Project Information

2005 Proposal Number: 0083

Proposal Title: **Conservation Based Farming Practices Monitoring and Evaluation Project**

Applicant Organization Name: **Agricultural Water Management Council**

Total Amount Requested: $**197,466**

ERP Region:

Short Description

Proposed project will develop monitoring, performance and data management tools for ERP based wildlife friendly agricultural projects in collaboration with ERP staff. The project propsoes to improve the understanding of the effects of conservation−based farming practices, design techncial protocols for growers, and promote the understanding of conservation−based farming practices.

Executive Summary

Conservation−Based Farming Practices Monitoring and Evaluation Project Proposal Executive Summary

The Agricultural Water Management Council (AWMC) is proposing the Conservation−Based Farming Practices Monitoring and Evaluation Project (Project) as a technical assistance program to aid growers in the required reporting of monitoring data for the implementation of conservation−based farming practices. The monitoring and verification protocols developed in this project will significantly further understanding of the relationship between agricultural actions and ecosystem restoration benefits. It is critical to monitor the implementation of restoration actions to gauge how the ecosystem responds to management interventions. CALFED needs consistent and relevant performance data to assess how conservation farming activities contribute to the ecosystem and CALFED objectives.

The monitoring and evaluation protocols proposed for development must 1) be practical and implementable by growers and ERP participants and 2) result in the consistent collection, reporting, and management of relevant data that allows for the assessment and documentation of implementation performance. Improved monitoring and verification will ensure that public money is spent effectively and will provide valuable knowledge about the effectiveness of conservation farming techniques to achieve environmental improvements and benefits toward CALFED Bay–Delta goals.

The Project will initiate future conservation based farming activities by showing growers that their agricultural actions can contribute to regional environmental benefits that are recognized by the State. Growers and other ERP participants can use the monitoring protocols to demonstrate their efforts toward achieving CALFED goals. Growers will participate in monitoring programs, if they are given clear and concise directions of what to monitor and how.

The following are the goals and objectives of this project: 1. Improve the understanding of the effects of conservation–base farming practices. 2. Coordinate with CALFED to identify data needs related to conservation based farming activities to accurately indicate performance toward CALFED objectives. 3. Design technical protocols for growers to consistently and effectively monitor implementation. 4. Provide means for effective data collection, reporting, and management for state agencies. 5. Promote the understanding of the value of conservation–based farming practices for the environment and larger restoration projects among growers.

This Project is an extension of the many technical services AWMC provides to water suppliers and water users to improve water use efficiency. There are already user–guides for monitoring and verification of water management actions available to download on the AWMC website.

ERP Conservation Based Farming Practices

A. Project Description

1. Problem

The Agricultural Water Management Council (AWMC) is proposing the *Conservation-Based Farming Practices Monitoring and Evaluation Project* (Project) as a technical assistance program to aid growers in the associated reporting of monitoring data for the implementation of conservation-based farming practices. The proposed project will also collect additional data to further the understanding of the relationship between conservation-based farming activities and ecosystem restoration efforts.

It is critical to monitor the implementation of restoration actions to gauge how the ecosystem responds to management interventions. CALFED needs consistent and relevant performance data to assess how conservation farming activities contribute to the ecosystem and CALFED objectives.

One of the goals of the Ecosystem Restoration Program (ERP) is to protect and restore functional habitat types in the Bay-Delta estuary and its watershed for ecological and public values such as supporting species and biotic communities, ecological processes, recreation, scientific research, and aesthetics. AWMC will develop monitoring and verification protocols for the implementation of conservation farming practices to measure their contribution to this objective.

The monitoring and evaluation protocols proposed for development must 1) be practical and implementable by growers and ERP participants and 2) result in the consistent collection, reporting, and management of relevant data that allows for the assessment and documentation of implementation performance. Improved monitoring and verification will ensure that public money is spent effectively and will provide valuable knowledge about the effectiveness of conservation-based farming techniques to achieve environmental improvements and benefits toward CALFED Bay-Delta goals.

Over the next three years CALFED will commit Proposition 50 grant funds to projects that assist growers in integrating agricultural activities with ecosystem restoration. To evaluate the effectiveness of these projects, CALFED must clearly identify its data needs and communicate appropriate performance measures to growers implementing the conservation-based farming practices. The growers must have appropriate and consistent measuring tools and procedures to prove agricultural contributions to CALFED objectives.

Monitoring and assessing the success of conservation farming activities for improving environmental conditions depends on the availability of pre-project data as a basis for comparison. In most cases, this information is not available. Different local, state and federal agencies use different monitoring and assessment and reporting methods that may not be the most accurate or trough and they might not be comparable to methods chosen by other agencies. Currently growers have not accurately and consistently measured ecosystem restoration benefits.

These inconsistencies can prevent regional assessment and statewide of the success of conservation based farming activities and programs.

In addition, the Project will initiate future conservation based farming activities by showing growers that their agricultural actions can contribute to regional environmental benefits that are recognized by the State. Growers and other ERP participants can use the monitoring protocols to demonstrate their efforts toward achieving CALFED goals. Growers will participate in monitoring programs, if they are given clear and concise directions of what to monitor and how.

2. Project Goals and Objectives

Throughout the Project, AWMC links science to the management and implementation of agricultural activities. The Project goals is to clarify the data needs of CALFED agencies and ecosystem restoration programs related to conservation farming, provide a consistent means for measuring the performance of conservation farming techniques toward achieving CALFED objectives, and to develop a data management system that will house the results of pre and post-implementation monitoring and verification data. The results of this Project will further define CALFED's goals that can be further attained through conservation farming practices and will demonstrate agriculture's contribution to regional environmental benefits.

Project objectives:

1) Improve the understanding of the effects of conservation-based farming practices.

2) Coordinate with CALFED to identify data needs related to conservation farming activities to accurately indicate performance toward CALFED objectives.

3) Design technical protocols for growers to consistently and effectively monitor implementation.

4) Provide means for effective data collection, reporting, and management for state agencies.

5) Promote understanding of the value of conservation farming practices for the environment and larger restoration projects among growers.

This Project is an extension of the many technical services AWMC provides to water suppliers and water users to improve water use efficiency. There are already user-guides for monitoring and verification of water management actions available for download on the AWMC website.

3. Conceptual Model

It is critical to monitor the implementation of restoration actions to gauge how the ecosystem responds to management interventions. This Project will center on the monitoring aspect of the ERP adaptive management sequence.

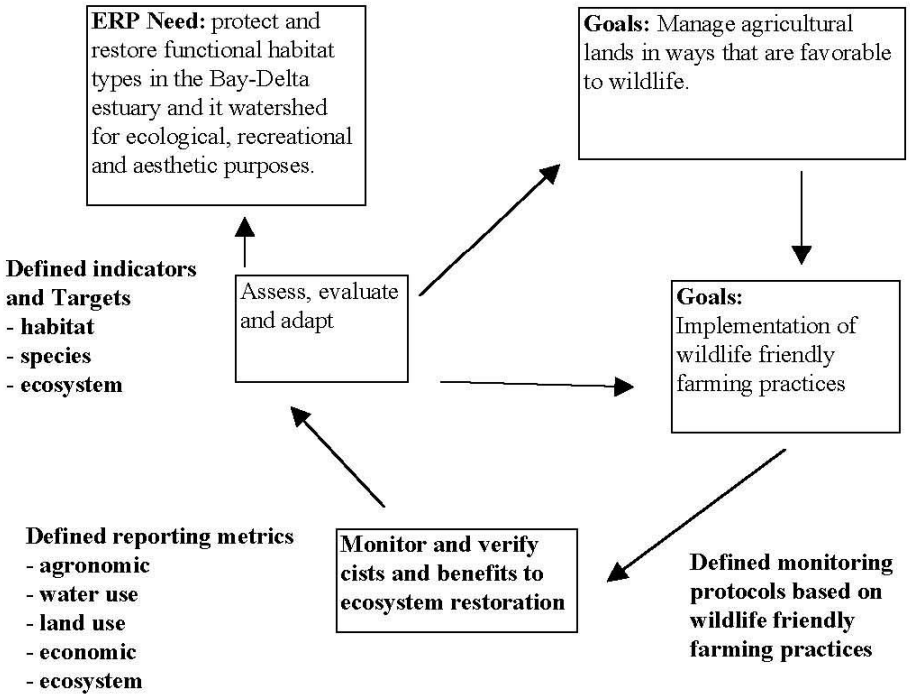

Figure 1: Adaptive Management Model for the Ecosystem Restoration Program
Conceptual model of habitat types based on implementation of wildlife friendly practices. This project will link the implementation of practices with ERP goals. This will be done at the project level and aggregated regionally.

One of the objectives of the ERP is to protect and restore functional habitat types in the Bay-Delta estuary and its watershed for ecological and public values such as supporting species and biotic communities, ecological processes, recreation, scientific research, and aesthetics. AWMC will develop monitoring and verification protocols for the implementation of conservation farming practices to measure their contribution to the objective. To evaluate the effectiveness of these projects, the state must clearly identify its data needs and objectives and communicate the appropriate performance indicators. The growers must have appropriate and consistent measuring tools and procedures to demonstrate the contribution of agricultural actions to CALFED objectives.

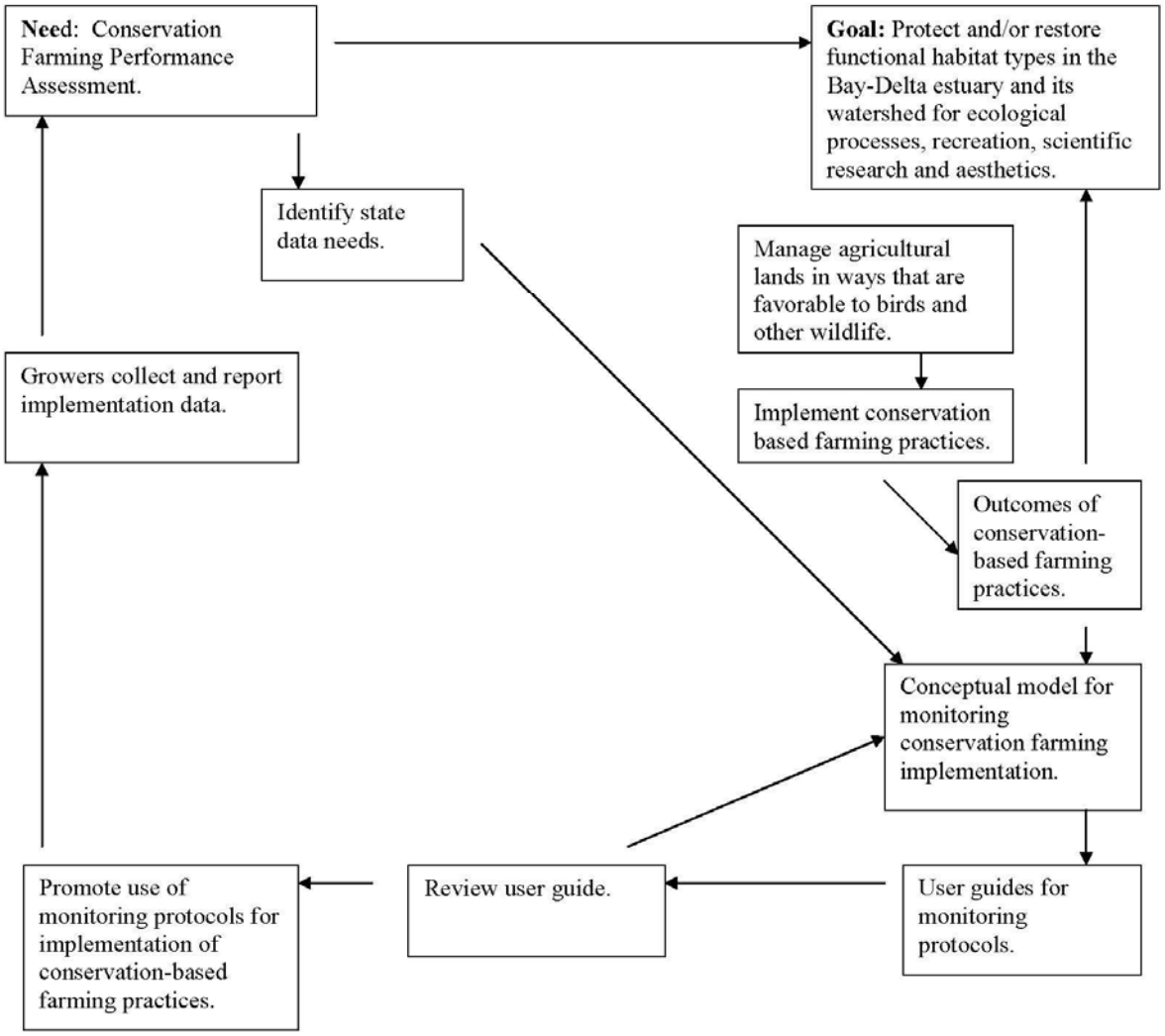

Figure 2: Project Model for Monitoring Protocols.

This Project will further the understanding of the relationship between conservation-based farming activities and restoration efforts.

Farming activities can provide ecosystem benefits. AWMC will identify the farming activities that can provide environmental benefits and evaluate the potential outcomes from implementation with respect to agronomic, economic, water management, environmental and social effects. AWMC will interview ERP participants to identify specific data needs, indicators, and targets that will inform ERP goals.

AWMC will then link the identified conservation farming practices and its outcomes with the ecosystem performance indicators to develop a framework for a monitoring and evaluation protocols.

AWMC will draft the framework into user guidelines for growers. The guidelines will contain specific data collection protocols. AWMC will hold several stakeholder meetings with growers and Proposition 50 grant recipients to review and solicit input and feedback during the development of the protocols. AWMC will use the comments received from these public meetings to revise the user-guides. The protocols developed must be 1) practical and implementable by growers and ERP participants, and 2) result in consistent data collection for the assessment and documentation of project performance.

The consistent data collection and reporting will enable the state to measure benefits from conservation based farming practices and reassess its progress toward meeting the stated goals.

4. Approach and Statement of Work

STATEMENT OF WORK

Task 1 Administrative project management.

This task is specified in the budget for correspondence on grant administration, correspondence with funding agency and invoicing. Administration for each subsequent task is included through AWMC personnel.

Budget: $6,451.20

Task 2 Identify and describe conservation farming practices.

AWMC will identify farming practices that have been determined by ERP and CALFED agencies as providing benefits to the environment. Several conservation farming practices have been identified by the ERP as a priority. AWMC will also include practices listed in the Farming for Wildlife: Voluntary Practices for Attracting Wildlife to Your Farm, developed by the California Department of Fish and Game.

AWMC will identify conservation farming actions that could be implemented that may contribute to the different ERP goals and objectives. AWMC will define the activities and describe the facilities and infrastructure required.

Deliverables:

Technical Memorandum identifying and describing the conservation farming actions and required facilities to implement each action.

Budget: $11,150

Task 3 Identify and describe the conservation effects and outcomes of farming activities.

AWMC will describe the conservation effects and outcomes of implementing conservation farming practices. Each action implemented targets one or more ecosystem restoration objectives. However, these farming activities may also result in outcomes that impact the

potential effectiveness of implementing other activities that also contribute to ERP objectives. For example, on-farm improvements, such as converting to drip irrigation could decrease applied water; thereby eliminating tailwater and field water runoff for wetland habitat.

AWMC will identify the potential agronomic, economic, social, and environmental effects of implementation with respect to the grower and the state. AWMC will identify the potential effects by reviewing pertinent literature, conducting interviews (NRCS and universities), and surveying the AWMC membership.

This task will critically analyze the possible targeted outcomes and consequential effects that may result from an action described in Task 2.

Deliverables:

Methodology Technical Memorandum- This technical memorandum will describe the conservation and consequential effects aligned with each action for the listed conservation farming practices. AWMC will cite references for how the consequential effects were determined.

Budget: $35,420

Develop monitoring and evaluation protocols.

The purpose of this Project is to establish a common framework among growers for measuring the performance of conservation farming practices toward achieving CALFED objectives. This task will incorporate information gathered in Task 2 and 3 into monitoring and verification protocols to assure that growers collect consistent data measurable to CALFED objectives. Improved monitoring and verification will ensure that public money is spent effectively and will provide valuable knowledge about the effectiveness of conservation farming techniques to achieve increased water savings and benefits towards CALFED's goals.

Task 4 Understand the State's data needs as related to agricultural actions and CALFED objectives.

AWMC will coordinate with CALFED agencies and the ERP to identify specific data needs to allow for performance assessment of CALFED objectives. AWMC will incorporate these data needs into the monitoring and verification protocols to facilitate comparison between the effects of conservation farming actions and CALFED needs. This task will enable CALFED to understand how agricultural actions could address multiple ecosystem restoration objectives, and will ensure that the monitoring and verification protocols developed will meet CALFED data needs.

Deliverables:

Meetings with CALFED staff to review State data needs.

Interview Identification Memorandum- A memorandum that will list those interviewed and meeting participants as well as interview questions.

Data Needs Summary Report- This report will compile data provided by the

interviews.

Budget: $ 24,980

Task 5 Develop a framework encompassing conservation farming practices.

AWMC will develop a framework for monitoring and verification of all the conservation farming practices listed in Task 2. The framework will link the practices identified in Task 2 with the consequential effects identified in Task 3 and the data needs identified in Task 4. The conceptual framework will include specific project performance measures that can assess the agricultural actions and their contributions to ERP goals and objectives. The framework will also show the relationship between agricultural actions and the increase MSCS-covered species abundance and distribution. This analysis will be done at the project level and scaled to the regional level.

AWMC will develop the conceptual framework by reviewing pertinent literature. The framework will be completed through a series of brainstorming and work sessions.

Deliverables:

Technical Memorandum describing the framework for monitoring and verification of the conservation farming practices actions. AWMC will cite all references used. This will include metrics and the indicators that the metrics inform.

Budget: $41,930

Task 6 Develop data collection and computation protocols to estimate environmental benefits.

AWMC will use the framework developed in Task 5 to develop data collection and computation methods necessary for the monitoring and verification protocols to estimate restoration benefits. Pre and post metrics will be developed.

Pre-project data is important for 1) developing conservation estimates before a project is implemented, and 2) establishing a baseline. Growers do not have comprehensive or consistent data to make an accurate estimate or pre-project conditions. In most of these instances, the grower should review the monitoring and verification protocol and consider collecting the required data for a year prior to implementing the action. Each protocol will also define the with-project data necessary to perform an environmental benefit assessment.

AWMC will provide recommended monitoring and verification protocols and preferred data for the conservation farming activities identified in Task 2.

Deliverables:

Report recommending data collection activities necessary with emphasis on pre-project data.

Technical Memorandum describing the methodology for the data collection.

Budget: $23,370

Task 7 Develop user guides including sample calculations.

AWMC will write user guides for the data collection and computation protocols. These guides will be tailored to a general grower and easily adaptable to the specific conditions of the farm. The guides will emphasize that when monitoring and verification protocols are followed, the grower can show a measurable contribution to the CALFED goals and local benefits. For example, if a grower implements fall flooding then the information that would be collected would include the new acreage flooded along with an assessment of the type of resulting habitat.

These user guides will include a sample calculation based on real data if available or by synthesizing reasonable sample calculations where necessary. AWMC will provide an opportunity for growers to comment on the user guides through regional meetings, email and on the AWMC website (this is elaborated further in Task 9: Stakeholder Outreach). AWMC will review the comments and incorporate them, if possible, into the user guides.

Deliverables:

Conservation Farming Activity User Guides- For groups of conservation farming action identified in Task 2, AWMC will write user guides for explaining the data collection and computation protocols required to estimate environmental benefits including a sample computation.

Budget: $14,675

Task 8 Create database to report and manage data.

The objective of this task is 1) to build a database driven application for the State and CALFED that will house monitoring and evaluation data and that can be used to measure performance toward achieving regional and local objectives and 2) develop user friendly reporting forms for growers that can be easily input into CALFED's database. This task combines the efforts of both Tasks 2, 3 and 4 by linking CALFED science needs to agricultural actions.

AWMC will create a relational database structure using Microsoft Access that facilitates storing information. The draft database design will store the following information:

- Grower
- Activity
- Location (CALFED Region and waterbody);
- Monitoring Data (physical, quality and cost);

AWMC will add more fields to those listed above and create new database tables as the data structure is developed and finalized. AWMC will provide the database for future monitoring and

evaluation uses. AWMC will facilitate a training session and provide documentation for CALFED staff regarding the use and management of the application.

In conjunction with database application development, AWMC will also create reporting forms for growers, to assist in data reporting, such as inputting existing pre-project data. The database will present an efficient and suitable method for growers to input their monitoring data and a straightforward means to transfer the data to the database. The reporting forms will incorporate the data needs of the CALFED elements identified in Task 4.

AWMC will work with a subset of Proposition 50 grant recipients to assist with the development of the reporting forms. AWMC anticipates that the focus group would involve two to three meetings with a group of five or six applicants.

Deliverables:

Conservation Farming Monitoring and Evaluation Database-The Microsoft Access database will include the appropriate fields and information to track the progress of agricultural WUE efforts and identify agricultural contribution to CALFED goals.

Conservation Farming Monitoring and Reporting Forms- The forms will facilitate efficient inputting of monitoring data into the database.

Three meetings with Proposition 50 grant recipients.

Budget: $23,850

Task 9 Stakeholder involvement and outreach.

AWMC will keep stakeholders updated and involved during implementation of the Project. AWMC maintains relationships with the majority of the agricultural water suppliers, resource conservation districts, and county Farm Bureaus. AWMC will optimize these relationships to market the monitoring protocols to the growers. In addition, AWMC will pursue technical cooperation from environmental stakeholders during the process. Effective outreach is imperative to ensure grower participation and Project success.

AWMC public outreach objectives for the proposed Project include:

- Develop and implement a process whereby growers are informed of Monitoring and Evaluation Protocols; and

- Provide the opportunity for growers to share ideas and input on the implementation of conservation farming practices.

The activities described below will inform stakeholders on how implementation of the proposed Project will demonstrate the benefits achieved by implementing conservation based farming practices. Also, to encourage stakeholders to provide ideas and feedback that will result in monitoring and verification protocols that meet the needs of CALFED but are also feasible from

an agricultural perspective. The outreach efforts seek to create a collaborative working environment where the results will meet the needs of all stakeholders.

AWMC will focus on three levels of outreach:

Notification Activities

AWMC will use several methods to notify growers and the public of the Project. AWMC will mail an announcement to agricultural water supplier members, resource conservation districts, local Natural Resource Conservation Service offices, and county Farm Bureaus. AWMC will post an announcement in an issue of the AWMC quarterly newsletter, Best Management, and the Association of California Water Agencies newsletter, ACWA News, and trade publications to notify the agricultural community about the project.

AWMC hosts a full functioning website at www.agwatercouncil.org that provides tools and resources for agricultural water suppliers and water users to support the advancement of water use efficiency activities. AWMC will add a feature to the website that describes the project, including the scope and schedule at the beginning of the project. The monitoring and verification protocols will be posted to the AWMC website alongside other technical resources that agricultural water suppliers can share with their water users. Already posted to the website are monitoring protocols for water use efficiency activities.

Information Activities

AWMC will work to continuously provide information updates to interested parties. The main information activities will focus on helping users to apply the information contained in the user guides. AWMC will work to educate growers on the contents and methods in the user guides through public meetings and individual contact with Proposition 50 grant recipients.

AWMC will conduct public meetings at the conclusion of the Project as a training session for interested growers. AWMC will publicize this meeting on its website and in the initial mailings as part of the notification activities. AWMC will work to try to time this meeting to be at the same time and location as regular AWMC quarterly meeting to boost meeting attendance. All interested parties will be encouraged to attend. AWMC quarterly public meetings are attended by stakeholders in the agricultural community throughout the state including members of environmental and public interest groups, the academic community and representatives from DWR and USBR, and CBDA. AWMC will also invite additional stakeholders through the notification activities above.

AWMC will make an assertive effort to contact recipients of Proposition 50 in order to make the protocols available and assist with the monitoring and evaluation of the funded conservation based farming practices.

Participation Activities

In the initial mailings and website information on the Project, AWMC will include information regarding two public meetings. Disseminating meeting information in this way will ensure that the information reaches growers and other interested stakeholders.

The public meetings will be scheduled to correspond with critical milestones on the Project. AWMC will conduct the first meeting after drafting the methodology used to develop monitoring and verification protocols. The second meeting will be scheduled after the draft user guides are available. During these meetings, AWMC will explain the draft methodology and draft user guides and solicit stakeholder input. AWMC will attempt to schedule these meetings at the same times and locations as other regional agricultural meetings or conferences to increase public participation.

Deliverables:

Notification

Mail project announcements to agricultural water suppliers, resource conservation districts, county Farm Bureaus, and Proposition 50 grant recipients.

There will be two mailings; 1) to publicize regional meetings to solicit grower and stakeholder input on draft monitoring protocols; and 2) to publicize regional meetings to educate growers and stakeholders on how to use the monitoring guides and the availability of the materials.

Notification of the Project will be included in the AWMC quarterly newsletter publication, Best Management.

AWMC will notify other agricultural publications of the Project.

Information

Draft guidelines will be posted to the AWMC website for stakeholder comments.
Final guidelines will be available for download from the AWMC website.
Project progress reports will be given at the AWMC quarterly meetings.

Participation

AWMC will host 6 regional meetings.

Stakeholder Feedback-AWMC will host three regional meetings to solicit grower and other stakeholder input and comments on the draft methodology used to develop the monitoring and verification protocols.

Training Sessions—AWMC will host three training sessions to work with growers, other Proposition 50 grant recipients, and other interested stakeholders on how to use the protocols and user guides.

Budget: $18,140

Table 1 Proposed Project Start and End Dates and Task Budget			
	Start Date	**End Date**	**Cost**
Task 1: Administration	1/1/07	**1**2/31/09	$6,451.20
Task 2: Identify farming practices	1/1/07	5/1/07	$11,150
Task 3: Identify implementation outcomes	4/1/07	2/1/08	$35,420
Monitoring and Evaluation protocols			
Task 4: ERP Interviews	10/1/07	2/1/08	$24,980
Task 5: Monitoring Framework	11/1/07	10/1/08	$41,930
Task 6: Data collection and computations	4/1/08	3/1/09	$23,370
Task 7: Develop user guides	4/1/08	6/1/09	$14,675
Task 8: Develop data reporting database	10/1/08	8/1/09	$23,850
Task 9: Stakeholder involvement and outreach	1/1/07	12/31/09	$18,140
Complete Project			**$197,466.20**

Table 2
Project Schedule

	2007	2008	2009
Assumes Contract Start Date of 1/1/07	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9
Task 1: Administrative.			
Task 2: Identify conservation farming activities.			
Task 3: Identify outcomes of implementation of conservation farming activities.			
Task 4: Identify state data needs.			
Task 5: Develop a conceptual framework for monitoring.			
Task 6: Develop data collection and computatuion protocols.			
Task 7: Develop user guides.			
Task 8: Create database to report and manage data.			
Task 9: Outreach.			

5. Performance Evaluation

A critical factor for project success is developing monitoring and evaluation protocols that are 1) practical and implementable by growers and 2) result in the consistent collection, reporting, and management of relevant data that allows for the assessment and documentation of implementation performance. The monitoring and assessment plan is structured to monitor these criteria, as well as:

- Document the benefits of conservation farming practices; and
- Mark the progress of conservation farming implementation.

AWMC will be collaborating with CALFED staff, other ERP participants and growers with the development of monitoring and evaluation protocols. The benefits of the proposed project will largely be ensured through the collaborative development of the protocols, including the incorporation of suggestions and feedback received on the development of protocols and the associated implementation performance database. Suggestions and feedback received from CALFED, ERP representatives, and growers will be compiled and provided to CALFED to document that the feedback was included in the final protocols.

Project progress will be tracked by the AWMC and reported to CALFED, including both technical and budgetary progress. AWMC will submit monthly progress reports and associated invoices with task level detail reflecting technical and budgetary progress during the proceeding month. Invoices will be required to include the percent complete by task through the current invoice period.

Project progress will also be demonstrated through the submittal of deliverables as described in the previous section, Statement of Work. AWMC has been careful to link the project goal and objectives to individual tasks described in the Statement of Work. The work and associated deliverables defined under each task directly relates to a corresponding project objective. A project objective will be successfully satisfied at the completion of each task. This direct link between project objectives and task activities/deliverables provides CALFED with direct evidence of the activities that will be completed to successfully satisfy each objective.

Currently the AWMC website (www.agwatercouncil.org) hosts four monitoring and verification protocols that were developed for water management actions. These protocols provide an example of the type of information that will be developed.

6. Feasibility

The Project is not dependent upon the participation of other agencies or organizations. AWMC is proposing to develop technical assistance materials and the project does not involve physical conditions, property, or commodity markets. No permits or environmental or state agreements are necessary to complete this project.

The Project does include the participation of ERP and CALFED representatives. It does not request much staff time. Their participation would enrich the product, but is not essential for project completion.

AWMC also has included in this proposal meetings with growers and grant recipients to review and comment on project findings. Again, grower participation in the Project is not essential to the Project's completion; however, it does add value to the materials produced and its overall applicability and accuracy.

7. Data Handling and Storage

The AWMC has a track record of providing information to stakeholders and the general public. All deliverables developed, along with all raw data will be made available on the AWMCs website (www.agwatercouncil.org) and through CDs upon request. In addition the AWMC maintains a staff of three that are available to guide users to the various sections of their website.

AWMC will prepare technical memorandums along with each task to document the assumptions and methodology for developing the monitoring protocols. This will ensure quality of the product. Reviewers will be able to trace the development of the methodology to ensure that the data collected from the protocols will be used in an appropriate context. The goal of this project is to create monitoring protocols that can be duplicated for future monitoring of conservation farming practices implementation.

As a deliverable of this project AWMC will supply CALFED with both hard and electronic copies of the technical memorandums. AWMC will also provide CALFED with a database structure and input forms for housing and recording and requesting data from projects and conservation practices.

8. Information Value

The monitoring and verification protocols developed from this project will significantly further understanding of the relationship between agricultural actions and ecosystem benefits. The Project will improve growers' and the State's understanding of the outcomes and consequential effects from implementation. AWMC will create a structure for data recording that will allow for analysis of past, on-going and future agricultural related restoration efforts. The protocols will allow the State to begin consistent and comparable data collection on conservation activities and to evaluate contributions to the CALFED goals.

9. Public Involvement and Outreach

See Task 9; Stakeholder Involvement and Outreach, under Section 4 Approach and Scope of Work.

B. Applicability to CALFED

1. ERP Priorities

This project will contribute to understanding the effectiveness of different conservation-based farming practices and systems, and their contribution to larger restoration efforts. This project will study the practices that integrate agricultural activities with ecosystem restoration. It will further study and identify the outcomes and consequential effects of the economic, agronomic, social, and environmental benefits, and costs associated with agricultural activities benefiting wildlife.

The development of consistent protocols will enable accurate and consistent measure ecosystem restoration benefits; therefore, CALFED can readily assess how agricultural actions contribute to CALFED goals. Improved monitoring and verification will ensure that public money is spent effectively and will provide valuable knowledge about the effectiveness of conservation-based farming techniques to achieve environmental improvements and benefits toward CALFED Bay-Delta goals.

2. Relationship to Other Ecosystem Restoration Actions or Program Investments

Water Use Efficiency element of CALFED is an objective based program that pursues the CALFED goals through irrigation water management. Over the past four years there has been an effort to push irrigated agriculture to implement locally cost effective water management actions and to pursue grant funding for non-locally cost effective state benefits. One of the stated objectives (http://calwater.ca.gov/Archives/WaterUseEfficiency/WaterUseEfficiencyQuantifiableObjectives.shtml) is to implement practices that support wildlife friendly agriculture. A major obstacle in this effort is that there is no quantified information that local agencies such as water and irrigation districts can use to design a program. By quantifying the benefits this proposal will enable greater participation by growers and local agencies.

3. Additional Information for Proposals Involving Land or Easement Acquisition.

This project does not involve land easement or acquisition.

C. Qualifications and Organization

AWMC is a non-profit organization established in 1996 dedicated to bringing together all interested parties in agricultural water management. AWMC formed as a result of AB 3616--the Agricultural Water Suppliers Efficient Water Management Practices Act of 1990. The purpose of AWMC is to work with agricultural water suppliers to improve water management efficiency

and to demonstrate to the public and water industry how agricultural water and resources are efficiently used.

AWMC maintains a unique position in the agricultural community to provide technical assistance and data to water suppliers, water users, and the public interested in California water and resource management. AWMC has formed partnerships with the California Department of Water Resources, U.S. Bureau of Reclamation, California Bay-Delta Authority, California Department of Food and Agriculture as well as members from the agricultural community and environmental and public interest groups. All are signatories to the AB 3616 Memorandum of Understanding (MOU). Partnerships strengthen the consensus-based actions of the AWMC and ensure various points of view are represented in the AWMC actions. AWMC continues to seek partnerships with those interested in efficient water resource management. Over 100 water suppliers and water resources conservation districts are signatories to the MOU. AWMC represents over 5.5 million irrigated acres, more than half of the state's total irrigated land.

AWMC has a history of managing successful grants with CALFED, USBR, and DWR. This Project would be an extension of the many technical services AWMC provides to water suppliers and water users to improve water use efficiency. Many of the conservation farming practices involve water application, water management, and irrigation scheduling. Promoting wildlife friendly farming practices aligns with AWMC's purpose to advance water management while enhancing the natural environment.

Mike Wade, Project Administrator
Mr. Mike Wade is the Executive Director of AWMC. He is responsibly for the operation of the statewide non-profit organization. AWMC is recognized as the lead organization overseeing agricultural water management activities and the improvement of agricultural water use efficiency. Mr. Wade will be overseeing the project's progress and completion of deliverables.

Kathryn Charlton, Project Manager
The Project Manager will be Ms. Kathryn Charlton. Ms. Charlton is a resource economist and has been responsible for carrying out program activities for the AWMC since June 2002. With AWMC she has developed an outreach strategy to reach agricultural water suppliers that were not AWMC members and increase the reporting of agricultural water management activities. She has directed several grants with USBR, DWR and CALFED, including the integration of the CALFED Targeted Benefits and Quantifiable Objectives into local water management actions. Ms. Charlton will manage the project track project progress, invoices, prepare user documents as well as conduct all the stakeholder outreach activities.

Mark Roberson, Soil and Water Scientist
Dr. Roberson will be under contract to serve as the soil and water specialist. Dr. Roberson has over sixteen years of experience in water management and has worked for growers, local, state and federal agencies on water management issues. To further his technical knowledge of irrigation and drainage water quality, he studied as a USDA National Need Fellow and obtained a Ph.D. in soil chemistry. He has a comprehensive understanding of irrigation district operations, on-farm water management and drainage, particularly from the perspective of water quality. Presently, he serves as the consulting program manager for the Water Use Efficiency

element of the CALFED Bay-Delta Program. Most recently he managed two projects for the US Bureau of Reclamation- a remote sensing project in the Southern San Joaquin Valley and the development of project monitoring and verification protocols and completed an analysis of ht impacts of water use efficiency improvements on agricultural water use for CALFED Bay-Delta Program. Dr. Roberson will be responsible for investigating the outcomes of implementing conservation based farming practices and will be one of the primary authors of the technical memorandums.

Wetland Habitat Specialist/Ecologist
Other personnel that will be contracted include and expert on wetland habitat within the geographic scope of this PSP. The habitat expert will be responsible for interfacing with the state and federal agencies and for delineating habitat wetland biologist/ecologist to identify habitat benefits.

D. Cost

1. Budget, see attached cost tables.
2. Cost-share and matching funds.

Cost sharing for this project is in the form of cooperation from growers, local agencies and the AWMC. Although the level of effort by growers and local agencies will not be significant it is deliverables on its website and for responding to inquiries.

E. Compliance with Standard Terms and Conditions.

The AWMC will comply with the terms of the ERP grant agreement template.
See Attachment 3.

G. Literature Cited

Ecosystem Restoration Program. 2005. Projects that assist farmers in integrating agricultural activities with ecosystem restoration. Proposal Solicitation Package.

California Bay Delta Authority website. PSP Tools

Farming for Wildlife. 1997. California department of Fish and Game.

H. Non-Profit Verification

Tasks And Deliverables

Task ID	Task Name	Start Month	End Month	Personnel Involved	Deliverables
2	Identify and describe conservation farming practices.	1	4	Charlton, Kathryn Roberson, Mark	1) Technical Memorandum identifying and describing the conservation farming action and required facilities to implement each action.
3	I dentify and describe conservation activities anc consequential effects.	4	13	Charlton, Kathryn Roberson, Mark	1) Methodology Technical Memorandum–This technical memorandum will describe the conservation and consequential effects aligned with each action for the listed conservation farming practices. AWMC will cite references for how the consequential effects were determined.
4	Understand state data needs	10	13	Charlton, Kathryn Roberson, Mark	1) Meetings with CALFED staff to review state data needs. 2) Interview Identification

					Memorandum–A memorandum that will list those interviewed and meeting participants, as well as interview questions. 3) Data needs summary reprot–This report will compile data provided by the interviews.
5	**Develop framework encompassing conservation farming practices**	**11**	**21**	**Charlton, Kathryn Roberson, Mark**	**1) Technical memorandum describing the conceptual framework for monitoring and verification of the conservation farming practices activities.**
6	**Develop data collection and computation protocols to estimate environmental benefits**	**16**	**26**	**Charlton, Kathryn Roberson, Mark**	**1) Report recommending data collection activities necessary with emphasis on pre–project data that can be normalized to the with–project perspective. 2) Technical memorandum describing the methodology for the data**

					collection.
7	Develop user guides	16	29	Charlton, Kathryn Roberson, Mark	1) Conservation Farming Monitoring User Guides– For groups of conservation farming activities identified in Task 1, AWMC will write user guides for explaining the data collection and computation protocols required to estimate environmental benefits, including a sample computation.
8	Create database to reprot and manage data	22	31	Charlton, Kathryn Roberson, Mark	1) Conservation farming monitoring and evaluation database–the Microsoft Access database will include the appropriate fields and information to track the progress of farming efforts and identify agricultrue's contribution to

					CALFED goals. 2) Conservation Farming Monitoring and Reporting Forms–The forms will facilitate efficient inputting of monitoring data into the database. 3) Three meetings with Proposition 50 grant recipients.
9	**Stakeholder involvement and outreach**	**1**	**36**	**Charlton, Kathryn Roberson, Mark**	**1) Mail project announcements to agricultural water suppliers, resource conservation districts, county Farm Bureaus, and Proposition 50 grant recipients/** **2) Two mailings; one to publicize regional meetings to solicit grower and stakeholder input on draft monitoring protocols; and second to publicize training sessions to educate growers and stakeholders on**

					how to use the monitoring guides. 3) Notification of the project will be included in the AWMC quarterly newsletter publication, Best Management. 4) AWMC will notify other agricultural publications of the Project. 5) Draft guidelines will be posted to the AWMC website. 6)Final guidelines will be available for download from the AWMC website. 7) Project progress reportswill be given at the AWMC quarterly meetings. 8)AWMC will host 6 regional meetings. Three regional meetings will solicit grower and other stakeholder input and comments on the draft methodology used to develop the monitoring and

					verification protocols. AWMC will host 3 training sessionts to work with growers, other Prop 50 grant recipients, and other interested parties on how to use the protocols and user guides.
1	Administration	1	36	Wade, Mike	Invoices, and Progress Reports.

Note: This budget summary **automatically links** to the costs and totals on the **"Budget Detail"** worksheet.
DO NOT CHANGE FORMULAS OR ENTER NUMBERS INTO ANY CELLS EXCEPT THE SHADED CELLS for "Cost Share" and "Other Matching Funds"

BUDGET SUMMARY	**Total Amount for Year 1**	**Total Amount for Year 2**	**Total Amount for Year 3**	**Total Amount for All Years**
Total Costs for Task One	$ 1,276.80	$ 1,724.80	$ 3,449.60	$ 6,451.20
Total Costs for Task Two	$ 11,150.00	$ -	$ -	$ 11,150.00
Total Costs for Task Three	$ 31,200.00	$ 4,220.00	$ -	$ 35,420.00
Total Costs for Task Four	$ 15,100.00	$ 9,880.00	$ -	$ 24,980.00
Total Costs for Task Five	$ 4,720.00	$ 25,550.00	$ 11,660.00	$ 41,930.00
Total Costs for Task Six	$ -	$ 11,220.00	$ 12,150.00	$ 23,370.00
Total Costs for Task Seven	$ -	$ 8,100.00	$ 6,575.00	$ 14,675.00
Total Costs for Task Eight	$ -	$ -	$ 23,850.00	$ 23,850.00
Total Costs for Task Nine	$ 1,720.00	$ 2,220.00	$ 14,200.00	$ 18,140.00
Total Costs for Task Ten	$ -	$ -	$ -	$ -
Total Costs for Task Eleven	$ -	$ -	$ -	$ -
Total Costs for Task Twelve	$ -	$ -	$ -	$ -
Total Costs for Task Thirteen	$ -	$ -	$ -	$ -
Total Costs for Task Fourteen	$ -	$ -	$ -	$ -
Total Costs for Task Fifteen	$ -	$ -	$ -	$ -
Total Costs for Project Tasks	$ 64,666.80	$ 62,914.80	$ 71,884.60	$ 197,466.20
1/Cost Share	$ -	$ -	$ -	$ -
2/ Other Matching Funds	$ 2,000.00	$ 2,000.00	$ 6,000.00	$ 10,000.00

1/ *Cost share funds* are specifically dedicated to your project and can include private and other State and Federal grants. Any funds listed in this line must be further described in the text of your proposal (see Chapter 3, Section D, of the PSP document)

2/ *Other matching funds* include other funds invested consistent with your project in your project area for which the ERP grant applicant is not eligible. Any funds listed in this line must be further described in the text of your proposal (see Chapter 3, Section D, of the PSP document)

Environmental Compliance

CEQA Compliance

Which type of CEQA documentation do you anticipate?
X none *Skip the remaining questions in this section.*
− negative declaration or mitigated negative declaration
− EIR
− categorical exemption *A categorical exemption may not be used for a project which may which may cause a substantial adverse change in the significance of a historical resource or result in damage to scenic resources within an officially designated state scenic highway.*

If you are using a categorical exemption, choose all of the applicable classes below.

− Class 1. Operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized above are not intended to be all−inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use.

− Class 2. Replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

− Class 3. Construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure. The numbers of structures described in this section are the maximum allowable on any legal parcel, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

− Class 4. Minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

− Class 6. Basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies. These may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded.

− Class 11. Construction, or placement of minor structures accessory to (appurtenant to) existing commercial, industrial, or institutional facilities, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

Identify the lead agency.

Please write out all words in the agency title other than United States (Use the abbreviation "US".) and California (Use the abbreviation "CA".).

Is the CEQA environmental impact assessment complete?

If the CEQA environmental impact assessment process is complete, provide the following information about the resulting document.

Document Name
State Clearinghouse Number

If the CEQA environmental impact assessment process is not complete, describe the plan for completing draft and/or final CEQA documents.

NEPA Compliance

Which type of NEPA documentation do you anticipate?
X none *Skip the remaining questions in this section.*
− environmental assessment/FONSI
− EIS
− categorical exclusion

Identify the lead agency or agencies.

Please write out all words in the agency title other than United States (Use the abbreviation

"US".) and California (Use the abbreviation "CA".).

If the NEPA environmental impact assessment process is complete, provide the name of the resulting document.

If the NEPA environmental impact assessment process is not complete, describe the plan for completing draft and/or final NEPA documents.

Successful applicants must tier their project's permitting from the CALFED Record of Decision and attachments providing programmatic guidance on complying with the state and federal endangered species acts, the Coastal Zone Management Act, and sections 404 and 401 of the Clean Water Act.

Please indicate what permits or other approvals may be required for the activities contained in your proposal and also which have already been obtained. Please check all that apply. If a permit is *not* required, leave both Required? and Obtained? check boxes blank.

Local Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
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	Required?	Obtained?	Permit Number (If Applicable)
scientific Collecting Permit	–	–	
CESA Compliance: 2081	–	–	

CESA Complance: NCCP	–	–	
Lake Or Streambed Alteration Agreement	–	–	
CWA 401 Certification	–	–	
Bay Conservation And Development Commission Permit	–	–	
reclamation Board Approval	–	–	
Delta Protection Commission Notification	–	–	
state Lands Commission Lease Or Permit	–	–	
action Specific Implementation Plan	–	–	
SWRCB Water Transfer Approval	–	–	
other	–	–	

Federal Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
ESA Compliance Section 7 Consultation	–	–	
ESA Compliance Section 10 Permit	–	–	
Rivers And Harbors Act	–	–	
CWA 404	–	–	
other	–	–	

Permission To Access Property	Required?	Obtained?	Permit Number (If Applicable)
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	–	–	

If you have comments about any of these questions, enter them here.

Land Use

Does the project involve land acquisition, either in fee or through easements?
X No. *Skip to the next set of questions.*
– Yes. *Answer the following questions.*

How many acres will be acquired by fee?

How many acres will be acquired by easement?

Describe the entity or organization that will manage the property and project activities, including operation and maintenance.

Is there an existing plan describing how the land and water will be managed?
– No.
– Yes. *Cite the title and author or describe briefly.*

Will the applicant require access across to or through public or private property that the applicant does not own to accomplish the activities in the proposal?
X No. *Skip to the next set of questions.*
– Yes. *Answer the following question.*

Describe briefly the provisions made to secure this access.

Do the actions in the proposal involve physical changes in the current land use?
X No. *Skip to the next set of questions.*
– Yes. *Answer the following questions.*

Describe the current zoning, including the zoning designation and the principal permitted uses permitted in the zone.

Describe the general plan land use element designation, including the purpose and uses allowed in the designation.

Describe relevant provisions in other general plan elements affecting the site, if any.

Is the land mapped as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance under the California Department of Conservation's Farmland Mapping and Monitoring Program?
X No. *Skip to the next set of questions.*
– Yes. *Answer the following questions.*

Land Designation	Acres	Currently In Production?
Prime Farmland		**–**
Farmland Of Statewide Importance		**–**
Unique Farmland		**–**
Farmland Of Local Importance		**–**

Is the land affected by the project currently in an agricultural preserve established under the Williamson Act?
X No. *Skip to the next set of questions.*
– Yes. *Answer the following question.*

Is the land affected by the project currently under a Williamson Act contract?
– No. *Skip to the next set of questions.*
– Yes. *Answer the following question.*

Why is the land use proposed consistent with the contract's terms?

Describe any additional comments you have about the projects land use.