

2004 Water Use Efficiency Proposal Solicitation Package

APPENDIX A: Project Information Form

Applying for:

Urban

X Agricultural

1. (Section A) **Urban or Agricultural Water Use Efficiency Implementation Project**

(a) implementation of Urban Best Management Practice, # _____

X (b) implementation of Agricultural Efficient Water Management Practice, # _____

(c) implementation of other projects to meet California Bay-Delta Program objectives, Targeted Benefit # or Quantifiable Objective #, if applicable

(d) Specify other: _____

2. (Section B) **Urban or Agricultural Research and Development; Feasibility Studies, Pilot, or Demonstration Projects; Training, Education or Public Information; Technical Assistance**

X (e) research and development, feasibility studies, pilot, or demonstration projects

(f) training, education or public information programs with statewide application

(g) technical assistance

(h) other

3. Principal applicant (Organization or affiliation):

Western Shasta Resource Conservation District

4. Project Title:

Cow Creek Water Use Efficiency Projects

5. Person authorized to sign and submit proposal and contract:

Name, title

Mary Schroeder, District Mgr

Mailing address

6270 Parallel Road

Anderson, CA 96007

Telephone

530-365-7332

Fax.

530-365-7271

E-mail

mary@westernshastarc.org

6. Contact person (if different):	Name, title.	same
	Mailing address.	_____

	Telephone	_____
	Fax.	_____
	E-mail	_____

7. Grant funds requested (dollar amount): <i>(from Table C-1, column VI)</i>		1,351,011
8. Applicant funds pledged (dollar amount):		76,058
9.Total project costs (dollar amount): <i>(from Table C-1, column IV, row n)</i>		1,427,069
10.Percent of State share requested (%) <i>(from Table C-1)</i>		95%
11.Percent of local share as match (%) <i>(from Table C-1)</i>		5%
12. Is your project locally cost effective? <i>Locally cost effective means that the benefits to an entity (in dollar terms) of implementing a program exceed the costs of that program within the boundaries of that entity.</i> <i>(If yes, provide information that the project in addition to Bay-Delta benefit meets one of the following conditions: broad transferable benefits, overcome implementation barriers, or accelerate implementation.)</i>		<input checked="" type="checkbox"/> (a) yes <input type="checkbox"/> (b) no

Broad Transferrable benefits

11. Is your project required by regulation, law or contract? (a) yes
 If no, your project is eligible. (b) no

If yes, your project may be eligible only if there will be accelerated implementation to fulfill a future requirement and is not currently required.

Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.

12. Duration of project (month/year to month/year): **12/05 to 11/08**
13. State Assembly District where the project is to be conducted: **2**
14. State Senate District where the project is to be conducted: **4**
15. Congressional district(s) where the project is to be conducted: **2**
16. County where the project is to be conducted: **Shasta**
17. Location of project (longitude and latitude) **40.66588 °N and 122.02689°W**
18. How many service connections in your service area (urban)?
19. How many acre-feet of water per year does your agency serve?

20. Type of applicant (select one):
- (a) City
 - (b) County
 - (c) City and County
 - (d) Joint Powers Authority
 - (e) Public Water District
 - (f) Tribe
 - (g) Non Profit Organization
 - (h) University, College

(i) State Agency

(j) Federal Agency

(k) Other

(i) Investor-Owned Utility

(ii) Incorporated Mutual Water Co.

(iii) Specify __Special District

21. Is applicant a disadvantaged community? If 'yes' include annual median household income.

(a) yes, \$34,335 median household income

(b) no

(Provide supporting documentation.)

Shasta County 2000 Census

**2004 Water Use Efficiency Proposal Solicitation Package
APPENDIX B: Signature Page**

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form has the legal authority to submit the proposal on behalf of the applicant;

There is no pending litigation that may impact the financial condition of the applicant or its ability to complete the proposed project;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant;

The applicant will comply with all terms and conditions identified in this PSP if selected for funding; and

The applicant has legal authority to enter into a contract with the State.

_____	Mary Schroeder, District Manager	January 10, 2004
Signature	Name and title	Date

3. STATEMENT OF WORK, SECTION 1: RELEVANCE AND IMPORTANCE

GOALS AND OBJECTIVES OF THE PROJECT

The Western Shasta Resource Conservation District (WSRCD), in conjunction with the Cow Creek Watershed Management Group (CCWMG), completed a Watershed Assessment for the Cow Creek Watershed in 2001. The Watershed Assessment identified action options to improve the Cow Creek Watershed, including conducting hydrologic studies and/or channel evaluations of primary tributaries to identify specific areas requiring restoration activities; improve water conditions for fish; determine the impact of lack of screens on diversions; create treatment zones for uptake of nutrients and pathogens resulting from livestock and irrigation runoff; identify factors contributing to elevated water temperatures, such as irrigation return flows, vegetation changes, and diversion of stream flow; rank and develop a program to assist landowners to install fish screens on existing diversions; investigate measures to increase flows in Cow Creek; and increase irrigation efficiency. The CCWMG has worked hard to get landowner participation and support for action items identified in the Watershed Assessment.

The primary benefit of these projects will be the cooperation of these initial landowners and success on the first projects. Past regulatory conflicts over land use have created a climate of distrust of government agencies by local landowners. However, recent efforts of the WSRCD and CCWMG have resulted in a better understanding of the goals of restoration programs. The landowners who are willing to participate in this project were brought together through two years of meetings and discussions. Although many other landowners are interested in participating, they will need to see successful implementation of the proposed projects before they are willing to implement projects on their own.

The project includes **two fish screening demonstration projects, one ditch piping feasibility study, two ditch piping demonstration projects and one tailwater collection/reuse demonstration project**. These types of projects, once implemented provide a basis for other willing landowners to follow to further implement the goals water management and improving water quality and quantity.

Fish Screens

Fish passage impediments have been identified as one of the key factors leading to anadromous fishery declines on Sacramento River tributaries. In-stream diversion dams act as passage impediments for both upstream adult migration as well as downstream juvenile migration. These diversions, if unscreened, can cause direct mortality of outmigrating juvenile fish by entraining them in off-channel canals and ditches.

None of the 41 existing agricultural diversions with allotments over 1.0 cubic feet per second (cfs) located below natural barriers in the Cow Creek Watershed are currently known to be screened, according to Department of Fish and Game (DFG) and National Marine Fisheries Service (NMFS). Two willing landowners

have volunteered to participate in installing fish screens on their diversions to provide the necessary precursors for future implementation of fish screen projects.

Irrigation Piping/Lining (feasibility study & demonstration project)

The project involves conducting one feasibility study and two demonstration projects for piping/lining of agricultural ditch irrigation systems within the Cow Creek Watershed. The ditch systems range in capacities from approximately 2 cfs to 28 cfs and range in length from 1 mile to 7.5 miles. Preliminary estimates indicate that ditch water losses may be over 50%.

Tailwater Collection Pond

The 2002 CWA Section 303(d) List of Water Quality Limited Segments published October 15, 2002 lists Clover Creek (Fecal Coliform along 11 miles), Little Cow Creek (Cadmium, Copper and Zinc along 2.7 miles), Oak Run Creek (Fecal Coliform along 5.6 miles), and South Cow Creek (Fecal Coliform along 3.8 miles). Studies by the Regional Water Quality Control Board (RWQCB) in 1996 and by Shasta College in 2000 identified limiting elements in the watershed specific to anadromous fish resources. The 1996 study by the RWQCB found potential limiting factors of high temperature and low flow in the lower watershed area. In addition, the study identified high concentrations of fecal coliform in two of the five main tributaries. The project will address these two leading issues facing water quality in the Cow Creek Watershed, increased nutrients, temperature and fecal coliform concerns.

The tailwater collection pond scope of work will include: performing topographic survey of the area at the pond location; performing hydraulic study to determine exact size of pond required; acquiring permits required for construction; preparation of design plans and specifications for the ponds for submission to Shasta County for their approval; providing an engineers cost estimate; assisting WSRCD in bid review and construction inspection activities; and construction of the tailwater collection ponds.

HOW THE PROJECT CONTRIBUTES TOWARD OR SUPPORTS THE CALIFORNIA BAY-DELTA PROGRAM GOALS

The proposed feasibility study will provide information about the efficiency of an existing water diversion conveyance system in the Cow Creek Watershed and the potential for capital improvements that will improve efficiency. The demonstration projects (piping and tailwater) will document the increased water savings and improved water quality. The screening projects will restore fish habitat and fish passage.

This is a critical first step in order to move forward with projects that could provide benefits to aquatic habitats in Cow Creek and help meet CALFED objectives.

Reduce Existing Irrecoverable Losses

The overall volume of water in the creek will potentially increase by piping existing earth ditches and eliminating the loss due to infiltration and evaporation. By negating these losses less water will be required to be diverted and/or increased flows through return water not lost in transmission.

Achieve Multiple Benefits

Piping will allow for increased stream flows in Cow Creek and tailwater collection/reuse will also provide increased water quality.

Improving Water Quality

The proposed feasibility study and demonstration projects will improve water quality by increasing in-stream flows in Cow Creek. Potential water quality improvements include decreases in water temperatures, increases in dissolved oxygen, and dilution of nutrients and bacteria.

Providing Environmental Benefits

The proposed feasibility study and demonstration project could potentially lead to projects that will improve aquatic habitat for salmon and steelhead and other aquatic species through increases in stream flows in Cow Creek and its tributaries.

CALFED Quantifiable Objectives

The proposed feasibility studies could potentially lead to projects that would be consistent with CALFED Targeted Benefits # 5 (Provide flow to improve aquatic ecosystem conditions in Cow Creek) and # 6 (Provide flow to improve aquatic ecosystem conditions in the Sacramento River below Keswick Dam) identified in Table A.1.1 of the Draft Details of Quantifiable Objectives paper. The paper identifies the reduction in canal seepage through canal lining or piping as a possible action for Targeted Benefit # 6.

The CALFED Ecosystem Restoration and Science Program, as well as Central Valley Project Improvement Act Priorities include: *“Restore fish habitat and fish passage, particularly for spring-run chinook salmon and steelhead trout, and conduct passage studies”* and *“Continue major fish screen projects and conduct studies to improve knowledge of implications of fish screens for fish populations.”* This project will improve and facilitate future improvement of downstream fish passage for several harvestable and at-risk anadromous fish, including fall-run and late-fall-run Chinook salmon and steelhead trout.

The Ecosystem Restoration Program Strategic Goals focus on at-risk species, ecosystem processes and biotic communities, harvestable species and habitats. This project will help achieve recovery of steelhead, Sacramento fall-run Chinook salmon, and late-fall Chinook salmon. These species all strongly affect the operation of the State Water Project and the Central Valley Project diversions in the south Delta. Recovery of these species will help address conflict between protecting at-risk

species and providing reliable water supplies for urban and agricultural uses, one of the major factors that led to the formation of CALFED.

ESTIMATES OF TOTAL EXPECTED WATER SAVINGS AND EXPLANATION FOR ALL ASSUMPTIONS, METHODOLOGIES, AND COMPUTATIONS USED TO ARRIVE AT THE VALUES

The estimated water savings for piping will be evaluated during the preparation of the feasibility studies that are being prepared in 2004 under the CALFED Watershed Restoration Grant. The water savings will also be evaluated during the feasibility study proposed herein. Field measurements of losses within the ditches will be conducted. Sampling of the water entering and leaving the tailwater ponds will be conducted to determine the water quality improvements.

Monitoring of all of the projects will be conducted to verify and determine the water savings, water quality improvement and fish passage.

4. STATEMENT OF WORK, SECTION 2: TECHNICAL/SCIENTIFIC MERIT

The project includes technically proven means of providing improved water quality, water supply and ecosystem restoration. Fish screens, piping/lining of irrigation ditches, tailwater collection ponds, are projects that have been proven to provide watershed enhancement in areas outside of the Cow Creek Watershed. Existing DFG and NMFS criteria will be utilized for design of the fish screens. Natural Resources Conservation Service (NRCS) designs will be utilized for design of the tailwater collection ponds.

As this project will use the best available technology provided by the various governmental agencies for the design and construction, it will provide effective implementation of the CALFED Watershed Program Plan goals to improve water quality, water supply, and ecosystem quality. All methods used on this project, except the dedication of water for in-stream use, have been proven successful on other projects within Northern California. These will be the first projects of this type in the Cow Creek Watershed, and will provide a successful example for other landowners to follow.

METHODS, PROCEDURES, EQUIPMENT, AND FACILITIES

Assuming a 12-15-05 start date:

TASKS	SCHEDULE
1. Landowner Agreements	12-15-05 to 1-31-06
2. Formation of Technical Advisory Committee	12-15-05 to 1-30-06
3. Community Outreach & Education	12-15-05 to 9-30-08
4. Monitoring Plan	1-1-06 to 5-30-06
5. Engineering Design	4-30-06 to 9-30-06

6. Pre-project monitoring	5-30-06 to 9-30-06
7. Construction	1-30-07 to 12-31-07
8. Monitoring	12-31-07 to 7-31-08
9. Draft Final Project Report	8-1-08 to 8-15-08
10. Final Project Report	9-1-08 to 9-15-08
11. Draft Grant Report	9-1-08 to 9-30-08
12. Final Grant Report	11-1-08 to 11-30-08

DELIVERABLES

1. Landowner agreements.
2. List of Technical Advisory Committee members; agenda, minutes, sign in sheets from TAC meetings.
3. Annual community tours, newsletters, press releases, meeting announcements, agendas, minutes, sign in sheets
4. Monitoring plan
5. Engineering designs
6. Pre-project monitoring report
7. As-built engineering designs, bid packets, pre-bid meeting sign in sheets, bid record sheets, contractor agreements.
8. Monitoring reports
9. Draft project report.
10. Final project report.
11. Draft grant report.
12. Final grant report.

PRELIMINARY PLANS AND SPECIFICATIONS AND CERTIFICATION STATEMENTS FOR CONSTRUCTION PROJECTS

Plans and specifications for each project will be prepared as a part of this grant. The projects will include design and construction. No plans or specifications will be prepared as a part of the feasibility studies.

ENVIRONMENTAL DOCUMENTATION

Fish screens will require DFG 1603 Permit, ACOE 404 Permit, RWQCB 401 Water Quality Certification, and Shasta County Grading Permit. CEQA will be required through these processes. Either Shasta County or DFG will serve as lead agency.

Tailwater ponds will require a Shasta County Grading Permit. If the ponds are located in close proximity to the creek, it is possible that DFG, ACOE and RWQCB permits may be required. Shasta County will serve as lead agency.

Acquisition of regulatory permits will be incorporated into the development of the CEQA/NEPA documents, with the understanding that permits will not be issued until environmental documentation is completed and the lead agency issues the Notice of

Determination and/or Finding of No Significant Impact. Permits required for the project are outlined in Table 1 below. The landowner access agreement will be secured for this project and will be on file at the WSRCD office; no regulatory permits have been acquired. Permits identified as “required” are those that must be obtained to undertake a specific action. Permits identified as “potentially required” depend on site-specific information that will be gathered in the feasibility or CEQA/NEPA portion of the project.

Table 1 Permits Required	
Agency Permit	Demonstration Project
Landowner Access Agreement	Required
CEQA Documentation	Required
NEPA Documentation	Potentially Required
DFG 1600 Agreement	Required
RWQCB 401 Certification	Required
USACE 404 Permit	Required
California ESA Review (DFG)	Potentially Required
Federal ESA Consultation (NMFS)	Required for 404 Permit
Federal ESA Consultation (FWS)	Potentially Required for 404 Permit
State Lands Commission Permits	Potentially Required
State Reclamation Board	Potentially Required

5. STATEMENT OF WORK, SECTION 3: MONITORING AND ASSESSMENT

MONITORING AND EVALUATION

Monitoring for this project will be conducted to address both structural and biological performance measures for the demonstration projects. The projects will be monitored twice annually, at the beginning and end of each operating season, until the end of the grant following construction. At that time additional funds will be sought to continue monitoring. Monitoring visits for the screens will be scheduled to occur when stream flows and temperatures are in the range that juvenile fish are likely to migrate through the area (spring). In addition, a long-term maintenance agreement will be executed between the landowner and the WSRCD to ensure that the structure is properly operated and maintained.

Structural monitoring – During construction, WSRCD and VESTRA Resources inspectors will monitor contractor performance to ensure that screens are built per the approved plans and specifications, meeting DFG and NMFS criteria and all other applicable standards prior to transferring the facilities to the owners. Once the screens are operational, WSRCD will conduct two monitoring visits per year for two years to ensure that the structures are functioning properly. Monitoring evaluations will include sweeping velocities and approach velocities for the screens.

Biological monitoring – The diversion ditch will be observed a minimum of twice per year to ensure that there is no evidence of entrained juvenile fish.

Monitoring for the tailwater collection/reuse pond will include:

- Water temperatures will be monitored continuously during irrigation season at two locations (inlet and outlet). Automatic loggers will be placed at these two locations.
- Water temperatures will be monitored weekly at three-foot intervals in the pond to permit a description of the thermocline as it changes throughout the season.
- Data will be analyzed to establish the relationship between temperature of incoming irrigation water and the water released to the creek.

6. QUALIFICATIONS OF THE APPLICANTS AND COOPERATORS

1. Resumes of the project managers are attached to the end of the proposal.
2. External cooperators include biologists and scientists from the Department of Fish and Game, Regional Water Quality Control Board, and Department of Water Resources as participants on the Technical Advisory Committee.
3. WSRCD has not participated in any previous water use efficiency grant projects.
4. WSRCD is in a disadvantaged community, Shasta County, which has a median household income of \$34,335 per the Employment Development Department Labor Market Information from the 2000 Census.

7. OUTREACH, COMMUNITY INVOLVEMENT AND ACCEPTANCE

Annual field tours of the project will be conducted in order to increase participation in future screen projects with other landowners in the watershed. Notices of the field tours, as well as articles about the project, will be included in the Cow Creek Watershed News section of the *Watersheds & You* Newsletter, currently produced and distributed by the WSRCD, and distributed to local media.

8. INNOVATION

The project includes technically proven means of providing improved water quality, water supply and ecosystem restoration. Fish screens, piping/lining of irrigation ditches, tailwater collection ponds, are projects that have been proven to provide watershed enhancement in areas outside of the Cow Creek Watershed. Existing DFG and NMFS criteria will be utilized for design of the fish

screens. Natural Resources Conservation Service (NRCS) designs will be utilized for design of the tailwater collection ponds.

The fish screens will use a positive barrier fish screen consisting of a vertical-diagonal sloping plate fish screen with 3/32 openings as outlined by DFG requirements. The screen design will be approved by the members of the Technical Advisory Committee, including DFG and NMFS. Screen construction will take place within the diversion ditch, not the mainstream channel, thereby limiting the adverse stream impacts. Screen construction will occur outside of the irrigation season.

As this project will use the best available technology provided by the various governmental agencies for the design and construction, it will provide effective implementation of the CALFED Watershed Program Plan goals to improve water quality, water supply, and ecosystem quality. All methods used on this project, except the dedication of water for in-stream use, have been proven successful on other projects within Northern California. These will be the first projects of this type in the Cow Creek Watershed, and will provide a successful example for other landowners to follow.

9. BENEFITS AND COSTS

Project Budget – The budget includes planning/design/engineering by Vestra Resources, who developed this proposal for the Cow Creek Watershed Group and is working with WSRCD on a similar project in the watershed. Construction will be bid out to local contractors. WSRCD will work with Vestra on environmental compliance. Water quality monitoring will be done by a qualified biologist. Administration costs include the Project Manager, Project Coordinator, Lead Field Technicians who will work with consultants on monitoring and oversee all of the project work. A contingency is included only for the consultant, environmental compliance and construction. The overall contingency is 7.8%.

Part 3: Project Costs and Benefits Tables

A. Project Implementation Costs (Budget)

B. Annual Operations and Maintenance Costs

C. Total Annual Project Costs

D. Capital Recovery Factor

E. Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)

F. Project Annual Local Monetary Benefits

G. Project Local Monetary Benefits and Project Costs

H. Applicant's Cost Share and Description

A. PROJECT IMPLEMENTATION COSTS TABLE

APPLICANT: Western Shasta Resource Conservation District
Project Title: Cow Creek Water Quality Efficiency Projects

Table C-1: Project Costs (Budget)

	Category	Project Costs \$	Contingency % (ex. 5 or 10)	Project Cost + Contingency \$	Applicant Share \$	State Share \$	Life of investment (Years)	Capital Recovery Factor (Table C-4)	Annualized costs \$
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
	Administration (for initiation of project)								
	Salaries, wages	109,140		109,140		109,140			
	Fringe benefits	30,860		30,860		30,860			
	Supplies	15,000		15,000		15,000			
	Equipment	4,500		4,500		4,500			
	Consulting services	92,919	10,000	102,919		102,919			
	Travel	2,200		2,200		2,200			
	Other								
(a)	Total Administration Costs ¹	161,300	10,000	171,300		171,300			
(b)	Planning/Design / Engineering	115,000	10,000	125,000	3,000	122,000			
(c)	Equipment Purchases/Rentals/Rebates/Vouchers								
(d)	Materials/Installation/Implementation								
(e)	Implementation Verification								
(f)	Project Legal/License Fees	7,000		7,000		7,000			
(g)	Monitoring and Assessment	40,400		40,400	15,400	24,000			
(h)	Report Preparation	4,200		4,200	200	4,000			
(i)	Structures								
(j)	Land Purchase/Ease ment								

(k)	Environmental Compliance/Mitigation/Enhancement	42,700	4,000	46,700	5,000	41,700			
(l)	Construction	900,000	70,000	960,000					
(m)	Other (Specify) O&M Landowners	52,458		52,458	52,458				
(n)	TOTAL (=a+...+m)	1,323,069	104,000	1,427,069	76,058	1,351,011	NA	NA	
(o)	Cost Share Percentage	NA	NA	NA	(row n, column V/IV) x 100	(100 - row o, column V)	NA	NA	NA

1 (Excludes administration O & M costs)

B. Annual Operations and Maintenance Costs

Operations (1) (I)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
30,000	20,000	2,458	52,458

(1) Include annual O&M administration costs here.

C. Total Annual Project Costs

Annual Project Costs (1) (I)	Annual O & M Costs (2) (II)	Total Annual Project Costs (III) (I + II)

(1) From Table C-1, row (n) column (IX)

(2) From Table C-2, column (IV)

D. Capital Recovery Factor

(for a discount rate of 6%)

Life of Project (in years)	Capital Recovery Factor
1	1.0600
2	0.5454
3	0.3741
4	0.2886
5	0.2374
6	0.2034
7	0.1791
8	0.1610
9	0.1470
10	0.1359
11	0.1268
12	0.1193
13	0.1130
14	0.1076

Life of Project (in years)	Capital Recovery Factor
26	0.0769
27	0.0757
28	0.0746
29	0.0736
30	0.0726
31	0.0718
32	0.0710
33	0.0703
34	0.0696
35	0.0690
36	0.0684
37	0.0679
38	0.0674
39	0.0669

15	0.1030	40	0.0665
16	0.0990	41	0.0661
17	0.0954	42	0.0657
18	0.0924	43	0.0653
19	0.0896	44	0.0650
20	0.0872	45	0.0647
21	0.0850	46	0.0644
22	0.0830	47	0.0641
23	0.0813	48	0.0639
24	0.0797	49	0.0637
25	0.0782	50	0.0634

E. Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)

QUALITATIVE DESCRIPTION - REQUIRED OF ALL APPLICANTS ¹				QUANTITATIVE BENEFITS –(where data are available) ²
Description of physical benefits (in-stream flow and timing, water quantity and water quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct ³ , Indirect ⁴ or Both	Quantified Benefits (in-stream flow and timing, water quantity and water quality)
Bay-Delta: reduce irrecoverable losses, increased stream flows, increased water quality, improve aquatic habitat.	From 12-31-07 forward in the Sacramento River Watershed	30 years	Direct benefit to reduce irrecoverable losses, increase stream flow, increase water quality and improve aquatic habitat	Benefits will be determined through pre and pos-project monitoring. All data available show quantifiable benefits with these projects
Local: improve aquatic ecosystem conditions in the Cow Creek watershed	From 12-31-07 forward in the Cow Creek Watershed	30 years	Not Applicable	Same

¹The qualitative benefits should be provided in a narrative description. Use additional sheets to describe the benefits.

²The project benefits that can be quantified (i.e. volume of water saved or mass of constituents reduced) should be provided.

³Direct benefits are project outcomes that contribute to a CALFED objective within the Bay-Delta system during the life of the project.

⁴Indirect benefits are project outcomes that help to reduce dependency on the Bay-Delta system. Indirect benefits may be realized over time.

F. Project Annual Local Monetary Benefits

ANNUAL LOCAL BENEFITS	ANNUAL QUANTITY ⁴	UNIT OF MEASUREMENT	ANNUAL MONETARY BENEFITS
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			(Thousands \$/yr)
(a) Avoided Water Supply Costs (Current or Future Sources)			
(b) Avoided Energy Costs			
(c) Avoided Waste Water Treatment Costs			
(d) Avoided Labor Costs			
(e) Other (describe)			
(f) Total [(a)+(b)+(c)+(d)+(e)]	NA	NA	

⁴ Examples include avoided cost of current water supply (or future supply if available), energy savings, labor savings, waste water treatment.

F. Project Local Monetary Benefits and Project Costs

(a) Total Annual Monetary Benefits (Table C-6, row(f))	\$
(b) Total Annual Project Costs (Table C-3, column III)	\$

G. Applicant's Cost Share and Description

Applicant's cost share (%): (from Table C-1, row o, column V)	5%
Describe how the cost share (based on relative balance between Bay-Delta and Local benefits) is derived (see Section A-7 for description). Provide description in a narrative form.	
The cost share is from Technical Advisory Committee members on environmental compliance and planning, landowner time for monitoring and assessment, assistance from the Cow Creek Watershed Group on report writing,	

APPENDIX

A. Bios of key participants

B. Map of Cow Creek Watershed

C. Maps of project locations