Northside Diversion Dam Fish Passage Feasibility Study

Project Information

1. **Proposal Title:**

   Northside Diversion Dam Fish Passage Feasibility Study

2. **Proposal applicants:**

   Steve Butler, Orland Unit Water Users' Association

3. **Corresponding Contact Person:**

   Rick Massa
   Orland Unit Water Users' Association
   828 8th St. Orland, CA 95963
   530 865-4126
   ouwua@glenncounty.net

4. **Project Keywords:**

   Anadromous salmonids
   Fish Ladder construction
   Water Resource Management

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 Passage

8. **Type of applicant:**

   Private non-profit

9. **Location - GIS coordinates:**

   Latitude: 39.800

   Longitude: -122.267

   Datum:

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

Northside Diversion Dam is located 4.25 miles downstream of Black Butte Dam on lower Stony Creek, approximately 19.75 miles upstream of confluence of lower Stony Creek and the Sacramento River.

10. **Location - Ecozone:**

    6.1 Stony Creek

11. **Location - County:**

    Glenn

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: 185,000

    b) Do you have cost share partners already identified?

No

c) Do you have potential cost share partners?

No

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

No

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?**

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?**

No

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)

Rick Wantuk NMFS (707)575-6063

Bill O'Leary Reclamation (916) 978-5207

Ron Brockman Reclamation (916)978-5206

21. **Comments:**

#17a. Work will be performed by sub-contractors. Therefore, OUWUA will have no overhead rate.

Environmental Compliance Checklist

Northside Diversion Dam Fish Passage Feasibility Study

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

      No
   b) Will this project require compliance with NEPA?

      No
   c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

      This propsal falls under the ESA. The OUWUA through Reclamation is in formal Section 7 consultation with the NMFS for the effects of lower Stony Creek water management on anadromous fish.

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

   CEQA Lead Agency:
   NEPA Lead Agency (or co-lead:)
   NEPA Co-Lead Agency (if applicable):

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

   CEQA
   -Categorical Exemption
   -Negative Declaration or Mitigated Negative Declaration
   -EIR
   Xnone

   NEPA
   -Categorical Exclusion
   -Environmental Assessment/FONSI
   -EIS
   Xnone

   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?

      Not Applicable

   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

STATE PERMITS AND APPROVALS

Scientific Collecting Permit

CESA Compliance: 2081

CESA Compliance: NCCP

1601/03

CWA 401 certification

Coastal Development Permit

Reclamation Board Approval

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

CWA 404

Other

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land.
Agency Name:

Permission to access state land.
Agency Name:

Permission to access federal land.
Agency Name:

Permission to access private land.
Landowner Name:

6. **Comments.**

Land Use Checklist

Northside Diversion Dam Fish Passage Feasibility Study

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?**

   No

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).

   A determination of a feasible fish ladder will be made, and will be installed below the dam which is not expected to affect land use or water flow changes.

4. **Comments.**

Conflict of Interest Checklist

Northside Diversion Dam Fish Passage Feasibility Study

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):

Steve Butler, Orland Unit Water Users' Association

Subcontractor(s):

Are specific subcontractors identified in this proposal? No

Helped with proposal development:

Are there persons who helped with proposal development?

Yes

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

Basia Trout Bureau of Reclamation

Neil Schild Montgomery Watson Harza

Amy Wade Montgomery Watson Harza

Chris Leininger Ducks Unlimited

Comments:

Budget Summary

Northside Diversion Dam Fish Passage Feasibility Study

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						35000			35000.0		35000.00
2	Develop Project Alternatives						25000			25000.0		25000.00
3	Data Collection and Develop Design Criteria						65000			65000.0		65000.00
4	Conceptual Design						25000			25000.0		25000.00
5	Feasibility Report						35000			35000.0		35000.00
		0	0.00	0.00	0.00	0.00	185000.00	0.00	0.00	185000.00	0.00	185000.00

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=185000.00

Comments.

Budget Justification

Northside Diversion Dam Fish Passage Feasibility Study

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

N/a. OUWUA will not be performing the work indicated in the proposal. All work will be contracted out.

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

N/a. OUWUA will not be performing the work indicated in the 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. OUWUA will not be performing the work indicated in the proposal. All work will be contracted out.

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

N/a. OUWUA will not be performing the work indicated in the proposal. All work will be contracted out.

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

N/a. OUWUA will not be performing the work indicated in the 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.

Subcontractors will perform all tasks specified in the budget. The estimated time required is 2000 hours. The hourly rate for Montgomery Watson Harza ranges from $70/hour for Associate Engineer to $150/hour for 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. OUWUA will not be performing the work indicated in the 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.

Project Management Subtasks: Project Management (includes preparing work plan, meeting with regulatory agencies, local involvement, responding to questions, preparing periodic reports), $20,000 Kickoff Meeting and Site Visit (Includes kickoff meeting, presentations to stakeholders, and site visit),

$15,000

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

N/a. OUWUA will not be performing the work indicated in the 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. OUWUA will not be performing the work indicated in the proposal. All work will be contracted out.

Executive Summary

Northside Diversion Dam Fish Passage Feasibility Study

Location: The Northside Diversion Dam is located 4.25 miles downstream of Black Butte Dam on lower Stony Creek, approximately 19.75 miles upstream of the confluence of lower Stony Creek and the Sacramento River, in Glenn County, California. The project is in Ecozone 6: Colusa Basin, 6.1: Stony Creek. Project Type: Feasibility Study to determine the need and conceptual design for Temporary Fish Ladder Project Approach: The Orland Unit Water Users Association is requesting funding to conduct a Feasibility Study to determine the impact of the Northside Diversion Dam on the upstream and downstream migration of juvenile and adult anadromous fish species, and to reduce the impact if necessary. Topographic and geo-technological information will be gathered at the project area, and alternatives will be developed for implementing fish passage. Data will be collected on the hydrologic conditions including water temperature, water quality, substrate suitability, project operation, and existing facilities. All construction areas that require mitigation or specified times to complete the work will be documented. The environmental work will document any potential fatal flaws from an environmental perspective. After design criteria is established and necessary data is compiled, conceptual designs of alternatives and Feasibility Report will be produced for review. Hypothesis: Upstream adult passage and downstream juvenile passage through the Northside Diversion Dam will improve by modifying the existing facilities and/or operations. Key Uncertainties: Due to the multitude of lethal and sub-lethal stressors in the migratory pathway, it is difficult to predict the incremental benefit of eliminating a single stressor. Also, it is uncertain whether the reach beyond the Northside Diversion Dam is suitable spawning habitat for anadromous fish. Expected Outcome(s): The products of this project are a Feasibility Study with a recommended alternative for improving fish passage, conceptual designs of each alternative, preliminary environmental documentation, and preliminary design criteria. Relationship to CALFED ERP and CVPIA Goals: This project addresses CALFED ERP Goals 1,2, and 4, and fulfills the CVPIA Anadromous Fish Restoration Program Section 3406(b)(1) objectives and the Anadromous Fish Screen Program Section 3406(b)(21).

Proposal

Orland Unit Water Users' Association

Northside Diversion Dam Fish Passage Feasibility Study

Steve Butler, Orland Unit Water Users' Association

NORTHSIDE DIVERSION DAM FISH PASSAGE FEASIBILITY STUDY

CALFED PROPOSAL

Submitted by

Orland Unit Water Users' Association
828 8th Street
Orland, CA 95963

October 2001

PROJECT DESCRIPTION: PROJECT GOALS & SCOPE OF WORK

Problem:

Project Location: The Northside Diversion Dam is located 4.25 miles downstream of Black Butte Dam on lower Stony Creek, approximately 19.75 miles upstream of the confluence of lower Stony Creek and the Sacramento River, in Glenn County, California. The project is in Ecozone 6: Colusa Basis, 6.1: Stony Creek. See **Figure 1** for location map.

Problem: The Orland Unit Water Users' Association (OUWUA) is an Orland Project contractor for the Bureau of Reclamation, responsible for operation, maintenance, and replacement of the Northside Diversion Dam. Reclamation (with OUWUA), and the Corps of Engineers are currently in formal consultation with the National Marine Fisheries Service (NMFS) to assess the effects of lower Stony Creek water management on the anadromous fishery below Black Butte Dam. One measure that falls under this assessment is determining the feasibility of constructing a temporary fish ladder at the North Diversion Dam to successfully pass any anadromous spawning fish found in the lower Stony Creek to its upper four mile reach.

Currently the Northside Diversion Dam (NDD) is operated from approximately March through November of each year for irrigation. The north end of the 375-foot long, 16 foot high NDD contains a 36-foot sluiceway with a 12-foot by 6-foot wide electrically operated drum gate that allows 30 cfs or additional water flows to be bypassed downstream during diversions.

The chinook salmon, steelhead trout, and other anadromous fish are at-risk species that may benefit (if they are present) from actions to improve upstream fish passage in Stony Creek and other tributaries to the Sacramento River. **The objective of this project is to determine the impact of the Northside Diversion Dam on the upstream and downstream migration of juvenile and adult anadromous fish species, and to reduce the impact if necessary.**

The Orland Unit Water Users' Association is requesting funding to conduct a Feasibility Study to determine the best alternative to allowing fish passage in Stony Creek. This Feasibility Study will determine if the need for a fish passage facility exists, and will examine several alternatives including fish screen and/or fish ladder construction, alternative water sources, or the no-action alternative. If it is determined that constructing a fish passage facility at the Northside Diversion Dam is a necessary and feasible option, OUWUA will locate assistance to design a facility.

Relevant past studies*:* Relevant studies conducted include *Banta-Carbona Fish Screen Feasibility Study* (1996), *Pleasant Grove-Verona Mutual Water Company Fish Screen Pre-Feasibility Study* (2000), *Fish Passage Improvement Project at Red Bluff Diversion Dam* (1999), *Preliminary Assessment of Streambed Substrate for Salmon Spawning in Stony Creek, California*, February 1998, by Natural Resource Scientists, Inc., Vogel et al;

Biological Assessment—Effects of Lower Stony Creek Water Management on Winter-run Chinook Salmon, Spring-run Chinook Salmon, Fall/Late Fall-run Chinook Salmon, and Steelhead, prepared by U.S. Bureau of Reclamation Northern California Area Office, Red Bluff Field Station and U.S. Army Corps of Engineers, Sacramento District.

Justification:

Conceptual Model: The conceptual model for the project depends upon the magnitude of the hindrance made by the Northside Diversion Dam, as will be determined in the Feasibility Study. If there are migrating fish in the reach of the Stony Creek above the Northside Diversion Dam, then instituting a fish passage facility will restore access to spawning and natal holding areas, thus contributing to the recovery of federally and state listed threatened and endangered species.

However, if fish passage is not necessary for the spawning process to occur, a conceptual model will not include the Northside Diversion Dam. Thus a fish passage facility would not be constructed. This Feasibility Study will determine the magnitude of the hindrance made by the Northside Diversion Dam, and the potential positive and/or negative effects of instituting a fish passage facility.

Hypotheses being tested: The hypothesis to be evaluated is that upstream adult passage and downstream juvenile passage through the Northside Diversion Dam will improve by modifying the existing facilities and/or operations.

Adaptive Management: Within the adaptive management process, the Feasibility Study will explore the alternatives available for the specified location, while meeting ecosystem goals and objectives of improving fish passage. Through evaluation of the alternatives selected during the Feasibility Study, it is possible to determine a preferred alternative. If the preferred alternative chosen involves constructing a fish passage facility, steps will be taken to initiate the restoration actions including engineering design, environmental documentation, construction, and monitoring. If the no-action alternative is determined to be the most feasible alternative, no further action will be taken.

In our case, the goal is to increase the number of fish in the Sacramento River and tributaries, including Stony Creek. The direction is to positively impact the fishery and maintain the economic and social viability of the area through irrigated agriculture.

Approach:

The approach to the Feasibility Study will be to visit the site and gather information. A kickoff meeting will be held to coordinate between OUWUA and the appropriate agencies that are stakeholders in the project. Project alternatives will be developed for analysis. A subcontract will be issued for topographic and geo-technical information that will be required to determine alternatives for fish passage through the Northside

Diversion Dam. Other data will be collected on the hydrologic condition including water temperatures, water quality, substrate suitability, project operation, and existing facilities.

The environmental impacts of the project will be examined and included as a part of the Feasibility Study. The areas impacted will be surveyed for threatened or endangered species and plants to the extent that adjacent property owners will permit such work to be conducted on their respective properties. All construction areas that require mitigation or specified times to complete the work will be documented. The applicant will conduct a brief cultural resources review to comply with Section 106 of the National Historic Preservation Act (NHPA). The overall goal of the environmental work will be to identify any potential fatal flaws from an environmental perspective. A fatal flaw is defined as an environmental issue that would cause substantial delays in the project or cause the project to be infeasible.

After design criteria has been established and necessary data is collected, conceptual designs and a Feasibility Report will be produced. The Feasibility Report will document the data collected and show a comparison of alternatives in terms of O&M cost, construction cost, feasibility of meeting the water requirements, and feasibility in improving fish habitat. The Feasibility Report will include conclusions and a recommendation for implementation based upon the research done during the Feasibility Study. The report will be submitted to CALFED for review, and will incorporate comments as appropriate.

Refer to the Work Schedule section of this proposal for a task breakdown of the work to be performed.

Feasibility:

This project has support from the U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, National Marine Fisheries Service, Department of Fish and Wildlife, California Department of Fish and Game, and adjacent landowners (i.e. Eastby Estate, Delbert Reimers, Black Butte Ranch).

Feasibility of completing a Feasibility Study as described in the Work Schedule is excellent. Montgomery Watson Harza, the consulting engineer, has completed similar feasibility studies including *Banta-Carbona Fish Screen Feasibility Study*, and *Meridian Farms Fish Screen Feasibility Study.*

No permits will be necessary in order to complete the Feasibility Study. If OUWUA determines that a fish passage facility is necessary and feasible, then all necessary permits will be obtained in the next-phase of the project. The OUWUA, through the Bureau of Reclamation, is in formal Section 7 consultation with the NMFS for the effects of lower Stony Creek water management on anadromous fish.

Performance Measures:

Project evaluation will be performed throughout the feasibility stage of the project. If the applicant determines that it is feasible to design a fish passage facility, project evaluation will be implemented during design, construction, and post-construction. 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 allowing fish passage. Upon being deemed necessary and feasible, OUWUA will create an operation and maintenance plan to ensure the fish passage facility continues to operate as designed. Improvements in anadromous fish passage as a result of the installation of the facility should be shown in future data.

A list of project-specific performance measures that will be used during the Feasibility Study to assess the project's success in relation to its goals and objectives are listed in **Table 1**.

Table 1: Performance Measures for the Feasibility Study.

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 design criteria and preliminary environmental assessments.	Data collected for geology, hydrology, water quality, project operation, existing facilities, topography, vegetation and wildlife, fisheries, and cultural resources.	Final design criteria and data defined in Feasibility Report approved by all interested parties.	Not Applicable
4) Development and approval of conceptual design for the preferred alternative established in the Feasibility Report	Number of conceptual design drawings to be issued to OUWUA.	OUWUA staff and other interested parties to review drawings and submit comments.	Not Applicable

Data Handling and Storage:

All paperwork and electronic data pertaining to the Feasibility Study will be handled and stored on a secure network by the consulting engineer. This data will be compiled on CD ROM and transferred to Orland Unit Water Users' Association upon completion of the Feasibility Study or upon completion of the constructed facilities, depending upon whether a fish passage facility is determined to be necessary and feasible. Permanent files will be made available to CALFED upon request.

Expected Products/Outcomes:

The products of this project are a Feasibility Study with a recommended alternative for implementation, conceptual designs of each alternative, preliminary environmental documentation, and preliminary design criteria.

In completing the above products, several support products will also be developed. These include presentations to appropriate stakeholders, memorandums, maps, and progress reports to CALFED and other agencies. If the applicant determines that a fish passage facility is necessary and feasible, there will be other outcomes of this project, including design documents and the construction of a facility. However, these are not deliverables of this aspect of the project.

Work Schedule:

The Feasibility Study will begin shortly after the grant funds have been made available through a contract. In this proposal, it is considered that September 2002 would be a likely starting date. The Feasibility Study would be completed within eight months from the start.

The individual tasks and deliverables for the Northside Diversion Dam Fish Passage Feasibility Study are identified below. A summary of the tasks, start and finish dates, linkages, and other comments are included in **Table 2**.

Table 2: Task Schedule of the Northside Diversion Dam Fish Passage Feasibility Study

Task / Subtask No.	Descriptive Title	Start Date (mo/yr)	Due Date (mo /yr)
Task No. 1	Project Management, Kickoff meeting, and Site Visit	September '02	April '03
Subtask 1.1	Project Management	September '02	April '03
Subtask 1.2	Kickoff Meeting and Site Visit	September '02	November '02
Task No. 2	Develop Project Alternatives	September '02	December '02
Task No. 3	Data Collection and Development of Design Criteria	October '02	February '02
Subtask 3.1	Geology and Soils	November '02	January '03
Subtask 3.2	Hydrology and Water Quality	October '02	December '02
Subtask 3.3	Project Operational Requirements	September '02	December '02
Subtask 3.4	Topographical/Bathymetry Survey	October '02	December '02
Subtask 3.5	Vegetation and Wildlife-Environmental Documentation	November '02	January '03
Subtask 3.6	Fisheries	November '02	January '03
Subtask 3.7	Cultural Resources	October '02	December '02
Task No. 4	Conceptual Design	December '02	February '03
Task No. 5	Feasibility Report	February '03	April '03

Task 1 – Project Management and Meetings with Site Visit

Subtask 1.1---Project Management

The Feasibility Study will require various actions related to management of the project. The work plan will be prepared that will include the scheduling of specific work areas that may be prerequisite to other tasks.

There will be meetings with the regulatory agencies on the criteria of the facilities and other related matters. In addition there are monthly and periodic reports of the activity on each task. These reports will be used as deliverables to CALFED and other agencies.

Subtask 1.2---Kickoff Meting and Site Visit

A kickoff meeting and site visit will be held with Orland Unit Water Users' Association landowners and directors and the consulting engineers to review the CALFED contract and determine the alternatives that will be examined in the Feasibility Study. A field visit will be made by the representatives of OUWUA and the contracted engineer to review site conditions, available information, and site layout.

Included in this task are up to seven meetings with the US Fish and Wildlife Service (USF&WS), the Corps of Engineers (COE), U.S. Bureau of Reclamation (USBR), CALFED, California Department of Fish and Game (CDFG), and the National Marine Fisheries Service (NMFS). The objective of these meetings is to obtain agency input and to finalize design criteria. Follow-up meetings will be held to make periodic reports,

discuss issues of differences and any comments on the draft Feasibility Report. During these meetings, the financing of the potential environmental documentation and final engineering including construction will also be a subject of discussion.

Task 2 – Develop Project Alternatives

Approximately four alternatives will be selected for full evaluation in the Feasibility Report. The alternatives will consist of alternatives presented at the kickoff meeting and/or other alternatives. The alternatives will include at least two types of fish ladder structures, alternative water supplies, and a no action alternative. These alternatives will include complete O&M and capital cost comparisons. These alternatives will be evaluated to the extent of determining the quantity of sediment control, performance of the fish ladder, impact on the channel capacity, and impact on anadromous spawning fish. The design of the fish passage facilities will be selected for economy of O&M costs, construction costs, feasibility of meeting water requirements of the landowners, and benefits to fish populations.

Task 3 – Data Collection and Development of Design Criteria

Under this task preliminary geotechnical, hydrologic, water quality, project operation, existing facilities, topographical, vegetation and wildlife, fisheries, and cultural resources information will be reviewed or obtained as necessary to complete the work for the Feasibility Study. A preliminary set of design criteria will be developed based on review of this data including identification of additional data needs.

Current data will be obtained from the Corps of Engineers, Department of Water Resources, U.S. Bureau of Reclamation, or other sources. The data will be summarized and the consulting engineer will identify the additional data acquisition that will be necessary. Irrigation requirements of OUWUA and other operational requirements will be examined. Topographical and bathymetry data will be collected to determine project constraints such as water depths and dredging quantities, locations, and frequencies.

Analyses of the vegetation and wildlife, fisheries, and cultural resources will be performed. A field reconnaissance for vegetation and wildlife existing within the project area will be provided, including a species list observed during a site visit and a search for special status species. The fishery data to be collected will include temporal and spatial timing of the species migrating and size of the fish migrating. Also, this task will include a brief cultural resources review to comply with Section 106 of the National Historic Preservation Act (NHPA).

Task 4 -Conceptual Design

This task will involve determination of the design criteria for the alternatives for fish passage, including fisheries, project requirements, structure types, sizing criteria, and operation. After the geotechnical, topographical, and bathymetry survey data collection is completed and the design criteria have been established, conceptual designs and cost estimates for each alternative will be developed.

Task 5 -Feasibility Report

A draft Feasibility Report will be written to summarize Tasks 1 through 4. The report will list the design criteria, describe conceptual designs, costs, and the advantages and. disadvantages of each alternative. A recommendation will be made as to the feasibility of installing a fish screen and/or fish ladder. The alternatives will be evaluated using criteria including capital costs, annual operation and maintenance, biological effectiveness, ease of construction, and design limitations. After OUWUA board members and staff have reviewed and approved the draft, copies will be distributed to the appropriate agencies. Relevant comments will be incorporated into a final Feasibility Report.

APPLICABILITY TO CALFED ERP AND SCIENCE GOALS AND IMPLEMENTATION PLAN AND CVPIA PRIORITIES

ERP, Science Program, and CVPIA Priorities:

CALFED ERP Goals:

This project will help CALFED achieve the following ERP Strategic Goals:
Goal 1, **Achieve recovery of at-risk native species**, specifically spring-run, fall- and late fall-run Chinook salmon 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 conditons.
Goal 2, **Rehabilitate natural processes, with minimal ongoing human intervention,** specifically contribution to fish passage by conducting a Feasibility Study for a fish ladder on the Northside Diversion Dam.
Goal 4, Habitats, potential installation of a fish screen will protect the habitat of the target species by decreasing the likelihood of entrainment in diversion facilities.

CALFED Science Program: This project will advance CALFED's achievement of its Science Program Goal of building on a body of knowledge to improve the effectiveness of restoration programs. The knowledge gained will be embodied in a Feasibility Study that will be unbiased, relevant to fish passage in Stony Creek and a collection of existing data. Performance measures are established to ensure timely completion of the project and accurate reporting.

CALFED Implementation Plan Multi-Regional and Regional Priorities:

REGIONAL IMPLEMENTATION– Sacramento Valley Region
SR-2: This project specifically addresses restoring fish habitat and fish passage, particularly for spring-run chinook salmon and steelhead trout, by conducting passage studies. – *Facilities improvements and fish passage programs.*

CVPIA Priorities:

CVPIA Priorities: This project address priorities/considerations for spring-run, winter-run Chinook salmon, winter-run Chinook salmon, steelhead trout, and their associated habitats. 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 addresses fish passage in Lower Stony Creek. The Feasibility Study will examine ways to improve the spawning success and survival of fall, late-fall, and spring-run chinook salmon and steelhead.
- *Improve the opportunity for adult fish to reach their spawning habitat in a timely manner:* This Feasibility Study will study ways to increase the opportunity for adult anadromous fish to reach their natural spawning and rearing habitat in Stony Creek.

Relationship to Other Ecosystem Restoration Projects:

Many native fish species use the lowermost reach of Stony Creek, below Highway 45, at its confluence with the Sacramento River for rearing from fall through early summer when water is suitably cool. The visions is to maintain and improve valuable aquatic and terrestrial habitat types by restoring upstream areas to improve system integrity and increase habitat complexity at the confluence. (CALFED, ERPP, Vol. II, 1999 p. 231)

Request for Next-Phase Funding:

N/A

Previous Recipients of CALFED or CVPIA funding:

Orland Unit Water Users' Association was approved for a CALFED Water Use Efficiency Grant in 2001 (ID No. 23, Regional Water Use Efficiency Project). This grant will be for a feasibility study that will include benefits of 25,000 AF of flow-enhanced conservation, contribution toward Quantifiable Objectives, and district flexibility. The grant contract has not yet been executed.

System-Wide Ecosystem Benefits:

To reach the habitat goals of the Ecosystem Restoration Plan and the Anadromous Fish Restoration Plan for all salmonid species, it is necessary to determine the extent to which these goals are met by providing upstream passage to the four-mile stretch of lower Stony Creek between the North Diversion Dam and Black Butte Dam. If a fish passage facility is determined to be feasible and necessary, it will provide connectivity to upstream spawning and rearing habitat in this four-mile stretch and provide a valuable link to the downstream restoration efforts and upper watershed activities.

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.

COST

Budget and Cost Sharing:

A detailed budget for this project is included in the application forms of the proposal. No cost sharing partners have been identified for the completion of the feasibility study. However OUWUA is willing to 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.

LOCAL INVOLVEMENT

Public Outreach Plan

Key Stakeholders: Orland Unit Water Users' Association (operator), Association members, U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, National Marine Fisheries Service, Department of Fish and Wildlife, California Department of Fish and Game, Butte and Glenn County Boards of Supervisors, and adjacent landowners (i.e. Eastby Estate, Delbert Reimers, Black Butte Ranch).

Strategy: Project outreach is structured to maximize the participation of key stakeholders in the process of designing and accepting fish passage alternatives. Identified stakeholders will be invited to attend planned and scheduled meetings for the purpose of providing input and developing the Feasibility Study. Orland Unit Water Users' Association will utilize various tools, such as letters, personal and by phone contact that will help ensure regular attendance by these key stakeholders. Regular attendance to these meetings will increase the stakeholder level of knowledge about the project and will help to ensure long-term operations and maintenance of the fish passage facilities.

Outcome: (1) Consistent communications and information stream to local stakeholders, agency representatives, interested groups and individuals regarding project feasibility. (2) A more acceptable and comprehensive Feasibility Study that has incorporated cumulative knowledge and resources of the stakeholders involved.

COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

Orland Unit Water Users' Association is willing to accept the standard terms and conditions for the state and federal contracting. The applicant has review the terms and conditions and is agreeable to the language used in Attachment D and E.

LITERATURE CITED

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, Projects Upstream on Merced and San Joaquin Rivers, Personal knowledge of Fish and Game staff.

McMillen, M.D., and W. Porter, White River Fish Screen Project Planning and Design. Proceedings of Waterworks '97, 1997.

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

APPENDIX

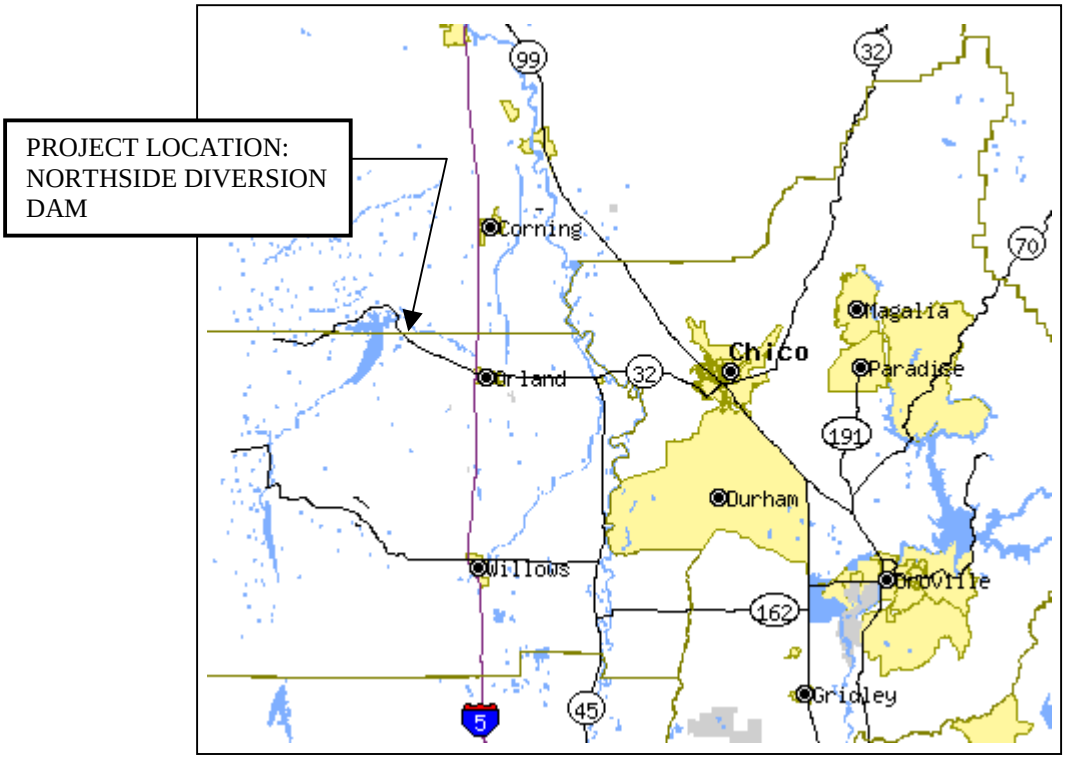

Figure 1: Project Location