bratovich is familiar with reservoir and dam intake structures; he serves as the lead consultant for fish screening issues to the U.S. Bureau of Reclamation for the proposed Folsom Dam Temperature Control Device.

DON SPIEGEL, MONTGOMERY-WATSON, has 18 years of experience in planning, design, and construction management of water treatment and water supply projects. He has been project manager, project engineer or assistant project engineer on twelve water treatment plants ranging in size from 8 to 210 mgd and on six water pumping plants ranging in size from 2 to 300 mgd. Mr. Spiegel is the principal author of the City of Sacramento's existing pre-design reports for the SRWTP and FWTP.

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

AMY HARRIS, SWRI, is an aquatic ecologist with a strong background in biological sciences. Her expertise is in design and implementation of monitoring programs for freshwater ecosystems. Ms. Harris has prepared and

provided support for aquatic and terrestrial resource impact analyses for CEQA and NEPA documents. She has conducted aquatic and terrestrial surveys for use in habitat monitoring and planning, including riparian vegetation surveys along the southern Oregon coast and freshwater fisheries habitat in the lower Cosumnes River in California. She has also been involved in habitat restoration planning and implementation projects in the Central Valley.

RICK LIND, SWRI, has over 17 years of experience as a regulatory program manager, environmental planner and public involvement specialist in the energy, water and solid waste industries. He is a notable regulatory program management expert who has performed the spectrum of environmental review services, including analyses of licensing and permitting requirements, preparation of regulatory strategy reports, preparation of joint National Environmental Policy Act/State Environmental Regulatory documents, and compliance monitoring.

VI. Compliance with Standard Terms and Conditions
(see attached forms)

Cost

City of Sacramento Screen Improvement (Phase 1)									
Project Phase and Task	Direct Labor Hours	Direct Salary and Benefits	Overhead Labor	Service Contracts		Materials	Misc. and Direct Costs	Total Cost	Subtotal/ Task
				Labor	Materials				
Task 1			\$3,750	\$21,250					\$25,000
Task 2			\$11,250	\$63,750					\$75,000
Task 3			\$18,750	\$106,250					\$125,000
Subtotal			\$33,750	\$191,250					\$225,000
Total			\$33,750	\$191,250				Total Cost of Project	\$225,000

112500
 36250

 168750

PROJECT COST SHARING				
Project Phase and Task	Total Cost by Task	COST SHARING		
		CALFED Cost Share	USBR Cost Share	City of Sacramento Cost Share
Task 1	\$25,000	\$6,250	\$12,500	\$6,250
Task 2	\$75,000	\$18,750	\$37,500	\$18,750
Task 3	\$125,000	\$31,250	\$62,500	\$31,250
Total	\$225,000	\$56,250	\$112,500	\$56,250

DISCRIMINATION COMPLIANCE STATEMENT

COMPANY NAME

City of Sacramento, Department of Utilities

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

CERTIFICATION

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

OFFICIAL'S NAME

GARY E. Gosse, Supervising Engineer

DATE EXECUTED

July 24, 1997

EXECUTED IN THE COUNTY OF

Sacramento

PROSPECTIVE CONTRACTOR'S SIGNATURE

Gary E. Gosse

PROSPECTIVE CONTRACTOR'S TITLE

Supervising Engineer

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

City of Sacramento, Department of Utilities

Agreement No. _____

Exhibit _____

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

STATE OF CALIFORNIA)
COUNTY OF Sacramento)ss

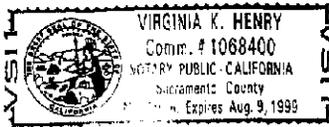
GARY E. Gosse, being first duly sworn, deposes and
(name)

says that he or she is Supervising Engineer of
(position title)

City of Sacramento, Department of Utilities
(the bidder)

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

DATED: July 24, 1997 By Gary E Gosse
(person signing for bidder)



(Notarial Seal)

Subscribed and sworn to before me on

July 24, 1997
Virginia K Henry
(Notary Public)