Meridian Farms Water Company - Positive Barrier Fish Screen Project

Project Information

1. **Proposal Title:**

   Meridian Farms Water Company - Positive Barrier Fish Screen Project

2. **Proposal applicants:**

   Harold Webster, Meridian Farms Water Company

3. **Corresponding Contact Person:**

   Harold Webster
   Meridian Farms Water Company
   PO Box 187 Meridian, CA 95957
   530 696-2456
   haroldwebster@hotmail.com

4. **Project Keywords:**

   At-risk species, fish
   Environmental Impact Analysis
   Fish Passage/Fish Screens

5. **Type of project:**

   Fish Screen

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

   No

7. **Topic Area**:

   Fish Screens

8. **Type of applicant:**

   Private non-profit

9. **Location - GIS coordinates:**

   Latitude: 39.111

   Longitude: -121.904

   Datum:

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

The general project area is bounded by Highway 20 on the north, the Sacramento River on the west, Tisdale Bypass on the south, and the Sutter Bypass on the east. Meridian Farms Water Company encompasses 9,150 acres and is a Sacramento River diverter. Meridian Farms and has three points of diversion on the River: Meridian Diversion - River Mile 134.2, Drexler Diversion - River Mile 128.8, and Grimes Diversion - River Mile 125.8

10. **Location - Ecozone:**

    3.4 Colusa to Verona

11. **Location - County:**

    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

    California Assembly District Number: 2

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

    1

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: n/a

    Total Requested Funds: $750,000

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:

Meridian Farms Water Company $40,000

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

Yes

If yes, list total non-federal funds requested:

$400,000

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

Federal funding was used for the Feasibility Study to determine the course of action of this Phase of the Project. State funding is requested to match the previous federal funding received through CVPIA -$50,000. The rest of the $700,000 can be split between federal and non-federal funds totaling $400,000 from non-federal and $350,000 from federal.

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

No

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-FG-20-0251 Meridian Farms Water Company Anadromous Fish Screen Project

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:**

Environmental Compliance Checklist

Meridian Farms Water Company - Positive Barrier Fish Screen 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: California Department of Fish and Game
   NEPA Lead Agency (or co-lead:) U.S. 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.

      The draft CEQA/NEPA documents will be completed by July 2003. The final CEQA/NEPA documents will be completed one month after receiving comments, or August 2003.

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

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation	Required
ESA Compliance Section 10 Permit	
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: Sutter	Required
Permission to access state land. Agency Name:	
Permission to access federal land. Agency Name:	
Permission to access private land. Landowner Name: Andriotti Farms	Required

6. **Comments.**

Question 5: Additional permits may be required to complete this project that were not anticipated when this proposal was submitted. All necessary permits will be secured. Question 5: Permission to access property - This proposal is for the engineering design of the preferred alternative described in the feasibilty study. The feasibility study is to be completed by December 2001. The recommended fish screen alternative may require an easement from either the County of Sutter or from Andriotti Farms for a pipeline. Once the Feasibility study is complete, it will be clear if permission from the County of Sutter or Andriotti Farms is required.

Land Use Checklist

Meridian Farms Water Company - Positive Barrier Fish Screen Project

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

   No

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).

   The land use prior to this project is for the diversion of water and its conveyance to Meridian Farms Water Company. The implementation of this project will not alter the land use for the pumping facilities or the irrigation canals.

4. **Comments.**

   Question 2: The applicant may require permission to access lands owned by the County of Sutter or Andriotti Farms depending on the recommendation of the feasibility study. The feasibility study will be completed December 2001 and will describe in detail if the preferred alternative will require an easement and permission to access lands not owned by Meridian Farms Water Company.

Conflict of Interest Checklist

Meridian Farms Water Company - Positive Barrier Fish Screen 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):

Harold Webster, Meridian Farms Water Company

Subcontractor(s):

Are specific subcontractors identified in this proposal? Yes

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

various	MWH
Steve Clifton	Private Consultant

Helped with proposal development:

Are there persons who helped with proposal development?

Yes

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

Neil Schild	**MWH**
Michelle Treinen	**MWH**

Comments:

Budget Summary

Meridian Farms Water Company - Positive Barrier Fish Screen 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**
1	Project Management	0	0	0	0	0	77000	0	0	77000.0	0	77000.00
2	Public Outreach and Local Involvement	0	0	0	0	0	27000	0	0	27000.0	0	27000.00
3	Environmental Documentation	0	0	0	0	0	147000	0	0	147000.0	0	147000.00
4	Preliminary Design (30% Design)	0	0	0	0	0	179000	0	0	179000.0	0	179000.00
5	90 Percent Complete Final Design	0	0	0	0	0	236000	0	0	236000.0	0	236000.00
6	100 Percent Complete Final Design	0	0	0	0	0	30000	0	0	30000.0	0	30000.00
7	Permits and Authorization	0	0	0	0	0	54000	0	0	54000.0	0	54000.00
		0	0.00	0.00	0.00	0.00	750000.00	0.00	0.00	750000.00	0.00	750000.00

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**
		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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**
		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grand Total=750000.00

Comments.

Budget Justification

Meridian Farms Water Company - Positive Barrier Fish Screen Project

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

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

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

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

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

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

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

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

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

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

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.

The subconsultant will perform the tasks listed in the Budget - Form VI. The estimated time required is approximately 4,300 hours which will be split among the team members accordingly. In many cases multiple people will be working on the same task at the same time. This will increase efficiency and lower costs. The hourly rate ranges from $70 per hour for an Associate Engineer to $150 per hour for a Principal Engineer.

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.

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

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.

Tasks / Costs: Completion of Contracting forms = $2,000, Performance Measures/Project Monitoring = $8,000, Project Presentations = $5,000, Budget Management/Quarterly Reports = $11,000, Prepare Work Plan = $16,000, Participate in Project Meetings = $22,000, Institute and Maintain QA/QC Program = $13,000.

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

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

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.

N/A - applicant is not performing the work described in this proposal. All work will be contracted out.

Executive Summary

Meridian Farms Water Company - Positive Barrier Fish Screen Project

Location: Meridian Farms Water Company (MFWC) is located in Sutter County; east of the Sacramento River, south of Highway 20, and west of Highway 99. Project: Adverse effects of stressors, such as poorly screened or unscreened diversions on the Sacramento River, minimize the chance of survival for all four races of chinook salmon, steelhead trout, splittail, and other Sacramento River aquatic species. (ERPP, 2000) MFWC currently owns and operates three unscreened diversion pumping stations along the Sacramento River: the Meridian, Drexler and Grimes. MFWCs pumps are considered detrimental to fish passage under the directives of the CVPIA and CALFED. MFWC is preparing a feasibility study to evaluate the consolidation of the three MFWC river pumping facilities and the installation of positive barrier fish screens at each pump intake. The feasibility study was funded through the Central Valley Project Improvement Act (CVPIA). MFWC is applying for $750,000 in CALFED funds to complete the engineering final design, conduct the final environmental analyses, and secure the necessary permits for the fish screen project. Project Objective and Approach: The objective of implementing this fish screen project on the Sacramento River is to protect juvenile and migrating fish, such as chinook salmon, steelhead trout, and Sacramento splittail. The proposed phase of the project includes the engineering final design, final environmental assessments, and necessary permits. The engineering final design will use the established design criteria from the feasibility study to complete the contract documents including engineering drawings, technical specification, and bidding documents. The project will also require coordination with state, local, and federal agencies to prepare environmental documentation that meet the requirements of the CEQA, and NEPA. Expected Outcome and Relationship to CALFED ERP and/or CVPIA goals: By elimating the Drexler and Grimes diversion, the proposed fish screen project addresses ERP Strategic Goal 1: At-Risk Species and Goal 4: Habitats-Fish Passage; and Sacramento Restoration Priorities SR-2 and SR-6. The consolidation of the structures reduces the number of fish passage facilities and promotes the recovery of at-risk species. The fish screen facilities will reduce injury to migrating adult fish by improving passage conditions and reducing entrainment for fish along the Colusa/Verona reach of the Sacramento River. This project will also address the Anadromous Fish Screen Program authorized by Section 3406(b)(21) of the Central Valley Project Improvement Act. This project meets CVPIA goals by improving habitat for all stages of anadromous fish, improving survival rates of juveniles at diversions, and improving the opportunity for adult fish to reach their spawning habitat.

Proposal

Meridian Farms Water Company

Meridian Farms Water Company - Positive Barrier Fish Screen Project

Harold Webster, Meridian Farms Water Company

Meridian Farms Water Company
POSITIVE BARRIER FISH SCREEN PROJECT

CALFED PROPOSAL

Submitted by

Meridian Farms Water Company
P.O. Box 187
Meridian, CA 95957

October 2001

A. PROJECT DESCRIPTION: PROJECT GOALS AND SCOPE OF WORK

1. Problem

Project Location: Meridian Farms Water Company (MFWC) is located in Sutter County bounded on the west by the Sacramento River, on the north by Highway 20, and on the east by Highway 99. The project is in ecozone 3 – Sacramento Region, 3.4 – Colusa to Verona. A location map of the MFWC service area is shown in **Figure 1**.

Problem: Adverse effects of stressors, such as poorly screened or unscreened diversions on the Sacramento River, minimize the chance of survival for all four races of chinook salmon, steelhead trout, splittail, and other Sacramento River aquatic species. (ERPP, 2000) Meridian Farms Water Company currently owns and operates three unscreened surface water diversion pumping stations along the Sacramento River: the Meridian, Drexler and Grimes. Based on previous studies and surveys on unscreened/screened diversions, it is believed juvenile anadromous fish are lost through entrainment at the MFWC diversions.

MFWC's service area falls along the Colusa to Verona reach of the Sacramento River Ecological Management Zone. One vision of the zone is to recognize this reach as an important seasonal component of the critical migration habitat required by the endangered winter-run chinook salmon and thus provide positive-barrier fish screens at water diversions in this reach to protect juvenile fish. (ERPP, 2000)

The Sacramento River diversions fall within criteria established by the CVPIA, passed in 1992, for the protection and recovery of fisheries and fish habitat. The Anadromous Fish Screen Program was implemented under the CVPIA to oversee and fund the establishment of fish screens at water diversions to reduce fish mortality. MFWC's pumps and diversion practices on the Sacramento River are considered detrimental to fish passage under the directives of the CVPIA and CALFED. Consequently, they may require screening or other mitigation measures, such as relocation.

MFWC is currently undergoing a feasibility study to identify the most efficient and reliable water delivery system for MFWC and the feasibility of the design, construction, and operation of positive barrier fish screens for anadromous fish. Several anadromous and non-anadromous fish species use the Sacramento River and its tributaries for some portion of their life cycle. These species include chinook salmon, steelhead trout, Sacramento splittail, and delta smelt. Primary funding of the feasibility study was provided through the Central Valley Project Improvement Act (CVPIA). This proposal requests additional funding from CALFED to prepare the engineering final design, conduct the final environmental analyses, and secure the necessary permits for the project.

Relevant past studies: Studies conducted in the past include *Meridian Farms Water Company Feasibility Study (2001), White River Fish Screen Project Planning and Design* (1997); *M&T/Parrott Pumping Station and Fish Screen* (1998), and *Banta-Carbona Fish Screen Feasibility Study* (1996).

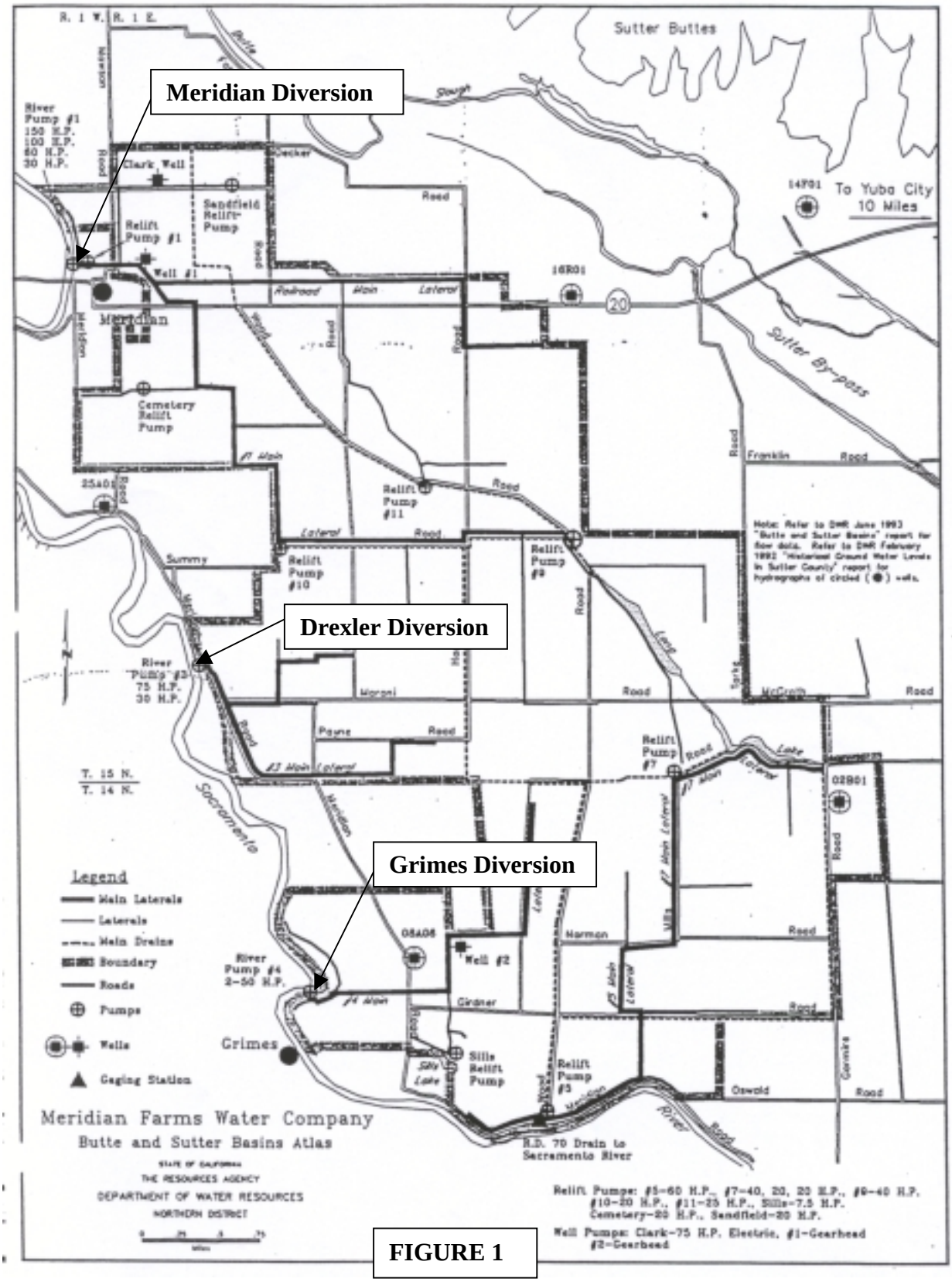
Meridian Diversion
Drexler Diversion
Grimes Diversion
Sutter Buttes
To Yuba City
10 Miles
Meridian
Grimes
Legend
Main Laterals
Laterals
Main Drains
Boundary
Roads
Pumps
Wells
Gaging Station
Meridian Farms Water Company
Butte and Sutter Basins Atlas
Sutter By-pass
Sacramento River

FIGURE 1

Background: Meridian Farms Water Company received a License (No. 4676-B) from the State of California, State Water Rights Board in 1956 to divert water from the Sacramento River under the provisions of a License for Diversion and Use of Water. The License, as amended in 1992, provides for the irrigation of an 8,734.91 acre service area. The diversion capacities for the Meridian (RM 134.2), Drexler (RM 128.8) and Grimes (RM 125.8) locations are 100, 35, and 30 cubic feet per second (cfs) respectively. The License allows a maximum diversion flow of 138 cfs from a period of about March 1 to about November 1. The present combined capacity of MFWC pumping facilities is 165 cfs.

The MFWC surface water pump stations deliver irrigation water through a series of both lined and unlined canals. Smaller laterals are connected to these main canals and provide additional water conveyance and distribution within each individual service area. As irrigation water circulates through the canals and laterals, drainage water is collected and pumped into the conveyance facilities via relift pumps to blend with better quality irrigation water from the Sacramento River.

There are 146 individual fields within the MFWC water service area. Grain crops comprised about 63 percent of the irrigated area in year 2000 with rice the predominant grain crop planted. Rice acreage accounts for approximately 55 percent of the total planted area in the 2000 crop year. Safflower and tomatoes are also important crops with each comprising approximately 10 percent of the cropping pattern in 2000. Permanent tree crops encompass about 8 percent of the planted area with walnuts being the predominate crop.

The objective of the feasibility study currently being prepared is to evaluate the improvement and/or consolidation of the three MFWC river pumping facilities and provide positive barrier fish screening at each pump intake for anadromous fish. The recommended alternative from the feasibility report is the elimination of both the Drexler and Grimes Diversions. The Meridian Diversion capacity would then be increased from 100 cfs to 165 cfs to provide surface water to all service areas. Positive barrier fish screens would be installed on the Meridian Diversion surface water pump intakes. The main irrigation canal would be widened and relined to convey the increased flows from the Meridian diversion and new pipelines will be designed to connect the existing irrigation canals once the Drexler and Grimes diversions go off line.

Consolidation of the Meridian, Drexler, and Grimes diversions will assist in substantially decreasing the mortality of salmon, steelhead, and other anadromous fish while reducing fish screening construction costs, annual operation costs, and maintenance costs.

2. Justification

The justification including conceptual model, hypotheses and selection of project type is not required for Fish Screen and Ladder Construction proposals. **Attachment 1** describes the justification for the feasibility study, which can also be applied to this phase of the project.

3. Approach

Meridian Farms Water Company is in the process of completing a feasibility study to evaluate water delivery alternatives including the feasibility of implementing fish screens. MFWC is submitting this proposal to CALFED for funding to complete the engineering final design, final Environmental Assessment/Initial Study (EA/IS) with Negative Declaration and Finding of No Significant Impact (FONSI), and permitting. The future phase of the project, not included in this funding request, will include the construction of the fish screen facility, creation of an operation and maintenance plan, and the installation of the hydraulic evaluation/biological monitoring plan to ensure that the facility is successful in preventing entrainment of anadromous fish.

MFWC will contract with Montgomery Watson Harza to complete the engineering final design based upon the conceptual design developed in the feasibility study for the preferred fish screen alternative. The development of contract documents includes a preliminary design, geotechnical investigations, surveying, 90 percent design submittal, 100 percent complete final design submittal, and environmental documentation.

The preliminary design includes preliminary layouts of fish screens and pump station based on established design criteria, a preliminary cost estimate, and a preliminary construction schedule. Technical memorandums will be prepared for each of the following categories: river and canal hydraulics, fish screen and pump station, pipeline design, and corrosion analysis. The hydraulic analysis will finalize the rating and exceedance curves developed in the feasibility phase of the project, confirm operational elevations, and evaluate temporary impacts associated with construction in the Sacramento River. The fish screen technical memorandum will provide layouts for the intake facilities. The pipeline technical memorandum will include pipe and valving selection, pipe size and layout, and the civil/site layout. The corrosion analysis will include conducting soil and water resistivity tests, analysis of data obtained, and recommendations for the protection of buried and submerged metallic structures. Additional components of the preliminary design will include geotechnical investigation and surveying to supplement the information collected during the feasibility stage. A geotechnical report will present a summary of the investigations conducted and provide recommendations for foundation design and earthwork considerations. The technical memorandum and fish screen layout will be presented to the Anadromous Fish Screen Program (AFSP) Technical Review Team to receive input and comments before final design of the facilities takes place. (See Performance Measures #1 and #4)

The 90 percent design submittal will incorporate review comments received from the preliminary design. The comments will come from MFWC landowners and staff, local interested parties, and from the AFSP Technical Team. The submittal will consist of a construction cost estimate, engineering drawings, bidding documents, and technical specifications for the following design disciplines: civil, mechanical, electrical, instrumentation, structural, and corrosion. (See Performance Measures #1 and #5)

The 100 percent complete final design will incorporate review comments received from the 90 percent submittal to provide bid-ready contract documents for construction including a final construction schedule and cost estimate. (See Performance Measures #1 and #6)

Montgomery Watson Harza will also complete the necessary environmental documentation necessary to meet the requirements of the California Environmental Quality Act (CEQA), and the National Environmental Policy Act (NEPA). The initial environmental focus will be to contact various agencies, solicit input, and identify the documents to be prepared. The Biological Assessment included in the feasibility study will be used to prepare a final Environmental Assessment/Initial Study (EA/IS) with Negative Declaration and Finding of No Significant Impact (FONSI). Draft documents will be prepared and submitted to the CALFED/AFSP Technical Team. Final documents will incorporate the comments received on the draft document. The lead agencies for the CEQA and NEPA process are Department of Fish and Game, and the U.S. Bureau of Reclamation, respectively. (See Performance Measures #1 and #3)

Montgomery Watson Harza will also prepare the necessary permits. The permitting process will consist of preparing permit applications and coordinating with appropriate agencies. **Table 1** lists the required permits and authorizations that have been identified for this project. (See Performance Measures #1 and #3)

Table 1. Required Permits and Authorizations

Agency/Permit	Applicability	Requirements for Application
U.S. Army Corps of Engineers Section 404 Nationwide and Section 7 Individual Permits	Required when working in natural streams and rivers	• Site Plan and Section Drawings • CVRWQCB Sect. 401 Water Quality Certification (may be done concurrently) • COE Application 4345 • Environmental Documentation
Central Valley Regional Water Quality Control Board Section 401 Water Quality Certification	Required when working in natural streams and rivers if the construction area is less than 5 acres	• CEQA Certification • Application Form and Fee • Section 1600 Stream Alteration Agreement or note contact with CDFG • Copy of COE Application 4345
California Department of Fish and Game Section 1600 Stream Alteration Permit	Required when natural streambed is to be altered by construction	• Environmental Documentation • Application Form and Fee • Project Location Map • Site Plan
State Historic Preservation Officer (SHPO) and National Historic Preservation Section 106 Coordination	Required for construction	• Archeological Inventory Survey and Report
California Endangered Species Act (CESA) Consultation	Required for construction	• State lead agency designated • Threatened and endangered biological review
Endangered Species Act (ESA) Compliance	Required for construction	• Federal lead agency designated • Site Visit • Threatened and endangered biological review

Reclamation Board Compliance	Required when under jurisdiction of Reclamation Board (flood control areas)	• Description of work and location • Environmental questionnaire and environmental review documents • Complete plans and specifications • Names and addresses of adjacent landowners
National Environmental Policy Act (NEPA) Compliance	Required for construction	• Federal lead agency designated • Prepare draft environmental assessment • Prepare EIS or FONSI
California Environmental Quality Act (CEQA)	Required for construction	• State lead agency designated • Prepare initial study • Prepare Negative Declaration or EIR

Future Phase: The future phase of this project is expected to include those tasks associated with the construction of the preferred alternative. The future phase of this project will incorporate knowledge gained from the activities of the feasibility phase and the final engineering and environmental documentation phase. The future phase is not included in this funding request because the preliminary design of the preferred alternative has not taken place. The preliminary design is essential in determining a confident construction cost estimate for this project. Based on the information provided in the feasibility study and experience in designing fish screens the expected tasks and anticipated costs associated with the future phase are summarized in **Table 2**. The tasks and cost estimates will be evaluated after the preliminary design and may change due to a better understanding of the design than what was known at the time this proposal was prepared. An accurate explanation of the tasks and costs associated with the tasks will be included in a subsequent proposal.

Table 2. Future Phase Tasks and Cost Estimates
(Not Included in this Funding Request)

Task	Description	Estimated Cost
1	Project Management	$60,000
2	Bidding Assistance	$20,000
3	Construction Management	$500,000
4	Engineering Assistance during Construction	$55,000
5	Construction	$6,000,000
6	Prepare O&M Manual	$20,000
7	As Built Drawings	$25,000
8	Hydraulic Evaluation	$100,000
9	Biological Monitoring	$120,000
	TOTAL	$6,900,000

4. Feasibility

The feasibility of fish screen projects in the Sacramento River is evident in similar successful projects such as *M&T/Parrott Pumping Station and Fish Screen*, 1998 and *White River Fish Screen Project Planning and Design*, 1997. Meridian Farms Water Company has selected Montgomery Watson Harza to complete the engineering final design and environmental analyses for the fish screen project. Montgomery Watson Harza has considerable expertise and experience in designing fish screens and will be able to complete the work within the time specified in the work schedule.

The completion of the engineering final design and the environmental documentation is dependent on the timely completion of the feasibility study. The feasibility study is currently underway and is scheduled to be completed by December 31, 2001. **Attachment 1** describes the progress of the specific tasks being accomplished for the feasibility study.

Several permits need to be secured before construction can proceed. **Table 1** lists the various agencies with applicable permit requirements. The completion of the permitting process will be during the proposed phase of the project as explained in the Approach. No other constraints are expected to prevent the execution of this project or impact the schedule such as zoning regulations or county planning ordinances.

The physical actions associated with the construction of the fish screen facility will be performed on land owned by the Meridian Farms Water Company. Therefore, permission to access public or private land is unnecessary for this phase of construction. The preferred alternative may require an easement for a pipeline through Sutter County or Andriotti Farms. MFWC will obtain written permission from the property owner to access their property and establish an easement through their lands. Access permission will be obtained before the preferred alternative for the pipeline is designed.

5. Performance Measures

Overall Performance Goal: Project evaluation will be performed throughout all phases of the project, from the feasibility stage to post-construction. Once the fish screen facility is constructed an ERP-MSCS milestone (E22) for the Sacramento River Basin will be achieved: "Install positive barrier fish screens on all diversions greater than 250 cfs in all Ecological Management Zones and 25% of all smaller unscreened diversions in the Sacramento River Basin. All fish species classified as "R" (Recovery) will benefit from this milestone."

A list of project-specific performance measures for each of the general indicator categories defined in Attachment G of the 2002 PSP are listed in **Table 3**. These performance measures will be used to assess the project's success in relation to its goals and objectives.

Table 3. Performance Measures

Performance Measure	Metric	Target	Baseline
1) Participation by landowners and key resource managers at project planning/ coordination meetings	Number of representatives from interested agencies.	Full Participation for duration of the project.	Not Applicable
2) Establishment and implementation of QA/QC program	Steps to establish QA/QC program.	Successful implementation of QA/QC program by all involved in the project for the duration of the project.	Not Applicable
3) Completion and distribution of Environmental Documentation and necessary permits.	Steps to complete CEQA and NEPA documentation and number of final documents to be issued to respectable agencies.	Final document approved by all interested parties before construction of the project and during Sept '02 to Sept '03.	Draft Biological Assessment
4) Development and approval of preliminary design for the preferred alternative established in the feasibility report	Number of preliminary design drawings to be issued to MFWC.	MFWC staff and other interested parties to review drawings and submit comments during Sept '02 to Jan '03.	Preferred Alternative in the Feasibility Report.
5) Approval of comments from the 30% preliminary design and completion of the 90% contract documents.	Number of 90% documents submitted to MFWC staff and number of 30% comments to be incorporated.	Consultant to respond to all comments, incorporating relevant comments into the 90% design. MFWC staff and other interested parties to review 90% drawings and submit comments during Jan '03 to Aug '03.	Preliminary Design
6) Finalize 100% contract documents incorporating all review comments from the 90% submittal	Number of 100% documents submitted to MFWC for bidding and number of 90% comments to be incorporated.	Consultant to respond to all comments, incorporating relevant comments into the 100% design. MFWC to accept contract documents during Aug '03 to Sept '03.	90% Submittal

Future Performance Measures: The facilities will be designed and constructed to allow certain parameters to be monitored. A hydraulic evaluation and biological monitoring will follow the construction phase of the project and be used to ensure that the facility is successful in preventing entrainment of anadromous fish. An operation and maintenance plan to ensure the fish screen facility continues to operate as designed will be created and implemented. In order to ensure smooth operation of the facility, start-up assistance will be implemented to familiarize the MFWC personnel with the operation of the new facilities. Improvements in the number of anadromous fish as a result of the installation of this fish screen should be shown in future data.

6. Data Handling and Storage

All paperwork and electronic data pertaining to project assessment, evaluation, final design, and environmental documentation will be handled and stored on a secure network by Montgomery Watson Harza. This data will be compiled on CD ROM and transferred to Meridian Farms

Water Company upon completion of the constructed facilities. Permanent files will be made available to CALFED upon request.

7. Expected Products/Outcomes

- Environmental compliance - all permit documentation and certification will be prepared and completed.
- Presentations as requested to inform and update CALFED Committees, Landowners, Water user groups, and Regulatory Agencies about project progress and findings.
- Continued elimination of fish entrainment and mortality from the operation of the three diversions operated by Meridian Farms Water Company.
- Quarterly reports detailing task accomplishments and fiscal expenditures to CALFED.
- Preliminary and Final design drawings and specifications for the fish screen facility at the Meridian Diversion. Submittals for review will be a 30, 90, and 100% design.

Work Schedule

The engineering final design and acquisition of various permits and environmental clearances will begin shortly after grant funds are available through a contract. Based on information provided at a CALFED proposal pre-submittal workshop a reasonable starting date for the work is assumed to be September 2002. The work schedule can be adjusted according to the actual execution date. The individual tasks and deliverables for the Meridian Farms Water Company Fish Screen final design and environmental assessments are identified below and are inseparable. The completion of final engineering documents depends on each of tasks identified below. A summary of the tasks, start and finish dates, and other comments are included in **Table 4**.

Table 4. Work Schedule

Task/Subtask	Description Title	Start Date (mo / yr)	Due Date (mo / yr)
Task 1	**Project Management**	**Sept '02**	**Sept '03**
Subtask 1.1	Completion of Contracting Forms	Sept '02	Sept '02
Deliverable	*Certain State and Federal forms required*		
Subtask 1.2	Performance Measures/Project Monitoring	Sept '02	Sept '03
Deliverable	*Annual Project reports*		
Subtask 1.3	Project Presentations	Sept '02	Sept '03
Deliverable	*Oral presentations at annual review meetings*		
Subtask 1.4	Budget Management/Quarterly Reporting	Sept '02	Sept '03
Deliverable	*Quarterly fiscal and programmatic reports due the 10th day of the month in the CALFED approved format*		
Subtask 1.5	Prepare work plan including management of subconsultants	Sept '02	Sept '03
Deliverable 1	*Work Plan*		
Deliverable 2	*Draft service contracts*		
Deliverable 3	*final service contracts*		
Subtask 1.6	Participate in Project Meetings	Sept '02	Sept '03
Deliverable	*Meeting Agenda and Minutes*		
Subtask 1.7	Institute and Maintain a QA/QC Program	Sept '02	Sept '03
Deliverable	*Memorandum to file*		

Task 2	**Public Outreach and Local Involvement**	**Sept '02**	**Sept '03**
Subtask 2.1	Notify adjacent property owners	Sept '02	Oct '03
Deliverable	*Memorandum explaining project*		
Subtask 2.2	Coordination with Local Government Officials	Sept '02	Sept '03
Deliverable	*Meeting agenda and minutes*		
Subtask 2.3	Coordination with existing watershed groups or local conservancies	Sept '02	Sept '03
Deliverable	*Meeting agenda and minutes*		
Subtask 2.4	Notification and involvement of the general public	Sept '02	Sept '03
Deliverable 1	*Project Presentations at Informational Meetings*		
Task 3	**Environmental Documentation *(*key milestone)***	**Sept '02**	**Aug '03**
Deliverable 1	*Draft Environmental Document*		
Deliverable 2	*Final Environmental Document*		
Task 4	**Preliminary Design (30% Design) *(*key milestone)***	**Sept '02**	**Jan '03**
Subtask 3.1	River and Canal Hydraulics		
Subtask 3.2	Fish Screen		
Subtask 3.3	Pipeline Design		
Subtask 3.4	Corrosion Analysis		
Subtask 3.5	Cost Estimate and Construction Schedule		
Deliverable 1	*Geotechnical Investigation Technical Report*		
Deliverable 2	*Topographical Map*		
Deliverable 3	*30 Percent Design Documents*		
Task 5	**90 Percent complete Final Design *(*key milestone)***	**Jan '03**	**Aug '03**
Deliverable 1	*90 Percent Complete Documents*		
Task 6	**100 Percent Complete Final Design *(*key milestone)***	**Aug '03**	**Sept '03**
Deliverable 1	*100 Percent Complete Documents*		
Task 7	**Permits and Authorization *(*key milestone)***	**Jan '03**	**Sept '03**
Deliverable 1	*Necessary Permits*		

Task 1: Project Management will span all elements of Tasks 2 through 7. This task will include preparing a work plan, participating in project meetings and presentations, distributing project information and progress reports, and instituting and maintaining a QA/QC Program. (See Performance Measures #1 and #2)

Task 2: Public Outreach and Local Involvement will include meetings with local agencies, water users, and landowners to inform them of the project. Local involvement took place during the feasibility study to determine the least impacting fish screen alternative on the Sacramento River and other affected parties. Meridian Farms Water Company will continue to involve the public, local government officials, and environmental agencies until the project is completed. (See Performance Measure #1)

Task 3: Environmental Documentation consists of preparing and completing all necessary documents in order to be compliant with the California Environmental Quality Act (CEQA), and the National Environmental Policy Act (NEPA). (See Performance Measure #3)

Task 4: Preliminary Design (30% Design) will finalize the design criteria for the project and consist of a set of final technical memorandums accompanied by 30 percent drawings of the major facility components. (See Performance Measure #4)

Task 5: 90% Complete Final Design includes the submittal of 90 percent complete documents for construction including engineering drawings, technical specifications, and bidding documents. (See Performance Measure #5)

Task 6: 100% Complete Final Design provides bid-ready documents for construction. (See Performance Measure #6)

Task 7: Permit and Authorization consists of preparing permit applications and coordination with appropriate agencies for the permits and authorization required for the project. (See Performance Measure #3)

B. APPLICABILITY TO CALFED ERP GOALS AND IMPLEMENTATION PLAN AND CVPIA PRIORITIES

1. ERP, Science Program and CVPIA Priorities

CALFED Program Goals:

GOAL 1: **At-Risk Species – Fish Screens:** This project will ensure the continuation to promote the recovery of at-risk species, in particular spring-run, fall-run, late fall-run and winter-run Chinook salmon, splittail, and steelhead trout; and contribute to the reversing of downward population trends of non-listed native species, by reducing or eliminating delay and injury to migrating adult fish by improving passage conditions and reducing entrainment in diversions for juvenile and larval fish.

GOAL 4: **Habitats – Fish Passage:** This project will eliminate two diversions along the Sacramento River: the Drexler and Grimes Diversion. The consolidation of the structures reduces the number of fish passage facilities and may provide more ecological benefits than retaining all three diversions with traditional fish screening solutions. According to the rationale described in the ERPP, for reducing or eliminating stressors such as water diversions in the Sacramento River – Programmatic Action 1D, emphasis should be given to projects that include the consolidation of several diversions points to a single location. (ERPP 2000)

REGIONAL IMPLEMENTATION– Sacramento Valley Region

This project address and fulfills Restoration Priorities for the Sacramento Region in the following way:

(SR-2) Restore fish habitat and fish passage particularly for spring-run chinook salmon and steelhead trout and conduct passage studies.

- *Fish passage improvements and fish passage programs.* This project will continue to ensure fish passage commitments on the Sacramento River. This project assists in achieving goals established in the Multi-Species Conservation Strategy (MSCS) for the Sacramento River Region such as reducing entrainment of juvenile salmon, steelhead, sturgeon, and splittail into water diversions. The installation of fish screens at the Meridian Diversion is part of the MSCS's programmatic action, **E034701** – develop a cooperative program to screen all diversions greater than 250 cfs and one-third to two-thirds of smaller unscreened diversions.

(SR-6) Continue major fish screen projects and conduct studies to improve knowledge of implications of fish screens for fish populations.

- *Continue and complete ongoing fish screen construction projects.* Screening Meridian Farms Water Company's diversions from the Sacramento River (one of eleven facilities names under this objective)

CVPIA Priorities: This project addresses priorities/considerations for spring-run, winter-run Chinook salmon, winter-run Chinook salmon, steelhead trout and splittail and their associated habitats in the CVPIA focus area of the Sacramento River Basin. This project also addresses most of the goals described in section 3402, 3406(b)(1), and Section 3406(b)(21) of the Central Valley Project Improvement Act. Some of the goals addressed by this project are mentioned below:

Applicability to the Anadromous Fish Restoration Program Section 3406(b)(1) objectives:

- *Improve habitat for all life stages of anadromous fish by providing flows of suitable quality, quantity, and timing, and improved physical habitat;* This project improves fish passage and flow management in the Sacramento River that greatly increases the spawning success and survival of fall, late-fall, and spring-run chinook salmon and steelhead.
- *Improve survival rates by reducing or eliminating entrainment of juveniles at diversions;* The state-of-the-art fish screens constructed at the Meridian diversion will result in the elimination of a source of mortality to spring and winter-run chinook salmon.
- *Improve the opportunity for adult fish to reach their spawning habitat in a timely manner:* The installation of fish screens at the Meridian diversion greatly increases the opportunity for adult anadromous fish to reach their natural spawning and rearing habitat north of Chico Landing.

2. Relationship to Other Ecosystem Restoration Projects

The implementation of fish screens at diversion points along the Sacramento River has a strong relationship to other ecosystem restoration projects and is an integral part of the overall ecosystem restoration program for the mainstem Sacramento River. Restoration activities along

all reaches of the Sacramento River are critical to provide the connectivity to upper watershed spawning and rearing of anadromous fish species making their way to and from the Bay-Delta. Upstream Sacramento River efforts would lose value if the connection to the lower reaches of the Sacramento River were compromised or lost. This project will keep anadromous and non-anadromous fish species within the channel of the Sacramento River, allowing other ecosystem restoration projects to be implemented in the surrounding areas.

CALFED has funded a number of fish screen facilities along the Sacramento River and has succeeded in screening most of the major diversions. The fish screen facility for Meridian Farms Water Company is similar to other successful projects funded by CALFED and CVPIA. Some examples include fish screen facilities for Banta-Carbona Irrigation District, M&T Ranch/Llano Seco Pumping Plant, and diversions in the upper and lower Butte Creek Area.

3. Requests for Next-Phase Funding

The Meridian Farms Water Company previously received funding from CVPIA for the Positive Barrier Fish Screen Feasibility Study and Preliminary Environmental Assessment. MFWC has completed a Preliminary Feasibility Report (September 2001) and is planning to complete the Final Feasibility Study in December 2001. The information gathered from this phase of the project will provide the framework necessary for implementation of the engineering final design and final environmental analyses aspects of the project. **Attachment 1** provides a summary of the status of the feasibility study and its relationship to the proposed phase of the project.

4. Previous Recipients of CALFED or CVPIA Funding

Meridian Farms Water Company, has never received CALFED or CVPIA funding for any project other than the CVPIA funding for the feasibility study on this project, as described in **Attachment 1**. The CVPIA program is the Anadromous Fish Screen Program [(3406)(b)(21)] and the grant number is #99-FG-20-0251.

5. System-Wide Ecosystem Benefits

The Sacramento River is an essential spawning, rearing, and migratory pathway for many anadromous fish populations, such as winter-run, fall-run, late-fall-run, and spring-run chinook salmon, steelhead, white sturgeon, green sturgeon, lamprey, striped bass, and American shad. Installation of fish screens at the diversion points along the Sacramento River will provide ecosystem benefits for the areas beyond the diversion points because fish survival will be significantly augmented. The fish screen facility will keep fish from being genetically isolated from the rest of the population, thus augmenting the long-term sustainability of the fish species present in the Sacramento River. This project will complement other restoration projects that are underway or completed in the watersheds above the diversions.

6. **Additional Information for Proposals Containing Land Acquisitions** N/A

C. QUALIFICATIONS

Montgomery Watson Harza, MWH, is a full service civil and environmental engineering firm specializing in a variety of services including water and wastewater engineering, energy and infrastructure engineering, flood control, waste remediation, fisheries design, and environmental assessment and mitigation. The firm also works in a number of other industry sectors such as construction, finance, information technology, applied research, project management, laboratory services and government relations.

MWH - the result of a recent merger between Montgomery Watson and Harza Engineering Company – brings to the industry expertise in fish screen and water structure design and construction. With more than $721 million in revenue, MWH has 5,500 specialists in more than thirty nations and more than 231 years of combined experience. MWH is successful in delivering progressive environmental solutions that reflect the latest scientific and technological developments while recognizing the importance of protecting the environment and the quality of life in local communities. MWH is a recognized leader in water resources and environmental planning. MWH has been present in Northern California for many years and continues to provide engineering service to many local private and public clients. The company has expertise and the capability to perform all phases of a project from the planning phase to the construction and operation of the completed project.

Montgomery Watson Harza Engineers:

Neil W. Schild is a Principal Engineer with 41 years of experience in operation and maintenance of dams, water supply reservoirs, and power generation projects. He earned a B.S. in Agricultural Engineering from Kansas State University and is a Professional Agricultural Engineer in California. During 20 years with the U.S. Bureau of Reclamation, he has proven his ability to provide reasonable and practicable solutions to even the most complex situations. His background includes design and construction of fish protection facilities, application of environmental regulations, management of water and land resources, transfer of water rights, water resource planning, project management, and administration of personnel. Mr. Schild was Project Manager for M&T Chico Ranch Fish Screen Facility, Gorrill Land Company Fish Screen and Ladders Project, and Banta-Carbona Irrigation District Fish Screen Feasibility Study. He is currently the Project Manager for various Fish Screen Feasibility Studies in Northern California.

Wayne C. Dahl is a Principal Engineer with 23 years of experience in large civil engineering projects including planning, design, and construction management of water resources projects, including flood control and water supply. He received a B.S. in Civil Engineering from North Dakota State University, and completed graduate course study in Hydrology from Arizona State University. He is a Professional Civil Engineer in California and Arizona, and a Land Surveyor in California. Mr. Dahl has expertise in the design and construction of water distribution systems; hydrology and drainage projects; canals, channels, pipelines, and pumping stations; reservoir design; and bridges and roadways. Mr. Dahl is experienced in all phases of project and program implementation, including planning, analysis, design, plans and specifications, cost estimating, bidding, and construction management. He is the Project Manager for the American River Pump Station Project, and for Arcade Water District's Capital Improvement Program.

Dennis E. Dorratcague is a Principal Engineer and the water resources director in Montgomery Watson Harza's Northwest Region. He earned a B.S. from University of Notre Dame and his M.S. in Civil Engineering at Colorado State University. He is a Professional Civil Engineer in Washington, Oregon, Alaska, and California. He has been working in the field of hydrology and hydraulics since 1972, primarily concentrating on hydraulic structures and fisheries engineering. He has served as Technical Manager for the Banta-Carbona Irrigation District Fish Screen Feasibility Study and for the preliminary and final design for a fish screen, ladder, and tailrace barrier in Western Oregon. Mr. Dorratcague was also Project Manager for the development of the Feature Design Memorandum for the Surface Bypass Spillway Project; the hydraulic modeling, preliminary and final designs, and construction services of a fish screen on the White River in Western Washington; the preliminary and final design of a fish screen facility for Pacific Power and Light Company; and the Salmon Falls Fish Passage Project.

Janet L. Atkinson is a Supervising Engineer with 21 years of experience in the planning and design of water resource and general civil engineering projects with special emphasis on the design of pipelines and pumping plants. She received a B.S. in Civil Engineering from University of Oklahoma and is a Professional Civil Engineer in California and Oklahoma. She has served as project manager and project engineer for several planning and design projects for pump stations. She was responsible for leading the preliminary design effort for a 25 MGD pump station for the Contra Costa Water District. Ms. Atkinson also participated in the design of an irrigation distribution system for the Semitropic Water Storage District in Kern County, the preliminary design of the Central Utah Project Irrigation and Drainage System, and a conceptual engineering report for the San Francisco Water Department Alameda Creek Fishery Water Recapture Facility.

Michelle Treinen is an Engineer with experience in civil, environmental, and water resource engineering. She received a B.S. in Civil Engineering from Loyola Marymount Univeristy and a M.S. in Environmental Engineering from University of California Berkeley. She is a Professional Civil Engineer in California. Her experience covers a variety of fields within civil engineering such as civil site design, water supply projects, and wastewater treatment plant improvements. She has performed various tasks including reservoir sizing, yard piping design, site grading, access road design, drainage assessment, and construction scheduling. She also prepared a Mitigated Negative Declarations and has successfully mitigated for an endangered plant at a reservoir site. Ms. Treinen served as Project Engineer on the Spring Lane Tank No. 2 project located in Tiburon, California and is currently the lead Civil Engineer on the Eastridge Reservoir in Fairfield, California.

Private Environmental Consultant:

Steve Clifton has a wildlife consulting background with an emphasis on the ecology and conservation of special-status plant and wildlife species endemic to California. He received a Bachelor of Arts Degree in Wildlife Biology/Zoological Concentration in 1985 from California State University. Mr. Clifton has worked as a sub-consultant conducting field surveys in Plumas National Forest of California in accordance to present survey protocol. He has served as project biologist for the Endangered Species Recovery Program collecting genetic samples, monitoring movement patterns, and providing technical expertise concerning the San Joaquin kit fox, giant

kangaroo rat, riparian brush rabbit, riparian woodrat, and other species. He served as Field Investigator for the Habitat Assessment and Finding of No Significant Impact for the proposed Tracy O&M Facility Relocation Site. Mr. Clifton is the Principle Field Investigator conducting pipeline alignment clearance surveys for the Delta-Mendota Canal and California Aqueduct right-of-way in San Joaquin, Stanislaus, Merced, Fresno, Kings, and Tulare counties, CA.

D. COST

1. Budget – Total Costs: $750,000

(A detailed budget for this project is included in the application forms of the proposal.)

2. Cost-Sharing

Meridian Farms Water Company is planning to contribute $40,000 towards the fish screen project and contribute in kind services for project support. MFWC staff will provide information and assistance when requested, review contracts and legal documents concerning the project, and provide facilities for the stakeholders meeting to obtain input from the community and local governmental interests.

E. LOCAL INVOLVEMENT

Public Outreach Plan: A cooperative program will be developed to conduct public outreach to key stakeholders which include Meridian Farms Water Company, CA Department of Fish and Game, CA Deptartment of Water Resources, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Sutter County government, Town of Meridian, Town of Grimes, Andriotti Farms and other nearby landowners, and other interested parties. The outreach program will be structured to maximize the participation of the stakeholders in order to inform and educate the community about the project and its intent to protect anadromous fish. Planned and scheduled meetings will be organized and conducted by Montgomery Watson Harza. These stakeholder meetings will provide an opportunity for all participants to have input regarding the design and construction of fish passage and water delivery structures on the Sacramento River.

Commitment by MFWC and MWH to keep the public informed about the project will minimize conflict and misinformation between landowners, land users, governmental agencies, and conservation groups. In addition, these outreach efforts will inform and educate local communities about the CALFED Ecosystem Restoration Program.

Local, state, and federal resource agencies have shown strong support for this fish screen project because it meets specific natural resource program goals and objectives. Additional local participation will occur during the CEQA/NEPA compliance process. A public notice will be made once the draft EA/IS is available for public and agency review. Any comments received during this period will be addressed in the final EA/IS. The installation of the fish screen facility is not expected to have any negative impacts to businesses and residents along the river or from recreational users of the river.

Third Party Impacts: None

F. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

Meridian Farms Water Company is willing to accept the standard terms and conditions for the state and federal contracting. The applicant has reviewed the terms and conditions and is agreeable to the language used in Attachment D and E.

G. LITERATURE CITED

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

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

CALFED Bay-Delta Program. Ecosystem Restoration Program Plan, Volume 2: Ecological Management Zone Visions, July 2000.

CALFED Bay-Delta Program. Multi-Species Conservation Strategy, July 2000.

Central Valley Anadromous Fish Annual Run-Size, Harvest and Population Estimates, 1967 through 1991, CDFG, August 1994 Revision.

Central Valley Project Improvement Act, Title 34 of PL 102-575, Sections 3402, 3406 and 3407. Approach and Focus for Implementing the CVPIA 1999-2004.

Department of California Fish and Game, National Community Conservation Planning Act, Sections 2800-2840, 1991.

Final Endangered Species Act Section 7 Consultation Handbook, March 1998.

Montgomery Watson, Banta-Carbona Irrigation District Fish Screen Feasibility Report, 1996.

Montgomery Watson, Meridian Farms Water Compnay Fish Screen Feasibility Report, 2001.

Montogomery Watson & Ducks Unlimited Inc., Lower Butte Sink Water Control Structures, November 15, 1999.

Schild, Neil W., M&T/Parrott Pumping Station and Fish Screen. Presented at Fish Passageway Workshop, Sacramento, California, March 26, 1998.

ATTACHMENT 1

Summary of Existing Project Status:
Meridian Farms Water Company Positive Barrier Fish Screen Project (99-FG-20-0251)

***Project Description*.** Meridian Farms Water Company (MFWC) and Montgomery Watson Harza are in the process of completing a feasibility study in order to evaluate water delivery alternatives for MFWC and the feasibility of the design, construction, and operation of positive barrier fish screens for anadromous fish. This feasibility study will provide conceptual designs, preliminary environmental assessments, and collection of data necessary for the completion of the requested next phase of the project as described in this proposal.

Scientific Merit. There is relatively little uncertainty associated with this project. With the scientific knowledge regarding anadromous fish restoration, an increase in the number of fish returning to the spawning areas upstream of this facility is expected once the fish screens are installed. MFWC's pumps and diversion practices on the Sacramento River are detrimental to fish passage. Instead of eliminating the diversions, which would have devastating local and statewide economic and social impacts, the diversions will be screened to positively impact the fishery and maintain the economic and social viability of the area through irrigated agriculture.

Hypotheses*:* Construction of a positive barrier fish screen on the existing diversions or at a consolidated diversion will substantially improve survival of juvenile anadromous fish migrating through the Colusa/Verona reach of the Sacramento River.

Conceptual Model*:* Juvenile anadromous fish are vulnerable to mortality at unscreened or inadequately screened diversions in rearing areas and along migration routes. Screens designed and installed to meet appropriate regulatory criteria for mesh size, approach velocity, and sweeping velocity will reduce mortality to near background levels. MFWC currently operates three diversions along the Sacramento River. Photographs of the three diversions evaluated in the feasibility study are shown in **Figure 2**. The feasibility study will consider possible consolidation of diversions and installation of fish screens on the remaining diversions. Consolidation of diversions could help decrease mortality of salmon, steelhead, and other anadromous fish while saving power and money due to decreased pumping and improved efficiency.

Adaptive Management*:* In the case of water diversions, it is known that positive barrier fish screens allow water to be diverted so fish can safely remain in the river habitat. The screening of fish has been proven through testing existing screens under numerous conditions. MFWC will continually operate, maintain, and monitor the fish screen. The feasibility study will provide the information necessary to determine the best alternative to screening the diversions.

Status of the Project. In conjunction with Montgomery Watson Harza, the applicant has completed a Preliminary Feasibility Report (September 2001) and is planning on completing the Final Feasibility Study in December 2001. **Table 1-A** summarizes the tasks associated with the final feasibility study, the accomplishments to date, and the cost of each task.

Table 1-A: Task Schedule and Budget of the Meridian Farms Water Company Positive Barrier Fish Screen Project.

Task / Subtask No.	Descriptive Title	Start Date (mo/yr)	Due Date (mo/day/yr)	Total Costs
Task No. 1	Site Visit/Meetings	May '00	Aug '00	$2,000
Task No. 2	Project Operational Requirements	June '00	Oct '00	$6,500
Task No. 3	Collect and Review Engineering Data	June '00	Oct '00	$4,000
Subtask 3.1	*Geology and Soils*			
Subtask 3.2	*Hydrology and Water Quality*			
Subtask 3.3	*Topographical and Bathymetry Survey*			
Task No. 4	Fisheries	June '00	Oct '00	$2,000
Task No. 5	Environmental Documentation	July '00	Nov '01	$9,500
Task No. 6	Conceptual Design	Sept '01	Nov '01	$16,000
Task No. 7	Recommended Alternative and Feasibility Report	Oct '00	Dec '01	$10,000
				$50,000

Fiscal Status. Contract amount: $50,000
Invoiced amount: $22,450

Relationship to Next-Phase Funding. Task 4 of the feasibility study, fisheries, will provide information on the temporal and spatial timing and size of fish species migrating or using this reach of the Sacramento River. The fisheries chapter of the feasibility study will focus on the beneficial aspects of the project on salmonids that rear and migrate along this portion of the Sacramento River, as well as the potential effects of the project on winter-run chinook salmon. Salmon life history and other relevant information for the Sacramento River will be included in the Environmental Assessment/Initial Study.

Task 5 of the feasibility study, environmental documentation, is the preparation of a draft biological assessment. A field reconnaissance survey will be conducted to determine vegetation and wildlife habitat, absence of any wetlands, and the potential for presence of special status species. Information from this survey will be incorporated into the EA/IS and reviewed by USFWS and CDFG to ensure their concerns of protecting rare, threatened and endangered plant and wildlife species and habitats are addressed. Tasks 4 and 5 will be used as the framework for the EA/IS in the next-phase of the project as described in this proposal.

Task 6 of the feasibility study, conceptual design, will incorporate the data gathered in Tasks 2 and 3, and will provide pre-design drawings of the selected fish screen facilities alternative. The conceptual design will serve as a basis for the final engineering design portion of the proposed next-phase project.

Meridian Diversion

Drexel Diversion

Grimes Diversion

FIGURE 2