

2005 Water Use Efficiency Proposal Solicitation Package

Proposal Part One:

A: Project Information Form

Applying for (select one):

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

- Urban Agricultural
- (a) implementation of Urban Best Management Practice,

- (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

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

- (d) Specify other: _____
- (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)

Placer County Water Agency

4. Project Title:

Heritage Center Water-Wise Irrigation Demonstration Site Project

5. Person authorized to sign and submit proposal and contract

Name, title David Breninger,
General Manager
Mailing address PO Box 6570
Auburn, CA 95604
Telephone (530) 823-4860
Fax (530) 823-4960
E-mail dbreninger@pcwa.net

6. Contact person (if different):

Name, title John Kingsbury,
Director of Customer Services
Mailing address PO Box 6570
Auburn, CA 95604
Telephone (530) 823-4870
Fax (530) 823-4897
E-mail jkingsbury@pcwa.net

7. Funds requested (dollar amount) (from Table C-8, column II)

\$ 458,600

2005 Water Use Efficiency Proposal Solicitation Package
Proposal Part One:
A: Project Information Form (continued)

8. Applicant funds pledged (dollar amount): _____ \$ 489,800

9. Total project costs (dollar amount (from Table C-1, column II, row I) _____ \$ 948,400

10. Is your project locally cost effective? (a) yes

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. (b) no

(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.)

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

If yes, the project is eligible if it is not currently required? Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.

**2005 Water Use Efficiency Proposal Solicitation Package
 Proposal Part One:
 A: Project Information Form (continued)**

12. Duration of project (month/year to month/year): January 2006 to December 2008
13. State Assembly District where the project is to be conducted: 4
14. State Senate District where the project is to be conducted: 1
15. Congressional district(s) where the project is to be conducted: 4
16. County where the project is to be conducted: Placer
17. Location of project (longitude and latitude) Latitude 38 degrees 53 minutes and 14 seconds
 Longitude 121 degrees 06 minutes and 04 seconds
18. How many service connections in your service area (urban)? N/A
19. How many acre-feet of water per year does your agency serve? 105,996 AF
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 _____

2005 Water Use Efficiency Proposal Solicitation Package
Proposal Part One:
A: Project Information Form (continued)

21. Is applicant a disadvantaged community? If 'yes' include annual median household income. (a) yes, _____ median household income (b) no

(Provide supporting documentation.)

A complete proposal consists of the following:

- Project Information Form (Appendix A)
- Signature Page (Appendix B)
- Statement of Work, Section One: Relevance and Importance
- Statement of Work, Section Two: Technical/Scientific Merit, Feasibility
- Statement of Work, Section Three: Monitoring and Assessment
- Qualifications of the Applicants and Cooperators
- Outreach, Community Involvement, and Acceptance
- Innovation
- Benefits (supporting documentation)
- Costs (Tables in Appendix C and supporting documentation)

2005 WATER USE EFFICIENCY PROPOSAL SOLICITATION PACKAGE

**Proposal Part One:
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.

Signature David A. Breninger, General Manager

Date

2005 WATER USE EFFICIENCY PROPOSAL SOLICITATION PACKAGE

Proposal Part Two A: Project Summary

Executive Summary

The Placer County Water Agency (PCWA) seeks grant funding to transform the beautiful Victorian home site shown below into a state-of-the-art agricultural education and training resource center. A former farm previously owned by a local family in Ophir, California (located just minutes from Auburn in the foothills east of Sacramento), this heirloom property was purchased by PCWA in June 2004. The farm uses the common practice of raw water canal delivery to irrigate orchard trees. PCWA wishes to preserve this ideal historical setting and convert its canal network into a model agricultural water measurement demonstration.



Figure 1. Heritage Center Victorian Home

The property, which would be known as the Heritage Center, envisions an approximately 2.5-acre Water-Wise Irrigation Demonstration Site Project. Over one-acre will contain demonstration landscaping, with additional space for public workshops, and a California Irrigation Management Information System (CIMIS) station was already purchased for this site in September 2004. Funding through this grant would provide for a real-time display area in the renovated barn along with model demonstration areas of both evapotranspiration-based irrigation controllers (ET controllers) and neutron probes to provide hands-on training for growers to learn advanced irrigation control technologies. Training would incorporate the orchard tree crop and landscaped planting demonstration areas. The Department of Water Resources, CIMIS and University of California, Cooperative Extension (UCCE) of

Placer-Nevada County among other partners are both committed and excited to provide on-site training workshops to educate agricultural growers on best water management practices. PCWA delivers over 70,000 AF to more than 3,900 raw water customers and would promote this site throughout the unique foothills region and draw statewide appeal to its workshops through expert presenters and tours of agricultural water measurement and irrigation equipment model demonstration areas.

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

This project will help meet the Proposition 50 priority to provide multiple CALFED benefits and be transferable to other parts of the State, as described in this section.

The goal of the project is to increase the efficiency of outdoor water use through providing education and information to the general public and specific training and technical weather data to water customers. This project will address agricultural water use efficiency, remote sensing, and other agricultural and urban outdoor water use technologies and practices, plus provide a demonstration garden. A significant portion of PCWA's total water supply is used for outdoor purposes. This project will be a major step in helping to enhance the efficiency of the use of the outdoor portion of PCWA's total water demand. This project would be transferable to other parts of the State because of the new technologies being used, the education and training aspects, plus the experiences gained from such a resource center.

The project is needed to meet local, regional, Bay-Delta, State, and Federal water issues. The main local water issues in western Placer County include continuing to provide a reliable water supply to meet growing demands. The main water issues in the greater Sacramento region are protection of the lower American River, stabilization of the groundwater basins, water conservation and reliable water supply. This project is complementary to addressing these local and regional issues because water use efficiency is a common theme.

This project will help to meet the needs of the main Bay-Delta, State, and Federal water issues, which are primarily focused on meeting the CALFED objectives through 11 program elements. The mission of CALFED is to implement a plan that will restore the health and improve the water management of the Bay-Delta System. The CALFED objectives are water supply reliability, levee system integrity, water quality, and ecosystem restoration. The element that is most relevant to this project is water use efficiency. This project also provides benefits to several other program elements, including ecosystem restoration and water supply reliability by resulting in more efficient use of surface water that is diverted upstream of the Bay-Delta.

This project meets several key goals of the water use efficiency program element. It reduces existing irrecoverable losses to the atmosphere by targeting outdoor water use. It achieves multiple benefits by targeting several water conservation best management practices (BMPS), providing more water for other uses, and improving in-stream flows and Bay-Delta water quality. The project will be implemented locally and provide both local and regional benefits. The project is incentive based in that it will provide planning and technical assistance to local outdoor water users. It will help expand the usefulness and market penetration of the other ongoing BMPs that target outdoor water use.

The project is consistent with current water resources planning in the area. PCWA is currently preparing an integrated water resources plan that will define the future water demands and water supplies, including surface water, groundwater, and recycled water. In addition, PCWA is preparing a detailed economic analysis of the water use efficiency BMPs. PCWA is also participating in the preparation of an integrated regional water management plan with the Sacramento Regional Water Authority and most other regional water purveyors. As a signatory of the Water Forum Agreement, PCWA is also committed to continue to implement its water conservation commitments. This project is complementary to these local and regional planning efforts.

PCWA has implemented water demand management activities as required by the Water Forum Agreement and the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) and described in their year 2000 urban water management plan. The implementation of these water conservation best management practices (BMPs) are documented in their regular reporting to the California Urban Water Conservation Council (CUWCC) and the Water Forum.

This project would initiate the first agricultural education and training center in the greater Sacramento region. This project would help to further increase the current implementation level of several ongoing BMPs (Large Landscape Conservation, Public Information, School Education).

Statement of Water Issues

Placer County is currently undergoing tremendous population growth. In 2000, Placer County had a population of 248,399, an increase of approximately 44 percent over 1990. Strong population growth continued in Placer County between 1999 and 2003, with a growth rate of nearly 16 percent. This growth is resulting in unprecedented demand for water.

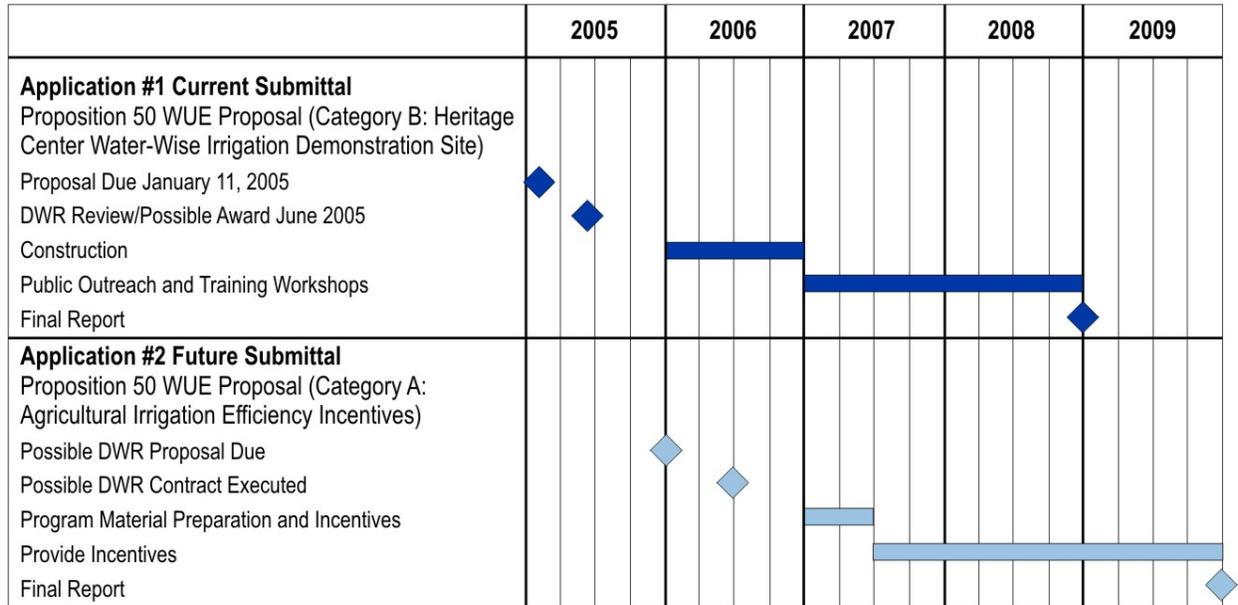
Studies have shown that the use of drought-tolerant landscapes can drastically reduce water use compared to traditional landscapes such as:

- ✓ East Bay Municipal Utility District found that water conserving landscapes used 42 percent less water than traditional landscapes (CA Dept. of Water Resources, 1993).
- ✓ Another study demonstrated savings of 30 to 80 percent with xeriscapes (Denver Water Dept., 1987).
- ✓ According to water use figures kept by the Northridge Water District on properties with metered landscapes, water savings with drought-tolerant landscaping averaged 54 percent lower than standard landscaping over a seven-month period.
- ✓ Even with existing high water-use landscapes, many residential landscapes are irrigated at 20 to 40 percent above their evapotranspiration rates (CA Dept. of Water Resources, 1984).

This project will help PCWA to achieve more efficient use of the portion of its water supply that is used outdoors.

PCWA envisions submission of future Category A proposal to help leverage these training opportunities into action through incentive programs. The diagram below illustrates this two proposal plan, both the current proposal to create the foundation and a future second funding proposal for capturing additional future water savings. An option to extend training into 2009 may be included in the second proposal.

Figure 2. Two Phase Plan for Submission of Proposition 50 Grant Proposals



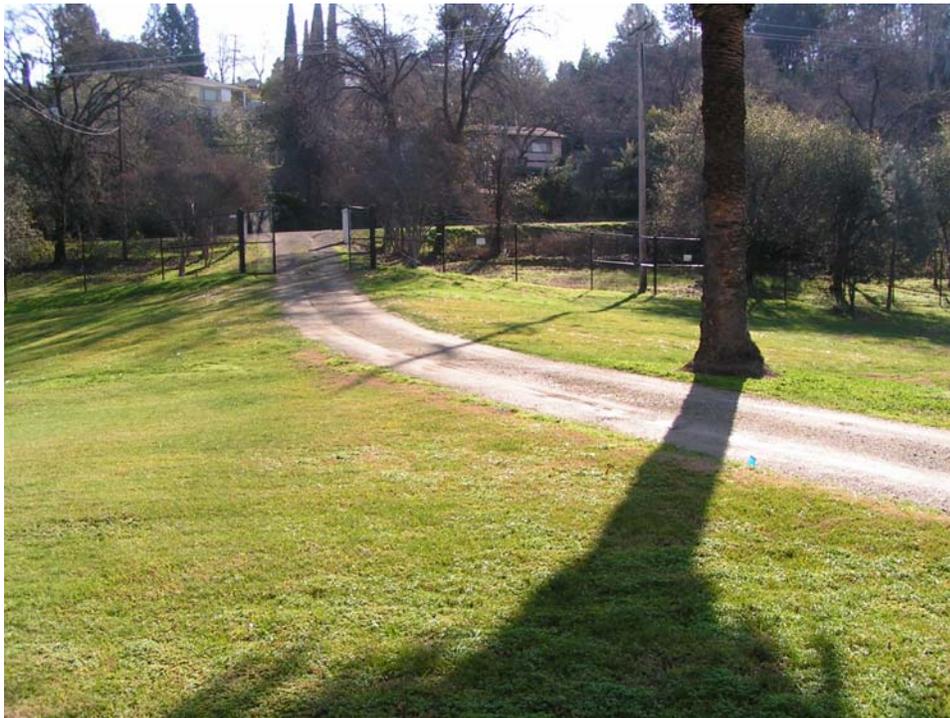
Historically, PCWA has not had a formal agricultural water efficiency program. If awarded, this grant proposal will provide a meaningful investment in capturing water savings which are available and lead to further enhancement of Bay Delta water quality.

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

This section describes the methods, procedures and facilities associated with the project. A project plan and work schedule is also included in this section.

This grant project is proposed as a three year effort. It primarily consists of a one-year redevelopment project to renovate the home, upgrade the barn into a real-time display and model demonstration area and to construct a training and restroom facilities along with creating the landscaped and irrigation demonstration areas. Locations of these facilities are shown in the following exhibits. Exhibit A illustrates the aerial photo of the existing site with some key features include the proximity to Interstate I-80. Exhibit B illustrates the proposed site plan for the improvements, such as the location of the training facility and restrooms that need to be added to the site. Exhibit C illustrates the proposed demonstration areas.

Prior to this grant proposal solicitation, Placer County Water Agency had been discussing a variety of opportunities for working collaboratively with the Placer County Agricultural Commissioner's Office and the University of California, Cooperative Extension of Placer Nevada County. As a result, significant commitments to support training workshops at the Heritage Center have been pledged. During the first year, it will be necessary to edit training materials from existing resources provided by UCCE to incorporate site specific educational opportunities, and as needed, new brochures will be created to advertise the facility. In addition, the Placer County Water Agency, UCCE, and Placer County web sites will be modified with new web page content to help promote the site. The second and third year will be devoted to conducting training and educational workshops.



Entrance driveway



Garage (real time display center) on left, packing shed (to be replaced by training facility) on right



Orange cone denotes the location of the CIMIS station – purchased, and received, awaiting final sitting with Kent Frame, DWR

INSERT EXHIBIT A – from PDF

INSERT EXHIBIT B – from PDF

INSERT EXHIBIT C – from PDF

For each project, PCWA assigns a staff member to serve as the project manager. The project manager is responsible for the overall conduct of the project. This includes assuring that all necessary information required by DWR, including any environmental documentation, is prepared. The project manager is also responsible for the design and preparation of plans and specifications, bidding, construction management, and assuring construction inspection and testing are performed.

The following table illustrates the project plan and work schedule for this project. Each task is further described in subsequent sections. A more detailed breakdown of the project by subtask is provided in Appendix N along with summary cost justifications.

SUMMARY OF PROJECT PLAN AND WORK SCHEDULE

Task	Schedule		Total Project Cost	Prop 50 Grant Cost	PCWA Cost Share
	Start date	End date			
1 Planning, Engineering and Design	Jan-06	May-06	\$ 72,800	\$ 72,800	
2 Site Work, Building Construction/Renovation	May-06	Sep-06	\$ 470,800		\$ 470,800
3* Planting & Materials	Jul-06	Nov-06	\$ 98,600	\$ 98,600	
4 Equipment Purchase, Install and Beta-Test	Jul-06	Nov-06	\$ 76,400	\$ 76,400	
5* Education and Training	Oct-06	Dec-08	\$ 156,800	\$ 145,800	\$ 11,000
6 Monitoring and Assessment	Jan-06	Dec-08	\$ 32,500	\$ 30,000	\$ 2,500
7 Grant Administration and Reporting to DWR	Jan-06	Dec-08	\$ 40,500	\$ 35,000	\$ 5,500
	Total		\$ 948,400	\$ 458,600	\$ 489,800

* Task includes significant in-kind contributions

Note: Project total costs include contingency.

Task 1. Planning, Engineering and Design

Deliverables: Building Construction Final Plans and Specifications, Landscape Design Drawings and Construction Specifications, Environmental Documentation, Site Plant Inventory

This project includes planning and engineering of landscape demonstration areas and the training and restroom facilities. In addition, the garage needs renovation and the Victorian home needs repairs and minor renovation to make it publicly accessible. A landscape architect will be hired to develop the landscape demonstration plans and specifications, with oversight and advisory consulting performed by UC Cooperative Extension.

Landscape and building construction and renovation design activities will be put out to bid. The land for this project has already been purchased and no easements are required. Landscape planning and design will be assisted by the University of California, Cooperative Extension.

Preliminary Plans and Specifications and Certification Statements (for construction projects only). Preliminary Plans and Specifications have been initiated for the proposed project and are provided in Appendix E. Certification Statements verifying that the project is feasible is also inserted in Appendix E.

Environmental Documentation. As requested by DWR, attached in Appendix F is the current filed copy of the CEQA Environmental Checklist. Also included is a revised notice of preparation of the Foothill Phase II WTP and Pipeline project EIR, for further environmental consideration. Specific project revisions, however, do not affect the originally noted environmental consequences of this Heritage Center Project.

Task 2. Site Work, Building Construction and Renovation

Deliverables: Bid summary, copies of applicable permits, quarterly reports to DWR on activities, DWR invoices with associated backup cost documentation

The site will require a limited amount of clearing and finished grading. A grading plan is currently under development; however preliminary draft plans are not yet available. Following leveling of a building pad, construction of the training facility and restrooms will begin. Also, renovations of the garage will occur. Some repair to the Victorian home will also be done under this task including termite and dry rot repairs, HVAC system repairs, and minor renovations to meet ADA requirements.

For the building construction and renovation related activities, the PCWA will use standard engineering and construction methods to implement this project. Standard purchasing and contracting procedures will be used to purchase materials in bulk and use a general contractor for construction and paving. PCWA may elect to use in-house staff to prepare construction documents and conduct construction inspection.

The project will be inspected by either PCWA staff inspectors or PCWA consulting inspectors. PCWA will provide full time inspection on each project. Soils testing may be required and will be performed by a consulting geotechnical engineering firm employed by PCWA.

Task 3. Planting and materials

Deliverables: List of installed plant types, tracking of volunteer support, quarterly reports to DWR on activities, DWR invoices with associated backup cost documentation

Figure 3. Owari Satsuma Mandarin



Based on the site plant inventory, the landscape designs will incorporate existing plantings on site such as the heirloom fruit trees. There are numerous mandarins, pear and other orchard trees that will remain in place.

Planting of additional demonstration agricultural crop and landscaped areas will include those areas shown on Exhibit C above. The Demonstration area's orchards and

pasture grasses will provide an ideal setting for demonstrating water conservation techniques including automatic irrigation control, appropriate pruning and fertilization, and mulching. A wide range of workshops will be presented in the Heritage Center Training Facility (described below under Task 5).

Landscaping surrounding the Heritage Center buildings are proposed to be planted in dryland perennials. These plantings will be designed to demonstrate attractive, low water-use, fire resistant landscapes. Educational displays and workshops will emphasize the water conservation features of this landscaping.

A landscape contractor will be hired by PCWA to construct the irrigation demonstration areas. This task will also have volunteer support to help accomplish landscaping and constructing of planters. Attempts to have plant material donated will be made. The UC Cooperative Extension will consult on Plant selection for Water Efficient Landscapes in Zone 7, soil preparation, mulching materials/weed prevention, and how to plant properly. Costs include printing of materials and coordination of volunteer time.

Task 4. Equipment Purchase, Installation and Beta-testing

Deliverables: Summaries of vendor quotes, tracking of volunteer support, quarterly reports to DWR on activities, DWR invoices with associated backup cost documentation

CIMIS stations are used successfully in other parts of California to provide weather data to irrigators wishing to optimize their water application rates. This project will promote the use of CIMIS technology in Placer County, which has previously not had a CIMIS station. On September 16, 2004, the Placer County Water Agency Board of Directors approved a Land Use Agreement with DWR for a CIMIS weather station. CIMIS Station was purchased for the Ophir site in November 2004. Currently working on site improvements (replace Bermuda grass, etc. as directed by Kent Frame, CIMIS Program Manager, DWR) It will be installed at the Heritage Center site in conjunction with a Data and Model Display Area. Visitors to the center will learn what kind of information a CIMIS station provides, and in the Data and Model Display Area they will be able to view real-time weather data. Information gathered by the station will be used in conjunction with proposed evapotranspiration technology to develop a water budget and demonstrate the optimization of site irrigation.

A second CIMIS station will be purchased and installed at a site selected by DWR staff to maximize its usefulness to local growers. This station will provide information to growers to allow them to optimize their irrigation schedules.

This task involves the final selection, purchase, installation and beta-testing of irrigation demonstration equipment both ET Controllers and Neutron Probes. Sample equipment specifications are provided in Appendix D. A minimum of six ET Controllers will be installed in strategic locations around the site controlling irrigation systems, including applying water to the orchard, pasture grass area, and as appropriate to the water efficient landscaping around the Heritage Center Victorian home. These instruments will demonstrate technology that automatically calculates

a scientifically-based irrigation schedule using crop-specific parameters. CIMIS station weather data will be used to adjust the irrigation schedule for each of the watering zones as local weather changes. Appurtenances for three neutron probes will be installed to allow monitoring of soil moisture in the orchard, pasture grass, and water efficient landscaping zones, verifying the effectiveness of ET controller technology. This task also involves the selection and purchase of irrigation system equipment and materials.

Task 5. Education and Training

Deliverables: Photos of construction and completed educational displays, copies of brochures and advertisements developed, workshop summaries (copy of agenda, presentations content, number of attendees, observations and feedback), workshop performance evaluations, list of tours conducted.

This task is the foundation of this grant proposal, which is to educate growers in the region on efficient irrigation practices. This task is divided into three basic parts: (5.1) Educational Display Construction and Maintenance; (5.2) Workshop Development and Implementation; and (5.3) Community Outreach and Promotion.

The Heritage Center will leverage existing materials or develop the new means of broadening range of services to growers, who are also local home residents, promoting water conservation through the use of irrigation optimization technology and water efficient landscaping techniques. These services envisions to be developed under this task are as follows:

- A. Irrigation Information Hotline
The Irrigation Information Hotline will be housed in the Heritage Center's main office. This Hotline will operate 365 days per year, providing the following information:
 - i. Weekly evapotranspiration data, with instructions for obtaining a CIMIS information download
 - ii. A recording describing current events and programs
 - iii. An opportunity to record a message to schedule tours and events
 - iv. An opportunity to record a message to "Ask the Expert" (modeled on the University of California Cooperative Extension Master Composters' "Rotline," see Appendix K for example brochures)

- B. Heritage Center Training Facility (HCTF)
The HCTF will be a building constructed adjacent to the Data and Model Display Area. Workshops will be presented in the HCTF, many in cooperation with the University of California Cooperative Extension (UCCE), including:
 - i. Demonstration Irrigation Best Practices Workshops
 - a. DWR CIMIS training workshops given by DWR staff
 - b. Growers will receive instruction three times per year presented by Mr. Jim Brockmeyer, Agronomist and Consultant, JVB Consultants, regarding optimization of irrigation management.
 - c. Livestock grasses presented by Roger Ingram, Livestock Advisor, would provide one workshop: Control of Noxious Weeds in Range and Pasture. Orchards presented by Cindy Fake, Hort and Small Farms Advisor, would provide one workshop.

- ii. University of California Cooperative Extension Master Gardeners of Placer and Nevada Counties will present four workshops per year at the Heritage Center, on topics designed to reduce water consumption including soils improvement, plant selection, water efficient landscaping, and appropriate irrigation equipment selection and installation (see example educational materials and a description of the program in the Appendix K).



Figure 4. Hands-on Training (as provided by UCCE)

- iii. Homeowner Landscaping. PCWA and UCCE staff will present workshops at the HCTF. By understanding landscape species water needs, environmental conditions that affect water loss, soils, root distribution, and irrigation systems, homeowners can reduce their irrigation water use while maintaining healthy and attractive landscapes. The University of California Cooperative Extension will present a minimum of two workshops per year at the Heritage Center to aid homeowners in their understanding of these topics (see Appendix G article, “Irrigating the Home Landscape”). UCCE could give up to a maximum of 4 workshops, one per quarter, at the Heritage Center, utilizing the demonstration garden(s) for hands-on workshops such as: Water Efficient Landscaping, Natives in the Home Landscape, Micro-Irrigation Basics, and Fruit Tree Pruning. Workshops generally serve 25-30 people but with the Heritage Center potential, that number could be increased to 40-50.
- B. Heritage Center Interpretive Displays will be installed throughout the facility, pointing out the water-wise features and explaining concepts such as manual irrigation, native and wildscapes, automated irrigation control and water efficient landscaping. A kiosk will summarize the site projects and features, with a real-time display of CIMIS data and irrigation control information. Signs will lead visitors on an explorative journey of discovery through the site.

Task 6. Monitoring and Assessment

Deliverables: Summary statistics from surveys of workshop participants, summaries from visitor tracking database, summary of any feedback from visitors, summary web site visits for facility information or events calendar

The goal of this task is to track progress throughout the project. A survey was performed of growers in 1999 by the UC Cooperative Extension, as shown in Appendix H. It is envisioned that this could serve as a baseline survey of growers' knowledge and needs. Two similar surveys one at the beginning of 2007 after the holidays is envisioned and then a second one at the end of the project is also envisioned to see if progress can be quantified. In terms of quantifying attendance, workshop tracking and evaluation forms already exist. This task is more importantly focused on implementation of the monitoring and assessment of the quality of information, the different types of workshops given, and number of participants attending and if they learned anything from the workshops that they are likely to apply.

There is a related task to attempt to quantify water use through measurement from the canal screening device and other means. This is yet to be determined but a monitoring and evaluation plan for tracking the on-site water usage will be provided to see if possible to estimate with any accuracy the water deliveries to raw water customers and what savings potential may exist.

Task 7. DWR Grant Administration and Reporting

Deliverables: Quarterly reports to DWR on activities, DWR invoices with associated backup cost documentation, Final Report and follow-up annual reports for five years after.

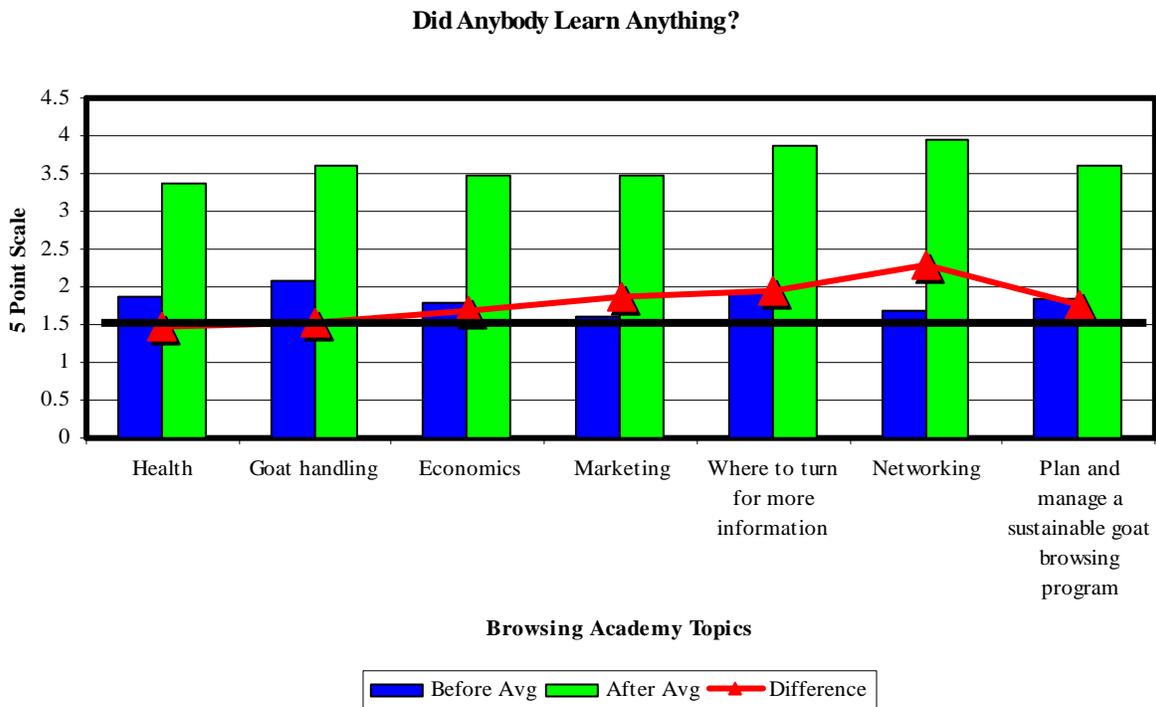
This task is focused on the overall grant project management. Once the contract is executed, take steps to meet the requirements for disbursement of funds. Proceed with preparing grant reports: quarterly, annually and final report as defined by DWR contract agreement. Much like the UC Cooperative Extension does now for its workshops, PCWA will provide summary statistics on visitorship and maintain a list of workshops and tours completed.

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

The monitoring plan for PCWA is based on the model created and currently used by UC Cooperative Extension that will be employed for this grant project. An original survey was conducted by UCCE in 1999, whose results are presented in Appendix H. A follow-up study is planned to assess pre-project conditions and data baselines will be determined, and explain of the basic assumptions being used to develop the survey tool will be discussed in the quarterly and final reports to DWR. And since the data is self-reported, it is subject to self selection bias making pinpointing the level of accuracy difficult at best. The goal will be to measure an overall increase in knowledge due to training at the Heritage Center.

The method will be a standardized questionnaire given to every workshop and tour attendee. Since workshops are not planned to repeat successively over the course of this project (once or twice per year on the same topic), the increase in knowledge within that individual workshop will be the only data collected and analyzed. It is not envisioned that data analysis across workshops would be useful given different content. As can be seen in the example Figure 4 below, the data will be used to evaluate success in relation to meeting that project workshop goals and objectives. Appendix H has some other workshop assessment examples. For the Final Report a summary table with the increase (or decrease) in knowledge from the workshop will be quantified. The only external factor that will be accounted is repeat attendees that may skew the survey results.

Figure 4. Example Graphic on Trends of Knowledge Gained Pre and Post Workshop



All information collected will be accessible to DWR per request to PCWA. The survey information collected will be archived in PDF documents. Surveys are relatively inexpensive to conduct and evaluate. The total cost for this effort is estimated at: \$32,500.

As a community center for irrigation education, the Heritage Center's visitorship and use of the programs will be the most important measure of success. The following numbers will also be tracked and reported in the quarterly and final reports:

- Workshop attendance
- Non-workshop visitors (e.g., Annual Agricultural Tour attendees) to the Heritage Center
- Hotline calls
- Hits on the Heritage Center page on the PCWA Website

Finally, opportunities to measure the raw water system deliveries to the site as a means of estimating of applied water versus savings potential will be explored. The verification of water application efficiency ET controllers will use neutron probes and also water measurement between demonstration areas to the extent feasible.

4. QUALIFICATIONS OF THE APPLICANTS AND COOPERATORS (5 POINTS)

The following individuals will be assisting with this project as shown with the roles defined:

Title: John Kingsbury, Placer County Water Agency, Director of Customer Services
Role: PCWA Project Coordinator

Title: Harley Lukenbill, Placer County Water Agency, Water Conservation Coordinator
Role: PCWA Project Manager, Workshop presenter

Title: Audra Davison, Placer County Water Agency
Role: PCWA Water Efficiency Specialist

Title: Sharon Junge, County Director, UC Cooperative Extension
Role: Project Advisor

Title: Roger Ingram, Farm Advisor, UC Cooperative Extension
Role: Project Advisor, Workshop presenter

Title: Cindy Fake, Horticulture and Small Farms Advisor, UC Cooperative Extension
Role: Project Advisor, Workshop presenter

Title: Kevin Martini, Horticulture and Composting Specialist
Role: Project Advisor, Workshop presenter

Please find details of these individuals experience and qualifications in Appendix I.

5. OUTREACH, COMMUNITY INVOLVEMENT, AND ACCEPTANCE

The Heritage Center Water-Wise Irrigation Demonstration Site Project will bring needed agricultural water efficiency concepts to Placer County. The purpose of the project is outreach, community involvement, and increasing awareness of water conservation concepts and techniques. Methods will be tailored to agricultural growers and local residents. By bringing many popular UCCE workshops into a new home at the Heritage Center site, this project creates a visible and accessible community center for the promotion of improved agricultural practices, including water efficiency.

For example, while CIMIS technology is prevalent in other California counties, this project will bring the first two CIMIS stations to Placer County. Local residents attending UC Cooperative Extension workshops on a wide range of landscaping topics will become exposed to the on-site CIMIS station; this will increase visibility of the technology as people begin talking about it among themselves and with local growers. Growers will have an opportunity to become familiar with this technology in a very user-friendly environment and have displays of both ET controllers and neutron probes. UC Master Gardeners will have the opportunity to take training classes on-site.

It is the intention of PCWA to make the Heritage Center Irrigation Demonstration Site a vibrant and exciting place to visit. Events will occur year-round and event advertising will be widespread and visible. Making water conservation interesting, easy to understand, and fun will promote adoption of many available, previously underutilized techniques.

The following are a list of media contacts that will receive press releases and requested to write articles to promote the irrigation demonstration site:

PCWA Media Consultant (for press releases):

Dave Carter
Nevada City, CA 95959

NEWSPAPERS

Dailies:

Press Tribune
188 Cirby Way
Roseville, CA 95678

Sacramento Bee
South Placer Bureau
2231 Douglas Blvd., Ste. 100
Roseville, CA 95661

BI-WEEKLIES:

Regional Section of the Sacramento Bee
2231 Douglas Boulevard, Suite 100
Roseville, CA 95661

Colfax Record
P.O. Box 755
Colfax, CA 95713

The Business Journal
P.O. Box 470
Sacramento, CA 95812-9955

Lincoln News Messenger
P.O. Box 368
Lincoln, CA 95648

BI-MONTHLY:

Foresthill Messenger
P.O. Box 1024
Foresthill, CA 95631-1024

FOUR TIMES A YEAR:

The Community
P.O. Box 236
Dutch Flat, CA 95714

There is strong acceptance among the local, region and statewide support for this program. The following organizations have written letters in support of this grant proposal.

- ✓ University of California, Agricultural and Natural Resources, Cooperative Extension Placer and Nevada Counties, County Director, Sharon Junge (External Cooperator)
- ✓ Placer County Department of Agriculture, Weights and Measures Agricultural Commissioner, Christine Turner
- ✓ United States Department of Interior, Bureau of Reclamation Area Manager, Michael Finnegan
- ✓ High Sierra Resource Conservation and Development Area Coordinator, Daniel Macon
- ✓ Northern California Water Association Director of Government Relations, Todd Manley
- ✓ California Urban Water Conservation Council Executive Director, Mary Ann Dickinson
- ✓ Water Education Foundation Executive Director, Rita Schmidt Sudman

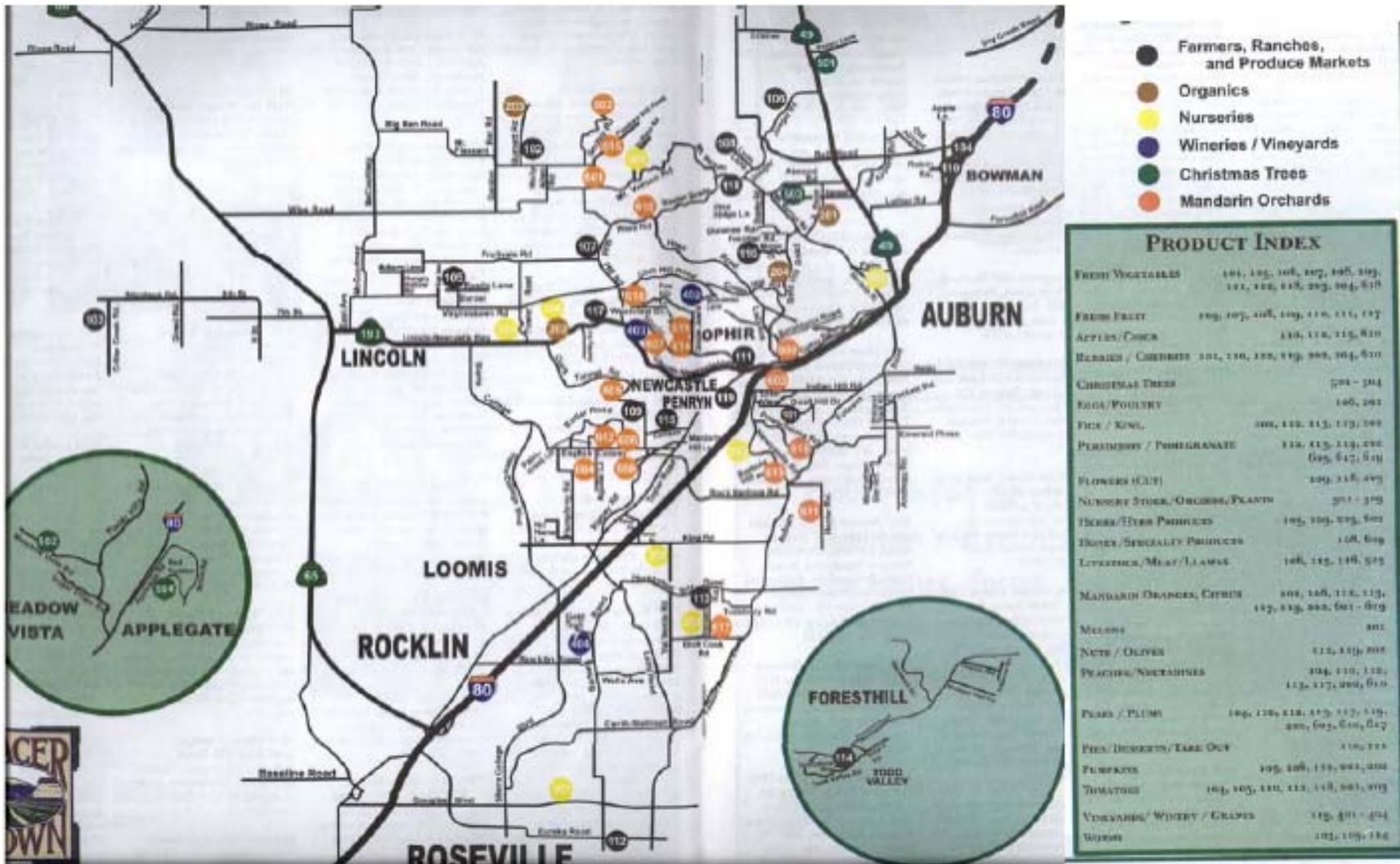
- ✓ Sacramento Water Forum
Executive Director, Leo Winternitz
- ✓ Regional Water Authority, Sacramento, CA
Executive Director, Edward Winkler
- ✓ Horton Farm Iris Garden, Loomis, CA
Mary Ann Horton, Doug Horton
- ✓ JVB Consulting, James Brockmeyer
- ✓ Reference for Irrigation Management Services (IMS):
Schmeidt Vineyards, Ross Schmeidt, Lodi, CA
- ✓ Reference for Irrigation Management Services (IMS):
El Dorado County vineyard owner, Hal and Linda Lamb

The grower community has great pride in their local grown products. In Figure 5. below is a photograph from this year's State Fair Exhibit by Placer Grown.



Figure 5. Exhibition of Pride in Placer County Agricultural Products

The following figure illustrates some of the growers within Placer County to show some of the diversity of types of crops by approximate location of the larger growers. Placer County Agricultural Crop Report is provided in Appendix M. The total gross value of crops grown in 2003 was over \$73.2 million.



6. INNOVATION

This project incorporates both innovative ideas and technologies. Using a restored Victorian for a demonstration garden is not a novel idea, others in the Sacramento region have accomplished local gardens demonstrating xeriscape. PCWA's dream of turning the Heritage into a state-of the art agricultural irrigation efficiency training center is much broader and has greater potential to achieve more water savings.

The innovative technologies included in this grant proposal are:

1. A CIMIS station at a unique elevation, climate zone. Other stations in Camino, El Dorado County is at 2,780 ft elevation in ETo Zone 13. This Ophir facility is at 830 ft elevation in ETo Zone 7. And the Fair Oaks station is at 265 ft elevation in ETo Zone 9.
1. A real-time monitoring station will be installed similar to the one at the Southern California Edison Facility, AgTac. A description of this facility and its exhibits and displays are provided in Appendix L.
2. ET controller technology is up and coming in its application to both urban and rural, agricultural crop irrigation. This technology will be employed in the form of several controllers to demonstrate their efficiency through tracking the water applied and help quantify future savings potential.
3. Neutron probes will be used on-site to verify ET Controller watering efficiency. Jim Brockmeyer has consulted in numerous neighboring counties as illustrated by the Support Letter provided in Appendix J. The Guidelines for Irrigation Management System (IMS) that will be promoted are provided in Appendix L provides innovative background documents.

PCWA is prepared to maintain this site and keep the technology and training materials update for the long term. This educational and training facility is a worthwhile investment and will be in easy driving distance from Sacramento.

7. BENEFITS

This project will provide benefits in terms of reduced outdoor water use. El Dorado Irrigation District has estimated that the agricultural water use efficiency program has saved on average approximately 30% per farm in the Irrigation Management System (IMS). (see Appendix M). PCWA has initiated a small pilot study recently and is looking to expand the program. This facility with its hands-on demonstration will be critical to the success of marketing expansion of the IMS program. In addition, testing out new ET Controller "smart" technology using data from CIMIS will have an added benefit to managing water within the region.

The water savings that result from this project cannot be accurately directly quantified but will be estimated. The statewide benefit of water use efficiency includes having PCWA customers that come to trainings then take action and irrigate more efficiently. With improvements driving more effective irrigation practices, which would leave more water for downstream uses and water quality benefits. The field district CIMIS station would benefit in data collection dissemination and would benefit the DWR by providing more data for the foothill region. The only existing foothill station is in Camino.

In addition, the training provided by the UC Cooperative Extension will translate into further statewide benefits as they network with other UC Cooperative Extensions in other counties around the state. Appendix M provides more background documentation regarding project benefits.

8. COSTS (TABLES IN APPENDIX C AND SUPPORTING DOCUMENTATION)

The Heritage Center Irrigation Demonstration Site will be managed by a part-time Site Coordinator. The person in this position will be responsible for the quarterly and final reporting on the project. During the first year, this person will aid in planning and design, as well as participate with construction management. In the second and third years, the Site Coordinator will coordinate educational activities, lead tours, monitor and manage the Hotline, develop public outreach and informational materials, develop and administer project assessment tools, and coordinate the management of the site plantings and equipment maintenance.

In addition, one part-time PCWA employee will maintain the site equipment. During the first year, one-part PCWA engineer will oversee the construction management. A landscaping company will be retained on a monthly contract to maintain the site's landscaping.

A detailed cost estimate breakdown by subtask is provided in Appendix N. The project cost presented in this proposal is subject to the approval of the applicant's governing board. A matching funds commitment letter and will be provided by the applicant if this proposal is selected for funding. It is possible that this project may be scaled down, although this would not impact the applicant's percent share.

As requested in the PSP, Table C-1 presents the project cost estimate and Table C-8 defines the applicant's cost share.

2005 WATER USE EFFICIENCY PROPOSAL SOLICITATION PACKAGE

**Proposal Part Two
C: Project Costs and Benefits Tables**

Table C- 1: Project Implementation Costs (Budget)

Table C- 8: Applicant's Cost Share and Description

APPENDIX C

Project Implementation Costs Table

APPLICANT: Placer County Water Agency

Project Title: Heritage Center Water-Wise Irrigation Demonstration Site Project

Table C-1: Project Implementation Costs (Budget)

	Category	Project Costs	Contingency % (ex. 5 or 10)	Project Cost + Contingency	Applicant Share	State Share Grant
	(I)	\$ (II)	(III)	\$ (IV)	\$ (V)	\$ (VI)
	Administration ¹					
	Salaries, wages	\$0	10	\$0	\$0	\$0
	Fringe benefits	\$0	10	\$0	\$0	\$0
	Supplies	\$0	10	\$0	\$0	\$0
	Equipment	\$0	10	\$0	\$0	\$0
	Consulting services	\$0	10	\$0	\$0	\$0
	Travel	\$0	10	\$0	\$0	\$0
	Other	\$0	10	\$0	\$0	\$0
(a)	Total Administration Costs	\$36,818	10	\$40,500	\$5,500	\$35,000
(b)	Planning/Design/Engineering	\$66,182	10	\$72,800	\$0	\$72,800
(c)	Equipment Purchases/Rentals/Rebates/Vouchers	\$69,455	10	\$76,400	\$0	\$76,400
(d)	Materials/Installation/Implementation	\$89,636	10	\$98,600	\$0	\$98,600
(e)	Implementation Verification	\$0	10	\$0	\$0	\$0
(f)	Project Legal/License Fees	\$0	10	\$0	\$0	\$0
(g)	Structures	\$0	10	\$0	\$0	\$0
(h)	Land Purchase/Easement	\$0	10	\$0	\$0	\$0
(i)	Environmental Compliance/Mitigation/Enhancement	\$0	10	\$0	\$0	\$0
(j)	Construction	\$428,000	10	\$470,800	\$470,800	\$0
(k)	Other (Education and Training)	\$142,545	10	\$156,800	\$11,000	\$145,800

	Category	Project Costs	Contingency % (ex. 5 or 10)	Project Cost + Contingency	Applicant Share	State Share Grant
(l)	Monitoring and Assessment	\$29,545	10	\$32,500	\$2,500	\$30,000
(m)	Report Preparation	\$0	5	\$0	\$0	\$0
(n)	TOTAL	\$862,182		\$948,400	\$489,800	\$458,600
(o)	Cost Share -Percentage				52	48

1- excludes administration O&M.

Table C-8: Applicant's Cost Share and Description

Applicant's request for State share (%)	48%
Describe how the cost share (based on relative balance between Bay-Delta and Local benefits) is derived (see Section A-7 for description):	

APPENDIX D

Equipment Specifications and Vendor Lists

NEUTRON PROBE

ET CONTROLLERS

APPENDIX E

Preliminary Project Plans and Specifications

Engineering Certification Statement

By signing below, the official declares the following:

I, Paul Selsky, P.E., a California registered civil engineer, have reviewed the information presented in support of this application. Based on this information and any other information I have regarding the proposed project, I find that it is a feasible project and can be designed, constructed, and operated to accomplish the purpose for which it is planned after completion and certification of the final plans and specifications.

Signature

Paul Selsky, P.E.
Name and title

Date

APPENDIX F

Copy of Notice of Preparation (NOP) CEQA Environmental Checklist

Appendix G

Background Documents for Monitoring and Assessment

Methods and Procedures

APPENDIX H

**Example of Monitoring and Assessment Reports by
University of California, Cooperative Extension (UCCE)**

“Baseline” Agricultural Growers Survey Report (1999)

UCCE Sample Workshop Evaluation Summary Spreadsheets

UCCE Sample Workshop Evaluation Summary Spreadsheets

APPENDIX I

Project Manager Resumes

APPENDIX J

Letters of Support

APPENDIX K

Example Training and Public Information Materials

APPENDIX L

Background Documentation for Innovation

Southern California Edison - AGTAC Program Information – Summary Document

APPENDIX M

Background Documentation on Benefits

APPENDIX N

Background Documentation on Cost Estimate

SUMMARY OF PROJECT COST ESTIMATE

Task		Units	Unit Costs	Total Cost	Grant Cost	PCWA Share
1	Planning, Engineering and Design				\$ 72,800	\$ -
a	Site Plant Inventory		\$	5,500		
b	Landscaping Oversight Coordination by UCCE		\$	8,500		
c	Site Topographic Survey and Mapping		\$	1,500		
d	Training Building and Display Building Structures Design Drawings and Specs		\$	34,800		
e	Landscape Planning and Design Drawings and Specs		\$	22,500		
f	Bid Preparation		\$	3,500		
2	Site Work, Building Construction/Renovation				\$ -	\$470,800
a	Construction Project Management (Schedule and Budget) (Year 1)	820 hrs	\$ 40.00	\$ 32,800		
b	Clear & grub – work by PCWA field crews	3 acre	\$ 1,500.00	\$ 4,500		
c	Upgrade utilities, install conduit and data lines	1 LS		\$ 27,000		
d	Road work parking lot to back of training facility	3800 SF	\$ 2.00	\$ 7,600		
	Parking lot and entry drive - gravel	21000 SF	\$ 2.00	\$ 42,000		
	Handicap Parking - paved	2300 SF	\$ 4.75	\$ 10,925		
	Bollards removable	4 EA	\$ 90.00	\$ 360		
	Paving, sidewalks, handicap ramp	4100 SF	\$ 3.00	\$ 12,300		
e	Demolish Packing Shed	1 LS	\$ 1,500.00	\$ 1,500		
f	Construction of new Training Facility (30ft x 40ft)	1200 SF	\$ 100.00	\$ 120,000		
g	Construct restrooms	450 SF	\$ 120.00	\$ 54,000		
h	Building Renovation for Data Model and Real-time Computer Display E	1000 SF	\$ 50.00	\$ 86,540		
i	Permit inspections and occupancy approvals	1 LS	\$ 8,000.00	\$ 8,000		
j	Fencing - 30% more than existing	1 LS	\$ 24,000.00	\$ 24,000		
k	Renovate Heritage Center for compatible uses - public ADA upgrades	1 LS	\$ 39,300.00	\$ 39,300		
3	Planting & Materials				\$ 98,600	\$ -
a	Landscaping On--Site Coordination of UCCE support (Year 2)	1800 hrs	\$ 35.00	\$ 63,000		
b	Remove warm grass from CIMIS site, replace w/cool season grass	10752 SF	\$ 0.75	\$ 8,064		
	Landscape plant materials around Heritage Center with dryland					
c	perennials, native plants, pasture grasses	1500 1-gallon	\$ 7.70	\$ 11,550		
d	Plant new orchard trees	40	\$ 100.00	\$ 4,000		
e	Construct demonstration planting areas			\$ 12,000		

SUMMARY OF PROJECT COST ESTIMATE

Task				Total Cost	Grant Cost	PCWA Share
4	Equipment Purchase, Install and Beta-Test				\$ 76,400	\$ -
a	CIMIS #2 – calibration site at off-site location			\$ 7,500		
b	Six (6) ET Controllers and maintenance contracts	6 EA		\$ 6,000		
c	Three (3) Neutron Probes	3 EA	\$ 125.00	\$ 375		
d	Irrigation equipment and materials (submeters)	34020 SF	\$ 0.40	\$ 13,608		
e	Filteration system	1 LS		\$ 12,000		
f	Irrigation system equipment installation	34020 SF	\$ 0.80	\$ 27,216		
g	CIMIS #1 installation on-site	1 LS	\$ 4,500.00	\$ 4,500		
h	On-site CIMIS programming in Data and Model Display Area	1 LS	\$ 3,000.00	\$ 3,000		
i	ET Controller (6) installation	6 EA	\$ 300.00	\$ 1,800		
j	Neutron probe (3) installation	3 EA	\$ 125.00	\$ 375		
k	Hotline installation/setup					
5	Education and Training				\$ 145,800	\$ 11,000
5.1	<i>Education Display Construction and Maintenance</i>				\$ 54,300	
a	Data and Model Display Area	1 LS	\$ 7,500.00	\$ 7,500		
b	Training Facility Interior Wall Displays	1 LS	\$ 3,000.00	\$ 3,000		
d	Signage for site	1 LS	\$ 3,500.00	\$ 3,500		
e	On-site facilities coordinator and maintenance worker (Year 3)	1150 hrs	\$ 35.00	\$ 40,250		
5.2	<i>Workshop development and implementation (12, 1-day, events per year for 2 years)</i>			\$ 66,500	\$ 66,500	\$ 6,500
a	CIMIS					
b	Growers					
c	Farm Advisors					
d	Small Farm Workshops					
e	PC Master Gardeners					
f	Irrigation Techniques for Rural Homeowner Landscaping					
g	School Education					
h	Annual Agricultural Tour					
j	Others					
5.3	<i>Community Outreach & Promotion</i>			\$ 29,500	\$ 25,000	\$ 4,500
a	PCWA, Placer County, MG, UC Extension Web page creation and updates – online announcements and calendar of events					
b	Grand Opening with local elected officials and DWR – press release					
c	Organization Newsletters					
d	Public Service Announcements or Paid Advertising					
e	Scheduling of other community events (besides irrigation workshops)					

SUMMARY OF PROJECT COST ESTIMATE

	Task		Total Cost	Grant Cost	PCWA Share
6	Monitoring and Assessment		\$ 32,500	\$ 30,000	\$ 2,500
a	Build a tracking database				
b	Track visitorship (raw numbers) – database is built				
c	Track workshop attendees (growers)				
d	Survey workshop attendees				
e	Report on-site raw water measurement				
f	Other? Web page usage trends hits, number of phone inquiries				
7	Grant Administration and Reporting to DWR		\$ 40,500	\$ 35,000	\$ 5,500
a	Contract execution with UC Extension Service				
b	Contract execution with DWR				
c	General grant administration and coordination with DWR and partner organizations				
d	Quarterly reports and invoices				
e	Final Report				
		TOTAL	\$ 948,400	\$ 458,600	\$489,800

Company	contact name	contact number	e-mail / website	Model No.*	ET data reception type*	Cost	Notes
AquaConserve	Gary Bailey	951-352-3891	www.aquaconserve.com	Aqua ET-24B Large Residential / Commercial	local temp sensors and historcial data log tor reference	\$599	quoted 1/3/05
HydroPoint Data Systems	Sharon Connelly	707/769-9696	www.hydropoint.com	WeatherTRAK__	internet data center linked to regional weather	\$959	quoted 1/3/05
Baseline	Ed Matthew	801-891-7491	www.baselinesystems.com	BaseStation 2000	soil/moistrure based irrigation	\$1,900	quoted 1/3/05
Irrrometer Company, Inc.	Tom Penning	951-689-1701	tomp@irrometer.com	Irrrometer RA	soil/moistrure based irrigation	\$105	quoted 1/3/05. usually 2 used per site
Rain Bird	Mark Hewitt	509-430-7355	www.rainbird.com	Cyclic	basic moisture sensors; pre-programmed	\$605	quoted 1/3/05. battery operated. For movable systems. Others available too (rain/freeze mositure sensor = 115\$)