American Basin Fish Screen and Habitat Improvement Project

Project Information

1. **Proposal Title:**

   American Basin Fish Screen and Habitat Improvement Project

2. **Proposal applicants:**

   Peter J. Hughes, Natomas Mutual Water Company

3. **Corresponding Contact Person:**

   Peter J. Hughes
   Natomas Mutual Water Company
   2601 West Elkhorn Blvd. Rio Linda, CA 95673
   916 419-5936
   NatomasH2O@aol.com

4. **Project Keywords:**

   At-risk species, fish
   Fish Passage/Fish Screens
   Fish, Anadromous

5. **Type of project:**

   Fish Screen

6. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   Yes

   If yes, is there an existing <u>specific</u> restoration plan for this site?

   No

7. **Topic Area**:

   Fish Screens

8. **Type of applicant:**

   Private non-profit

9. **Location - GIS coordinates:**

Latitude: 38.714

Longitude: -121.608

Datum:

Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.

The Natomas Mutual Water Company Service Area is bounded on the west by the Sacramento River, on the north by the Natomas Cross Canal, on the east by the Natomas East Main Drainage Canal, and on the south by the American River.

10. **Location - Ecozone:**

    3.5 Verona to Sacramento, 9.1 American Basin

11. **Location - County:**

    Sacramento, Sutter

12. **Location - City:**

    Does your project fall within a city jurisdiction?

    No

13. **Location - Tribal Lands:**

    Does your project fall on or adjacent to tribal lands?

    No

14. **Location - Congressional District:**

    3

15. **Location:**

    California State Senate District Number: 4,6

    California Assembly District Number: 2,5,9

16. **How many years of funding are you requesting?**

    3

17. **Requested Funds:**
    a) Are your overhead rates different depending on whether funds are state or federal?

       No

If no, list single overhead rate and total requested funds:

Single Overhead Rate: 0

Total Requested Funds: $10,175,000

b) Do you have cost share partners already identified?

No

c) Do you have potential cost share partners?

Yes

If yes, list partners and amount contributed by each:

CVPIA $10,175,000

d) Are you specifically seeking non-federal cost share funds through this solicitation?

Yes

If yes, list total non-federal funds requested:

$10,175,000

If the total non-federal cost share funds requested above does not match the total state funds requested in 17a, please explain the difference:

18. **Is this proposal for next-phase funding of an ongoing project funded by CALFED?**

Yes

If yes, identify project number(s), title(s) and CALFED program (e.g., ERP, Watershed, WUE, Drinking Water):

98-B29 American Basin Fish Screen and Habitat Improvement Project ERP

01-N60 American Basin Fish Screen and Habitat Improvement Project ERP

Have you previously received funding from CALFED for other projects not listed above?

No

19. **Is this proposal for next-phase funding of an ongoing project funded by CVPIA?**

    Yes

    If yes, identify project number(s), title(s) and CVPIA program (e.g. AFRP, AFSP, b(1) other).

99-FC-20-0165	**American Basin Fish Screen and Habitat Improvement Project**	**AFRP**
01-FG-20-0046	**American Basin Fish Screen and Habitat Improvement Project**	**AFRP**

Have you previously received funding from CVPIA for other projects not listed above?

No

20. **Is this proposal for next-phase funding of an ongoing project funded by an entity other than CALFED or CVPIA?**

    No

    Please list suggested reviewers for your proposal. (optional)

21. **Comments:**

    This proposal is for Phase IV - Construction of the American Basin Fish Screen and Habitat Improvement Project.

Environmental Compliance Checklist

American Basin Fish Screen and Habitat Improvement Project

1. **CEQA or NEPA Compliance**
   a) Will this project require compliance with CEQA?

      Yes
   b) Will this project require compliance with NEPA?

      Yes
   c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

2. **If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies).** *If not applicable, put "None".*

   CEQA Lead Agency: Reclamation Disctrict 1000
   NEPA Lead Agency (or co-lead:) US Bureau of Reclamation
   NEPA Co-Lead Agency (if applicable):

3. **Please check which type of CEQA/NEPA documentation is anticipated.**

   CEQA
   -Categorical Exemption
   XNegative Declaration or Mitigated Negative Declaration
   -EIR
   -none

   NEPA
   -Categorical Exclusion
   XEnvironmental Assessment/FONSI
   -EIS
   -none

   If you anticipate relying on either the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that you believe covers this project.

4. **CEQA/NEPA Process**
   a) Is the CEQA/NEPA process complete?

      No

      If the CEQA/NEPA process is not complete, please describe the dates for completing draft and/or final CEQA/NEPA documents.

      Administrative Draft: 12/31/01 Final Document: 5/31/02

   b) If the CEQA/NEPA document has been completed, please list document name(s):

5. **Environmental Permitting and Approvals** (*If a permit is not required, leave both Required? and Obtained? check boxes blank.*)

LOCAL PERMITS AND APPROVALS

Conditional use permit	
Variance	
Subdivision Map Act	
Grading Permit	
General Plan Amendment	
Specific Plan Approval	
Rezone	
Williamson Act Contract Cancellation	
Other	Required

STATE PERMITS AND APPROVALS

Scientific Collecting Permit	Required, Obtained
CESA Compliance: 2081	Required
CESA Compliance: NCCP	Required
1601/03	Required
CWA 401 certification	Required
Coastal Development Permit	
Reclamation Board Approval	Required
Notification of DPC or BCDC	
Other	Required

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation	Required
ESA Compliance Section 10 Permit	Required
Rivers and Harbors Act	Required
CWA 404	Required
Other	

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land. Agency Name:	
Permission to access state land. Agency Name: Reclamation District No. 1000	Required, Obtained
Permission to access federal land. Agency Name:	
Permission to access private land. Landowner Name: See Comment Below	Required, Obtained

6. **Comments.**

The majority of the private landowners are shareholders of the Natomas Mutual Water Company (NMWC). NMWC has agreements with these landowners for access to maintain the existing canals and drainage ditches. The private landowners that are not shareholders of NMWC are cooperating with NMWC and the Project.

Land Use Checklist

American Basin Fish Screen and Habitat Improvement Project

1. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   Yes

   If you answered yes to #1, please answer the following questions:

   a) **How many acres will be acquired?**

      Fee: 80
      Easement: 0
      Total: 80

   b) Will existing water rights be acquired?

      No

   c) Are any changes to water rights or delivery of water proposed?

      Yes If yes, please describe proposed changes.

      The consolidation of Natomas Mutual Water Company's five (5) existing diversions will require a Change in the Point of Diversion(s).

2. **Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?**

   Yes

3. **Do the actions in the proposal involve physical changes in the land use?**

   No

   If you answered no to #3, explain what type of actions are involved in the proposal (i.e., research only, planning only).

   Existing land use will continue to be agricultural.

4. **Comments.**

Conflict of Interest Checklist

American Basin Fish Screen and Habitat Improvement Project

Please list below the full names and organizations of all individuals in the following categories:

- Applicants listed in the proposal who wrote the proposal, will be performing the tasks listed in the proposal or who will benefit financially if the proposal is funded.
- Subcontractors listed in the proposal who will perform some tasks listed in the proposal and will benefit financially if the proposal is funded.
- Individuals not listed in the proposal who helped with proposal development, for example by reviewing drafts, or by providing critical suggestions or ideas contained within the proposal.

The information provided on this form will be used to select appropriate and unbiased reviewers for your proposal.

Applicant(s):

Peter J. Hughes, Natomas Mutual Water Company

Subcontractor(s):

Are specific subcontractors identified in this proposal? Yes

If yes, please list the name(s) and organization(s):

Ferrel Ensign	Ensign & Buckley
Stephen Sullivan	Ensign & Buckley
Miriam Green	Miriam Green Associates
Paul Bratovich	Surface Water Resources, Inc.
None	None
None	None
None	None
None	None

Helped with proposal development:

Are there persons who helped with proposal development?

Yes

If yes, please list the name(s) and organization(s):

Scott L. Brown	**Ensign & Buckley**

Comments:

Budget Summary

American Basin Fish Screen and Habitat Improvement Project

Please provide a detailed budget for each year of requested funds, indicating on the form whether the indirect costs are based on the Federal overhead rate, State overhead rate, or are independent of fund source.

Independent of Fund Source

Year 1												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
4.1	Construction	0	0	0	0	0	280000	0	0	280000.0	0	280000.00
4.2	Construction Supervision	0	0	0	0	0	15000	0	0	15000.0	0	15000.00
4.3	Environmental Mitigation	0	0	0	0	0	75000	0	0	75000.0	0	75000.00
4.4	Right-of-Way Acquisition	0	0	0	0	0	690000	0	0	690000.0	0	690000.00
4.5	Testing and Evaluation	0	0	0	0	0	0	0	0	0.0	0	0.00
4.6	Project Management	0	0	0	0	0	15000	0	0	15000.0	0	15000.00
		0	0.00	0.00	0.00	0.00	1075000.00	0.00	0.00	1075000.00	0.00	1075000.00

Year 2												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
4.1	Construction	0	0	0	0	0	6150000	0	0	6150000.0	0	6150000.00
4.2	Construction Supervision	0	0	0	0	0	240000	0	0	240000.0	0	240000.00
4.3	Environmental Mitigation	0	0	0	0	0	10000	0	0	10000.0	0	10000.00
4.4	Right-of-Way Acquisition	0	0	0	0	0	0	0	0	0.0	0	0.00
4.5	Testing and Evaluation	0	0	0	0	0	0	0	0	0.0	0	0.00
4.6	Project Management	0	0	0	0	0	30000	0	0	30000.0	0	30000.00
		0	0.00	0.00	0.00	0.00	6430000.00	0.00	0.00	6430000.00	0.00	6430000.00

Year 3												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
4.1	Construction	0	0	0	0	0	2450000	0	0	2450000.0	0	2450000.00
4.2	Construction Supervision	0	0	0	0	0	125000	0	0	125000.0	0	125000.00
4.3	Environmental Mitigation	0	0	0	0	0	15000	0	0	15000.0	0	15000.00
4.4	Right-of-Way Acquisition	0	0	0	0	0	0	0	0	0.0	0	0.00
4.5	Testing and Evaluation	0	0	0	0	0	50000	0	0	50000.0	0	50000.00
4.6	Project Management	0	0	0	0	0	30000			30000.0		30000.00
		0	0.00	0.00	0.00	0.00	2670000.00	0.00	0.00	2670000.00	0.00	2670000.00

Grand Total=10175000.00

Comments.

For clarification, the budget above is presented in Federal Fiscal Years (October 1st to September 31st).

Budget Justification

American Basin Fish Screen and Habitat Improvement Project

Direct Labor Hours. Provide estimated hours proposed for each individual.

All work for which funds are requested is to be provided by the consultanting team listed in the proposal or by the contractor selected through a competitive bidding process.

Salary. Provide estimated rate of compensation proposed for each individual.

All salary amounts are included in the budget amounts for Services or Consultants.

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

All benefits are included in the budget amounts for Services or Consultants.

Travel. Provide purpose and estimate costs for all non-local travel.

All travel expenses are included in the budget amounts for Services or Consultants.

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

All supplies and expendables are included in the budget amounts for Services or Consultants.

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

All construction work is to be completed by the contractor selected through a public bidding process. The construction supervision, project management and environmental mitigation will be provided by the consulting team listed in the proposal.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

All equipment will be furnished by the contractor selected through a public bidding process.

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentatons, reponse to project specific questions and necessary costs directly associated with specific project oversight.

Project management will be performed by the consulting team listed in the proposal.

Other Direct Costs. Provide any other direct costs not already covered.

All Direct Costs are included in the budget amounts for Services or Consultants.

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs.

All Indirect Costs are included in the budget amounts for Services or Consultants.

Executive Summary

American Basin Fish Screen and Habitat Improvement Project

Project Title: American Basin Fish Screen and Habitat Improvement Project Applicant: Natomas Mutual Water Company (NMWC) Project Description and Primary Biological/Ecological Objectives: This proposal requests cost share funding for the construction phase of the American Basin Fish Screen and Habitat Improvement Project. The project involves the removal of a diversion dam, the consolidation of diversions, and the addition of state-of-the-art fish screens to NMWC's diversions on the Sacramento River, between Verona and the American River, and on the Cross Canal. The specific objectives of the project are to remove migration barriers; prevent straying and entrainment of winter-run Chinook salmon, spring-run Chinook salmon, fall-run Chinook salmon, late fall-run Chinook salmon, steelhead trout, splittail, green sturgeon, and other high risk species; and to improve aquatic, riverine, and riparian habitat. Approach/Tasks/Schedule: NMWC's intended approach is to complete the design and environmental documentation in consultation with the responsible resource and regulatory agencies, obtain the necessary permits, procure the required right-of-way, obtain bids for construction, perform the relocation work, construct the fish screen facility, and monitor its effectiveness. The design, environmental documentation, and project management will be performed by NMWC with the assistance of consultants. The project phase for which funding is requested is Phase IV- Construction. The primary tasks being performed under Phase IV are the procurement of right-of-way for construction; the construction of the facilities; and the startup, testing and post-construction assessment of the fish screen facilities. Phase IV is currently scheduled for completion by the end of 2004. Justification for Project and Funding by CALFED: The elimination of migration barriers and entrainment losses at unscreened diversions, which result in direct mortality to at-risk fishery resources, as well as the lack of critical rearing habitat, have been identified as principal stressors by CALFED and CVPIA, and will be addressed by this project. Biological monitoring has documented that winter-run, spring-run, fall-run, and late fall-run sized juvenile Chinook salmon, steelhead, splittail, and other at-risk resident and migratory fish species are currently entrained at similar unscreened diversions. The restoration project is, therefore, consistent with CALFED ERP strategic goals for the 2002 Implementation Plan and CVPIA priorities. Budget Costs: NMWC is seeking a $9,990,000 cost share for the construction phase of the project. The project represents a cooperative effort with significant financial matching support through the CVPIA Anadromous Fish Restoration Program. The balance of funding for this phase of the project will be paid for by the federal government and/or local cost share.

Proposal

Natomas Mutual Water Company

American Basin Fish Screen and Habitat Improvement Project

Peter J. Hughes, Natomas Mutual Water Company

Proposal for the
American Basin Fish Screen
and Habitat Improvement Project

A. Project Description

1. Statement of the Problem.

This Proposal requests cost share funding from CALFED for facility construction; facility startup, testing and evaluation; and environmental mitigation for Natomas Mutual Water Company's (NMWC) American Basin Fish Screen and Habitat Improvement Project. The specific goal of the project is to remove a fish negative barrier, improve habitat, and prevent entrainment of winter-run chinook salmon, spring-run chinook salmon, fall-run chinook salmon, late fall-run chinook salmon, splittail, steelhead trout, green sturgeon, and other high risk species.

NMWC is a non-profit mutual water company that controls surface water rights for over 250 landowners within the 55,000 acres known as the American Basin. As part of its irrigation system, NMWC operates five (5) unscreened diversions, with a total capacity of about 630 cfs. In addition, during some dry years, NMWC installs a dam at the mouth of the Natomas Cross Canal and installs diesel lift pumps to draw water from the Sacramento River into the Natomas Cross Canal. The Natomas Cross Canal is a tributary to the Sacramento River, which channelizes flow from a number of creeks to the east.

NMWC began the planning effort for this project in 1993. Initial studies by NMWC looked at operational changes, the use of alternative type barriers, and the relocation or consolidation of diversions. As a result of this initial planning, NMWC has proposed a project to remove the diversion dam and pumps from the Natomas Cross Canal, consolidate their five diversions to one or two facilities located on the Sacramento River, and provide positive barrier fish screens on the consolidated Sacramento River diversion(s).

NMWC has been coordinating the proposed project with local interest groups, resource and regulatory agencies, and funding agencies for over five (5) years. The project has been complicated by proposals from resource and local agencies which could effect the scope of the project. Under the Sacramento Valley Water Management Agreement, a number of agencies are proposing a conjunctive use projects for the American Basin, which may require operational changes in NMWC's service area. The ACOE is in the planning stage for their Sacramento River East Side Levee Raising Project which directly affects NMWC Project. The Placer County Water Agency, City of Sacramento, and the American River Basin Cooperating Agencies are studying the relocation of some American River diversions to the Sacramento River, by use of a combined diversion with NMWC. NMWC will coordinate the project with these entities, but intends to move forward with the design and construction of facilities to meet their present needs.

The proposed project is located in the Sacramento River Watershed in Sacramento and Sutter Counties in an area referred to as the American Basin. The consolidation of diversions along the left bank of the Sacramento River, from about River Mile 65 to River Mile 79 is proposed. Also proposed, is the removal of NMWC's two (2) permanent diversions, and temporary cofferdam, from the Natomas Cross Canal. The Natomas Cross Canal is the tributary to the Sacramento River – at approximately River Mile 79 – for the Coon Creek, Bunkham Slough, Markham Ravine, Auburn Ravine, King Slough, Pleasant Grove Creek, and Curry Creek Watersheds.

At the request of the AFSP Technical Team, NMWC has been working with the surrounding small private diverters (greater than 10 cfs) to develop agreements to consolidate their facilities into the new NMWC diversion. The participation of several of these private diverters is included in the scope of the project.

The proposed project will remove a migration barrier, remove diversion facilities from the Natomas Cross Canal, consolidate diversion locations, provide positive barrier fish screens, and assist in restoration of aquatic, riverine, and riparian habitat. Entrainment caused by unscreened diversions, blockage of suitable habitat, lack of quality stream channel and riparian habitats, and excessive predation has been identified as key stressors affecting anadromous fish species in this area. The project attempts to protect anadromous fish species by addressing NMWC's potential impact upon these stressors, and to assure a stable water supply to upland habitat considered critical to other at-risk species such as the Giant Garter Snake and the Swainson's hawk.

2. Justification

This section is not required because this proposal is for fish screen construction.

3. Approach

NMWC's intended approach is to perform the required studies, design, and environmental work using the team shown in the enclosed Organization Chart, Figure 1. The proposed schedule and specific tasks are summarized below in Section A.8. The major activities to complete the work, in chronological order, are to complete a feasibility study which evaluates various alternatives; develop a preliminary design and prepare the required environmental documentation; prepare a Final Design and obtain the required permits; perform the project construction; and test and evaluate the facilities. The design, environmental documentation, permitting, and construction supervision will be performed by NMWC, with the assistance of the existing team of consultants. All work will be performed in consultation with the Anadromous Fish Screen Program Technical Team, headed by the US Fish and Wildlife Service. This proposal requests cost share funding for the work required to complete Phase IV *Construction*. This phase will be divided into six (6) tasks:

> **Task 4.1 - Construction.** This task includes all the construction activities associated with the project. The majority of this work will be perform by contractor(s) selected through a competitive bidding process in compliance with state and federal public contracting requirements. Deliverables will include monthly status reports during the primary construction period, and a final report on construction.

Task 4.2 - Construction Supervision. This task consists of the construction administration and management effort required by the consulting team to insure the construction effort meets the guidelines set forth by the construction documents, the environmental documents, state and federal public contracting codes, and other agency requirements. Deliverables will include approved monthly progress payment requests, and a final testing and inspection report summary.

Task 4.3 - Environmental Mitigation. This task encompasses the monitoring and mitigation work as outlined in the environmental documents and as required by permits, both during and after construction. Deliverables will include report(s) on construction monitoring and reports on mitigation monitoring, as required by permits.

Task 4.4 - Right-of-Way Acquisition. Upon completion of the Final Design, all required right-of-way will be identified. This task involves the process of finalizing the agreements, including the cost of land and associated acquisition costs. Deliverables will include a revised parcel ap to the County of Sacramento.

Task 4.5 - Testing and Evaluation. This task involves all the testing and trial operations to bring the newly constructed facilities on line. This task also includes the post-construction evaluation of the fish screen. Upon start-up and commissioning of the facility, an evaluation and monitoring program will be carried out in consultation with the Department of Fish and Game (DFG) and the National Marine Fisheries Service (NMFS). Deliverables will include a report on post construction evaluation of the fish screen facility operation.

Task 4.6 - Project Management. The task allows for the effort allotted to managing the completion of tasks, consultant and agency coordination, compliance with reporting requirements, processing of funding requirements, compliance with standard terms and conditions, and the associated direct costs. Deliverables will include copies of all agreements for consulting and construction services, reimbursement requests, quarterly funding reports and all other requested status and compliance reporting.

4. Feasibility

The described approach has been proven successful on a number of large screening projects in the Sacramento Valley and the Pacific Northwest. The project represents a cooperative effort of resource and regulatory agencies and local interests. The initial planning performed by NMWC established the option for removal of facilities from the Natomas Cross Canal, reviewed the potential for operational changes and compared the use of behavioral and physical barriers. The recommendation for consolidation of diversions into one or two diversions with positive barrier screens resulted from this initial planning.

The feasibility study, completed in June 2000, has compared a number of project alternatives to developing the most feasible project. Biological resource studies performed during the feasibility phase were used to gage any impacts of the project

alternatives for use in decision making. The selection of the project alternative included consideration of project costs, the ability to fund the project, the potential environmental impacts of each alternative, the ability to address service needs, the ability to operate and maintain project facilities, and the need to maximize restoration efforts. The Feasibility Report is available upon request.

The preliminary design and environmental documentation phase for the project immediately followed the feasibility study. (This phase of the project has been fully funded and will be completed by the end of 2001.) The preliminary design will establish the project facility requirements in consultation with responsible agencies. The preliminary environmental documentation work will assess the impacts of the specific project and determine all permitting needs. At this time, the scope of the project has been adequately defined and has enable planning of funding needs for project construction, which are being requested under this proposal.

The Final Design Phase has been planned based upon past projects of similar scope. The effort required for completion of Environmental Documentation and Permitting for the project is similarly based upon past projects. The schedule for implementation of this phase of the project has been developed in consultation with responsible agencies and other interested parties and is considered feasible.

The environmental checklist outlines permitting required for implementation of the entire project. Delays in processing of permit applications could result in a delay in completing the permitting deliverable and as a result, a delay in the start of project construction. No delays are anticipated at this time.

The proposed project is consistent with current zoning regulations and planning ordinances. Project design will comply with applicable standards. Field activities required for the final design phase of the project will occur on NMWC or Reclamation District No. 1000 (RD1000) property. NMWC has existing access agreements with RD1000 for the joint use facilities which may be effected by this project.

The construction phase will be staged over three years to provide safe access to the river facility sites. The internal irrigation system improvements will be constructed during the non-growing season, approximately November to February, as weather permits. The construction effort required is similar to other successfully constructed fish screen facilities on the Sacramento River.

5. Performance Measures

Extensive fisheries monitoring have been performed in the Sacramento River to document the species composition, seasonal occurrence, and size distribution of juvenile and adult fish which may be entrained by unscreened diversions. Data from these monitoring programs provides a basis for predicting biological benefits associated with a positive barrier fish screen.

For this restoration project, monitoring and assessment plans will be geared toward assuring compliance with DFG and NMFS screening criteria, and the mitigation plans included in the project's environmental documents. The effort will begin during the preliminary design and environmental assessment phase. This work will be performed in

consultation with the AFSP technical team, and responsible resource and regulatory agencies as the project proceeds. The Final Design and environmental documentation will be similarly reviewed and approved prior to proceeding with the project construction.

During the Final Design Phase, a specific monitoring and assessment plan for the completed facility will be developed in consultation with the AFSP technical team and other interested parties. This plan will address the requirements for inspections and approvals during construction and the post construction evaluation and monitoring of the facility performance. Construction monitoring will include, but not be limited to, verification of compliance with screen specifications, inspection of channel conditions, and testing of cleaning systems. Post construction evaluation will include extensive measurement of velocities and adjustments to the facility as required to meet DFG and NMFS screening criteria. Underwater inspections will be included to monitor facility operation and inspect channel conditions.

Additionally, a long term operation and maintenance plan will be developed to assure continued system integrity and operational compliance with screening criteria. The plan will include, but not be limited to, record keeping requirements, periodic underwater inspections to verify screen integrity, and monitoring of cleaning and sediment control systems operation.

Mitigation and restoration requirements will be developed during preparation of the environmental documentation. Requirements for monitoring the success of mitigation and restoration efforts will be developed in consultation with responsible agencies. Restoration efforts will also be coordinated with the Natomas Basin Habitat Conservation Plan.

6. Data Handling and Storage

All data developed during the project will be kept on file in the project manager's office. Copies of data prepared digitally will be routinely backed up and, when complete, archived on CDROM. As information is finalized, reports will be prepared and distributed to all interested parties. Other data will be made available upon written request to NMWC. At the completion of the project all files will be maintained for a minimum of three (3) years.

7. Expected Products/Outcomes

Expected products of Construction will include:

- As-Built Drawings of All Facilities
- Two (2) New Diversions with State-of-the-Art Fish Screens
- Restored Riverine and Riparian Habitat at the River Banks of the Existing Diversions
- Long-Term Operation & Maintenance Plan

NMWC will provide agreements, plans, presentations and reporting as outlined in the PSP, Section 4.2. Additionally, site tours will be provide to all participating agencies and interested parties once the facilities have been commissioned.

8. Work Schedule

A summary project schedule is provided below. Cost share funding is being requested for Phase IV – Construction.

Task	Description	Start Date	Finish Date
1	Feasibility Study	Oct 1999	Oct 2000
2	Preliminary Design & Environmental Documentation	Nov 2000	Dec 2001
3	Final Design & Permits	Oct 2001	Aug 2002
4	Construction & Environmental Mitigation	Aug 2002	July 2004[1]
4.1	Construction	Sept 2002	June 2004
4.2	Construction Supervision	Aug 2002	June 2004
4.3	Environmental Mitigation	Aug 2002	Dec 2007 [1]
4.4	Right-of-Way Acquisition	Aug 2002	April 2003
4.5	Testing and Evaluation	May 2004	July 2004
4.6	Project Management	Aug 2002	June 2004

1 - Funds required for on-going environmental mitigation beyond 2004 will be requested under a separate proposal once the needs are more clearly defined.

The major milestones for Phase IV Construction are:

- Select First Phase Contractor by August 31, 2002
- Select Second Phase Contractor by April 1, 2003
- Complete Right-of-Way Acquisition by April 1, 2003
- Complete Construction by June 1, 2004
- Complete Post-Construction Evaluation by July 31, 2004

Payments for service contracts will be made on a monthly basis. Service contract invoices for construction will detail the percent completion, and level of effort will be gaged against the total completion amounts. The other service contract invoices will detail man-hours spent on each task, and level of effort will be gaged against the project schedule.

B. Applicability to CALFED ERP Goals and Implementation Plan and CVPIA Priorities

1. ERP Goals and CVPIA Priorities.

This restoration project targets ERP Goals SR-1, SR-2, SR-3, and SR-6 as outlined in the PSP and the CVPIA Stressors of Quality of Accessible Stream Channel Habitat, Blockage

of or Reduced Access to Suitable Habitat, Unscreened or Inadequately Screen Diversions and Excessive Predation. The project attempts to specifically address the mortality of adult and juvenile winter-run chinook salmon, spring-run chinook salmon, steelhead trout, green sturgeon, splittail, white sturgeon, stripped bass, fall-run chinook salmon, and American shad. Improvements proposed will eliminate entrainment mortality, remove blockages to suitable habitats, improve quality of accessible stream channel and riparian habitat, reduce predation losses, and improve water quality.

The proposed project will address the immediate needs of at-risk species by consolidating and screening the facilities of one of the largest remaining unscreened diverters on the Sacramento River and possibly several other small diverters in the same stretch of the river. The continuing planning effort has characterized the site conditions, reviewed test results and data on alternative technologies, and is currently geared toward siting. An evaluation and monitoring program to be developed during the Final Design Phase will provide for continuous monitoring and testing of the project.

Removal of diversions from the Natomas Cross Canal and consolidation of diversions will allow for restoration efforts which will improve aquatic, riverine and riparian habitats. Removal of the diversion dam and unscreened pumps from the Natomas Cross Canal will restore a natural flow regime, and enhance access of sensitive fish species to historical spawning habitats and critical rearing habitat. This restoration effort will also assist in preventing straying of migratory fish into the Natomas Cross Canal, and associated predation, by restoring natural outflow from the Natomas Cross Canal. This change will also improve water quality, since all diversions will be from the Sacramento River, where the rate of diversion will be a much smaller percentage of the stream flow. The area on the Sacramento River where the consolidated diversions will be located is heavily channelized due to its proximity to urban areas. Hardpoints have already been established, with levee systems immediately adjacent to the river channel. Consolidation of diversions will assist in restoration of riverine and riparian habitat in the area of abandoned diversions.

The implemented project will provide for a reliable water supply for agriculture and to sustain critical habitat. NMWC provides the vast majority of surface water supply to the Natomas Basin. The rice farming and winter re-flooding of fields practiced in the basin provide critical habitat for waterfowl and at-risk species such as the giant garter snake and Swainson's hawk.

2. Relationship to Other Ecosystem Restoration Projects.

NMWC is one of the largest remaining unscreened diversions on the Sacramento River. A significant effort has been expended to date in screening large diversions from the Sacramento River to prevent entrainment mortality. This project represents a significant step toward screening all large diversions from the Sacramento River.

Removal of the diversion dam from the Natomas Cross Canal is consistent with the restoration efforts to remove migration barriers. Removal of diversion facilities from this tributary is consistent with restoration efforts to prevent straying of migrating fish.

NMWC is the sole source of surface water supply to areas proposed for restoration by the Natomas Basin Conservancy. This conservancy's restoration effort is dependant on a reliable water supply.

The project is also being coordinated with the American River Basin Cooperating Agencies and Sacramento Area *Water Forum*. NMWC represents the most significant source of supply from the Sacramento River being considered by the *Water Forum*. The City of Sacramento and Placer County Water Agency are currently attempting to dovetail a project that will replace some American River supply with Sacramento River supply from NMWC's new consolidated diversion from the Sacramento River.

3. Request for Next-Phase Funding.

This proposal is the next phase of a project previously funded by CALFED and CVPIA. The initial phases funded were applied to the Feasibility and Biological Resource Studies, and the Preliminary Design and Environmental Assessment. The previous phase funded was for the Final Design, Environmental Documentation and Permitting. Funding is now being requested for the Construction Phase – Phase IV. The project was delayed during the Preliminary Design in order to coordinate the details of the US Army Corps of Engineers project to raise the east levee of the Sacramento River from Powerline Rd to Verona. The work effort is being accelerated and it is anticipated that the project will be back on schedule for a competitive bid date in August 2002.

4. Previous Recipients of CALFED or CVPIA Funding.

This proposal is for the next phase funding for the *American Basin Fish Screen and Habitat Improvement Project* funded under agreements CALFED No. 98-B29 and CVPIA No. 99-FC-20-0165. The funding agreement for Phase III – Final Design and Permitting is currently being finalized under CALFED No. 01-N60. CVPIA cost-share for Phase III is also being negotiated. The current status of the project is described above in Section A.8.

5. System Wide Ecosystem Benefits.

System wide ecosystem benefits are described in Section B.2 above.

6. Additional Information for Proposals Containing Land Acquisition

Negotiations are currently underway to obtain the additional easements for the improvements required to NMWC's internal irrigation system.

C. Qualifications

Overview of Team. NMWC's team for this project will be organized as shown on the Organization Chart, Figure 1. NMWC's consultants were selected based upon qualifications and their familiarity with NMWC's operation and facilities. The Project Manager and Engineer for the project, Ensign & Buckley Consulting Engineers (EB), has been providing engineering services to NMWC for over 15 years. EB has provided services in the planning, design, and construction of over ten fish screen projects in the State of California, and has worked on all of NMWC's existing diversions. The

Environmental Consultant for the project, Miriam Green Associates (MGA) has performed extensive work in the American Basin and has a great deal of experience with rare, threatened, and endangered species. MGA has extensive experience in the preparation and management of CEQA/NEPA compliance documents. The Fisheries Biologist for the project is Surface Water Resources, Inc. (SWRI). SWRI's expertise in fisheries and aquatic sciences includes fisheries biology, aquatic toxicology, aquatic ecology, water quality, experimental design and statistical analyses, and ecological risk assessment.

Relevant Experience of Key Personnel. Following is a summary of the relevant experience of the supervisory and key staff:

a. **Ferrel H. Ensign** is a Registered Civil and Agricultural Engineer in the State of California. Mr. Ensign is a founding partner in Ensign & Buckley Consulting Engineers, a Fellow in ASCE, and has 37 years of experience in the planning, design, and construction of water resource projects. He has been responsible for the design of over 10 fish screens that have been constructed and in the preliminary design of other facilities that were subsequently constructed. He is knowledgeable of the current fish screening criteria of the NMFS and DFG. He has designed sediment exclusion facilities for pumped and gravity irrigation diversions, and hydroelectric facilities. He has acted as the Program Manager on numerous major water resource projects for both private and public agencies including the supervision of the design criteria preparation, plans preparation, specifications preparation, construction management, and start-up testing.

b. **Miriam Green** has 15 years of experience in the environmental consulting field. Much of this time has been spent conducting biological studies, with particular emphasis on threatened and endangered species surveys throughout California and the Pacific Northwest. Ms. Green is the owner and Principal Biologist of the environmental consulting firm Miriam Green Associates. Established in November 1989, MGA is certified by the State of California and the City of Sacramento as a Women-Owned Small Business. The firm is composed of an experienced group of independent consultants from Sacramento, Yolo, and San Joaquin counties. All group members have extensive prior experience working for other environmental consulting firms, either as permanent staff members or as subcontractors. Collectively, MGA has been involved in the preparation and management of more than 300 Environmental Impact Reports (EIRs), Environmental Impact Statements (EISs), Initial Studies, Biological Assessments, and other documentation, as required by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) over the past 15 years.

c. **Paul Bratovich** has worked as a fisheries consultant in California for the past 18 years. He serves as the head of SWRI's fisheries team and oversees all fisheries-related aspects of project work, in addition to conducting project-level fisheries impact assessments. Mr. Bratovich has conducted numerous analyses on various aquatic resources, including listed aquatic species as part of incidental take permit processes, habitat conservation plans, watershed management plans, and CEQA and NEPA documentation. As a recognized fisheries expert, with an emphasis on anadromous salmonids, he is actively participating in a broad range of forums in a

variety of consultative, advisory, and technical expert capacities. Mr. Bratovich have served as the Principal Fisheries biologist for numerous fish screening projects including the City of Sacramento Water Treatment Plant Intake Structure Replacement, GCID's Hamilton City Pumping Plant, the Fairbairn Intake Structure Improvement, and the American River Pump Station Project. His experience also includes regulatory and technical consultations with the California Department of Fish and Game, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and other agencies concerning flow-habitat relationships, habitat restoration, population dynamics, endangered species, and strategic water resource planning.

d. **Peter Hughes** is the General Manager for NMWC, with 9 years of experience in the agricultural water industry. He has worked for NMWC for over 9 years, and has extensive knowledge of water rights and related water issues. Mr. Hughes helped found NCWA; was a former executive committee member of the Sacramento River Contractors Association, and has been on various committees for the Sacramento Region Water Forums. He has extensive prior experience in management of commercial firms, including placement of public and private financing. He is familiar with senior level financial reporting.

e. **Thomas Barandas** is the Special Projects Manager for NMWC, and is a life-long resident of the American Basin. He has worked in the agricultural industry all of his life. His responsibilities include overseeing the irrigation, recycle and drainage system, and pumping plant operations; including supervision of field staff, and developing, implementing, and reporting for maintenance budgets.

f. **Stephen R. Sullivan** is a Registered Civil Engineer in the State of California, with a background in design and construction of fish screening facilities, pumping plants, levee construction, and irrigation facilities. He is experienced in the application of the NMFS and the DFG fish screen criteria, and is familiar with the latest technologies in the field and the latest designs used on the Sacramento River. He also has experience in coordination with the agencies on the Anadromous Fish Screen Program Technical Team and is familiar with the U.S. Army Corps of Engineers's, the Reclamation Board's, the U.S. Fish and Wildlife Service and the DFG's requirements for in river construction activities. Recent projects include: designed Reclamation District No. 1004's Princeton Pumping Plant Fish Screen Facility; designed El Dorado Hydroelectric Project Screened Diversion on the American River; design screens and ladders for White Mallard Dam and Associated Diversion on Butte Creek; perform feasibility and preliminary design work for screening the Natomas Mutual Water Company's five (5) Sacramento River Diversions; evaluated improvements to the Northern California Power Authority's Beaver Creek Diversion; and prepared design details for the preliminary design of new fish screening facility for PG&E's intake on the Eel River. He has also designed and supervised the construction of a number of facilities on the Sacramento River and its tributaries.

D. Cost

1. Budget.

NMWC is requesting cost share funding for Construction, Phase IV of the project. Funding will be used to:

- Construct the new consolidated diversions
- Construct associated modifications to NMWC's internal irrigation system
- Environmental mitigation
- Startup, testing, and post construction evaluation of the new fish screen facilities

The proposed budget for Phase IV is $20,350,000. NMWC is requesting a fifty percent (50%) cost share, or a total of $10,175,000, from CALFED as identified in Form VI. Based upon the size of the overall project, the proposed budget is commensurate with the effort required to complete the work required.

All of the work will be performed under service contracts with the exception of administration work which will be performed by NMWC. Consultant's overhead costs are encompassed in charge rates. Direct construction costs will be determined by a competitive bidding process. NMWC is not intending to apply additional overhead charges for work performed.

The Project Management task budgets for the effort allotted to managing the completion of tasks, consultant and agency coordination, compliance with reporting requirements, processing of funding requirements, compliance with standard terms and conditions, and the associated direct costs.

2. Cost-Sharing.

NMWC began studies of the project in 1993, and funded all work on the project through 1999. A total of $450,000 in funding was provided by CALFED and CVPIA for Phase I and II of the project. This Phase I and II funding was allotted for work in 1999 and 2000. Due to the project delays discussed above in Section B.3, the work will be completed in 2001. NMWC is currently finalizing an agreement for Phase III, Final Design to be completed in 2002 for $950,000 from CALFED for a fifty percent (50%) cost share. NMWC is also finalizing an agreement for the remaining Phase III cost share from CVPIA funds. NMWC is now requesting $10,175,000 for a fifty percent (50%) cost share of Phase IV work in 2002, 2003, and 2004.

Without full funding support for the project and subject to the approval of the Board of Directors, NMWC may be able to perform some limited work to construct the required improvements to their internal irrigation system, but at a much reduced level of effort. Construction of the consolidated diversions would be delayed indefinitely until funding was obtained.

E. Local Involvement

This project is the single-purpose, or first phase, of a larger, multipurpose project benefitting several communities. Therefore, public outreach efforts, already well underway, must address the interests of company shareholders, as well as a number of specific communities, namely, the City of Sacramento, the County of Sacramento, Landowners within the Natomas Basin, the County of Sutter, RD1000, and the County of Placer, the member agencies of the Sacramento North Area Groundwater Management Authority (SNAGMA), member agencies of The American River Basin Cooperating Agencies (ARBCA), member agencies of The Sacramento Metropolitan Water Authority (SMWA), the signatures of The Sacramento City/County Office of Metropolitan Water Planning's *"Water Forums,"* and the member firms and interests of the Environmental Council of Sacramento (ECOS).

This project has been discussed regionally since 1994, and reviewed publicly and recommended for completion in the "Water Forums Agreement," (April, 2000) which was signed by over fifty (50) local and regional groups, including Federal and State agencies. Virtually ninety-nine percent (99%) of the agencies, organizations, and interest groups listed above are signatures of that agreement.

NMWC has met and briefed all of those entities above, and is expecting consensus support for the project. In order to formalize and assure local involvement and support, NMWC will continue its role in the "Water Forums" Successor Effort, SNAGMA as a governing board member, and maintain regular monthly meetings to which all interest groups are invited. A significant environmental interest group not specifically listed above is the City of Sacramento's Habitat Plan Operator, The Natomas Basin Conservancy (NBC), charged with the protection of endangered, threatened and of-concern species within NMWC service area.

NMWC been elected by board vote to a position on the NBC Board of Directors to assure continuity and integration of species protection management practices with the operations and maintenance practices of both RD1000's flood control and NMWC's water supply requirements. NMWC has submitted a Habitat Plan to USFWS for approval and expects to report annually to the NBC on its activities.

F. Compliance with Standard Terms and Conditions

NMWC has reviewed the Standard Terms and Conditions contained in Attachments D and E to the PSP, and will comply with the state and federal standard terms. Through pervious funding agreements, NMWC is familiar with both the application of state and federal standard clauses and has the ability to implement them. The proposal submittal requirements, as requested in the PSP, are attached to this proposal.

I. Literature Cited

CALFED Bay-Delta Program. 2001. Ecosystem Restoration Program, Draft Stage 1 Implementation Plan.

CALFED Bay-Delta Program. 2001. Ecosystem Restoration Program, 2002 Proposal Solicitation Package.

U.S. Fish and Wildlife Service June 1999. Six-Year Plan and Budget for Implementing the Central Valley Project Improvement Act, Fiscal Years 1999 - 2004.

U.S. Fish and Wildlife Service. May 1997. Revised Draft Restoration Plan for the AFRP.

Organizational Chart

American Basin Fish Screen and Habitat Improvement Project

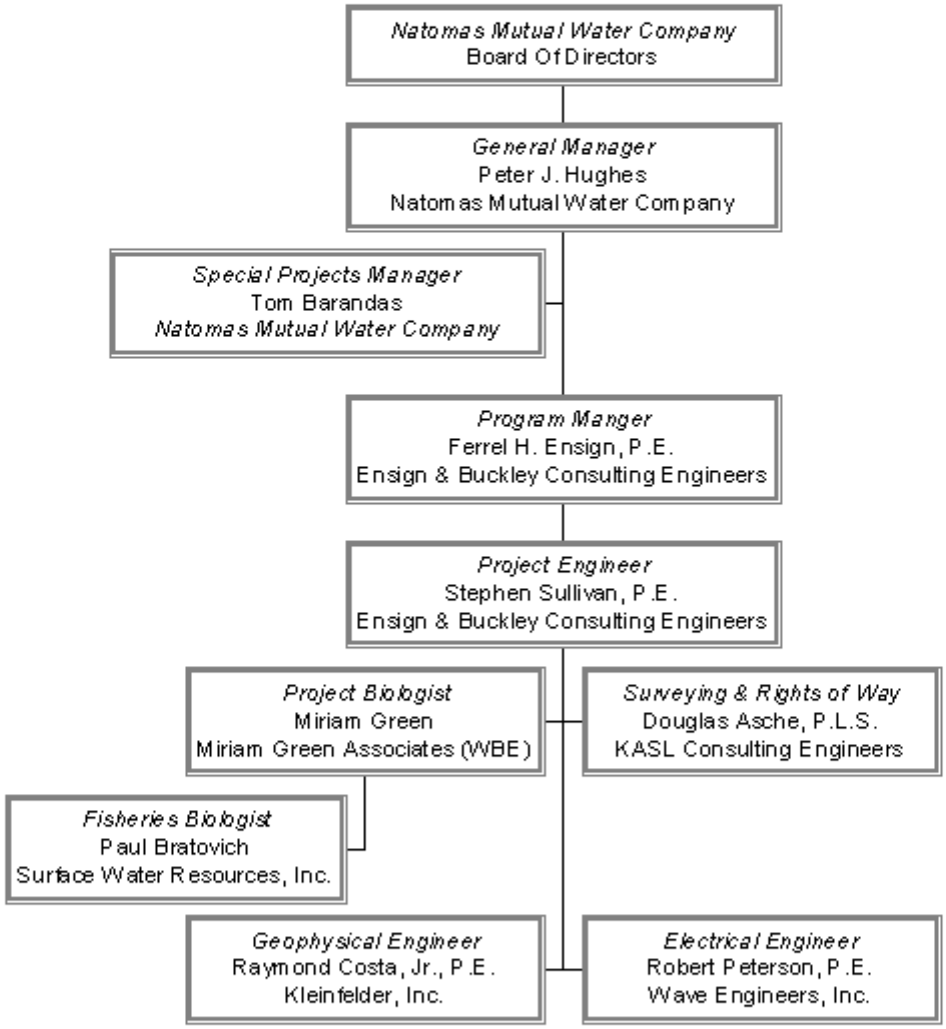

Figure 1