

Project Information

2005 Proposal Number: 0093

Proposal Title: **Delta Working Landscapes**

Applicant Organization Name: **Delta Protection Commission**

Total Amount Requested: **\$1,274,066**

ERP Region: Delta Region

Short Description

Work with local farmers to implement demonstration projects that improve habitat values while improving water quality, sediment transport, and levee stabilization. Evaluate operations of agriculture practices in the Delta that could be implemented elsewhere. Conduct an educational and outreach festival to inform the public on the values of the Delta.

Executive Summary

: Delta Working Landscapes is a collaborative effort between the Delta Protection Commission, Ducks Unlimited, The Nature Conservancy and Hart Restoration, Inc.. The goals of this project are 1) to improve the environmental quality of Delta farmlands through a variety of demonstration projects; 2: to understand, through a research program, the interplay of social, political and economic factors that hinder implementing these measures on a wider, regional basis; and, 3: facilitating information exchange through working landscape educational events. Pilot project level improvements will include the establishment of hedgerows, vegetated ditches using native and wildlife friendly plants. Levee and bankside revegetation projects will seek to reverse the ongoing trends of habitat elimination on critical nearshore habitats. The outcomes of these efforts t will benefit various aquatic species of special concern, such as splittail, smelt, Chinook salmon. These vegetative improvements will also provide protection from erosion and unintended island flooding. Other pilot projects include: interior berm construction to

facilitate cropland flooding; tailwater/sediment retention pond development to facilitate wildlife habitat and water quality benefits; and seasonal and permanent wetland establishment to increase diversification of working landscapes. In order to multiply the acceptance of these projects to additional landscapes and farming environments, we propose two courses of action. First, we will conduct a study of various incentives and disincentives to environmentally and wildlife friendly farming techniques. This will be conducted through a series of questionnaire, in-depth interviews, and focused group discussions. To facilitate the transmission of this information throughout the region, we propose to host a series of educational working landscape festival events. These events will serve to integrate various Delta stakeholders, principally farmers, but also other community members, non-profit organizations, and government representatives.

Delta Working Landscapes

A. Project Description

1. Problem. Working landscapes are the farms, forests and ranches that provide us with food, fiber and other economical products. An underlying concept of a new “working landscapes” movement is the recognition that these existing lands also provide open space, wildlife and environmental values. And, for good reason, CALFED (1991a) recognizes that agricultural lands can often become surrogate habitat for wildlife. Moreover, through restoration and innovative land management/farming strategies, they can contribute significantly more to these other public resource needs. The economic and resource value of the Sacramento - San Joaquin Delta to California is tremendous. It is one of the most productive of California’s agricultural landscapes. Approximately 60% of California’s water supply passes through the Delta. The Delta’s fish and wildlife resources include numerous species of special concern, such as anadromous Chinook salmon and resident smelt, waterfowl such as sandhill crane and pintail, and several species of plants. The farmlands, wetlands, numerous sloughs and rivers provide a recreational resource for millions of Californians who boat, fish and hunt in the region. There currently is the appearance of an environmental crisis, if not collapse, in the Delta, with numerous media accounts describing the pelagic aquatic system at an historic low point. As an agricultural system, the resource is endangered and in need of protection and repair, both economically and environmentally. This has implications locally, regionally, and state wide. The potential resource enhancement on existing working landscapes is an idea whose time is long overdue. Recognizing this shortcoming, The California Bay Delta Authority’s Ecosystem Restoration Program is seeking “Projects That Assist Farmers in Integrating Agricultural Activities with Ecosystem Restoration.” In the 2005 PSP, a number of kinds of projects are recommended. In this proposal, a partnership of government, nonprofit organizations, landowners and private enterprise offers an innovative program of vegetative buffers, wildlife friendly agriculture, and educational events.

2. Goals and Objectives. The goals of implementing this proposal are: 1) to improve the environmental quality of existing working landscapes in the northern part of the Sacramento – San Joaquin Delta and the lower Cosumnes River through a variety of demonstration projects; 2) to develop an educational mechanism and economic model to transfer environmentally friendly farming knowledge, techniques and practices to other Delta farmlands and stakeholders; and, 3) to facilitate environmental compliance through overcoming disincentives and increasing incentives towards achieving these goals. Specific objectives include: 1a) Creating vegetated buffers on ditch banks and hedgerow plantings that would improve water quality by reducing runoff of sediment and pesticides before these materials reach rivers and sloughs in the Delta; 1b) Vegetating levees with native grasses, sedges and other low-growing species that will stem erosion and lessen the threat of flooding, as well as creating habitat and reducing maintenance costs; 1c) Bank protection, using biotechnical measures to arrest erosion at the bank/river zone that will provide shaded riverine habitat for various aquatic species of special concern;

2) Study existing farming practices in the North Delta that already benefit wildlife, with the expectation that these practices could be transferred to other working landscapes; 3) Public/private outreach through a Delta Working Landscapes Festival concept that would provide an opportunity for farmers, government agencies, the general public, and other stakeholders to communicate with each other about the future role of working landscapes to the economy and the environment; and, 4) A study of hindrances to working landscapes as restoration models, through augmenting incentives and alleviating disincentives.

3. Conceptual Model. Figures 1-3 describe the conceptual models for this application. Figure 1 shows the relationships between restorative actions of vegetative buffers to various physical, biological, economic and social/cultural parameters. For hedgerow, ditch, levee and bankside berm environments, vegetative buffers stabilize soil and reduce erosion, lessen the likelihood of levee failure, reduce pesticide use, improve water quality and wildlife habitat, and reduce maintenance costs. Figure 2 shows various approaches to farm stewardship that improve habitat, reduce pesticide input, and lower farm operations costs. Figure 3 is a model of the working landscape festival events and how they serve to educate various Delta stakeholder groups and the public, foster the economy through agri-tourism and ecotourism, and facilitate the formation of a non-profit that would ultimately oversee the role of the event.

4. Approach and Scope of Work. The Delta Protection Commission will serve as the lead agency and will provide general oversight and management of the three principal active partners: The Nature Conservancy, Ducks Unlimited, and Hart Restoration, Inc. This project will additionally involve local farmers, landowners, reclamation districts, business and environmental organizations, and government representatives. The geographical area includes the north Delta and the lower Cosumnes River. Several farmers and their organizations have agreed to participate in this program, including Reclamation District 999. We anticipate that many more farmers will express an interest in having some of the demonstration projects conducted on their property once this project is underway. The survey of environmentally friendly projects will encompass as wide a net of participants as possible. The Nature Conservancy and Ducks Unlimited have specifically developed a number of wildlife friendly farming techniques in the Delta, especially Staten Island, McCormack – Williamson Tract, and on the Cosumnes Preserve. Hart Restoration, Inc. has had extensive experience with the use of native plants for vegetative buffers in the Delta.

The Nature Conservancy and Ducks Unlimited will take the lead with wildlife friendly farming demonstration projects and an incentives research program. Understanding how these approaches, techniques and attitudes can be transferred to a larger area will be the primary focus. Hart Restoration, Inc. will be the lead for the vegetative buffers projects. Hart has successfully applied innovative techniques of the use of vegetation for bank stabilization, levee plantings, hedgerow and ditch improvement efforts throughout the region and will continue this approach for this project.

The three-part program, more specifically, consists of:

Part I. Farmland – Wetland Buffer Restoration. Native plant vegetative buffers that separate farmlands from wetlands serve a multitude of functions. They improve water quality (Lowrance et al., 1984; Gilliam, 1994; Mitsch and Jorgensen, 1989; Rogers and Dunn, 1992), including nitrogen and phosphorous removal (Fustec, 1991) and sediment removal (Clark et al., 1985; Cooper et al, 1987; Hammer, 1989, 1992). The use of wetlands has been specifically considered from the perspective of treating agricultural runoff as non-point sources (Hammer, 1992), removing pesticides (Rogers and Dunn, 1993), and arresting land and bank erosion (Karr and Sclosser, 1978). Vegetative buffers can also reduce herbicide use by creating sustainable landscapes that resist invasion by weeds, and therefore reduce the ongoing maintenance costs. The planting and establishment of various native perennial plant species are known to restoration practitioner, but evidently not to many farmers. Through repeated tillage and application of herbicides, farmers are involved in a weed-herbicide/disking treadmill that contributes to ongoing maintenance costs and suspension of environmental benefits. By planting and establishing native perennial plants as ground cover, exotic weeds can be competitively excluded through shading, resource depletion, increased niche occupation, and other concepts of plant community invasibility (Burk and Grime, 1996; Pokorny, 2002; Sheley and Carpinelli, 2005), etc.

Hedgerows. Modern “clean” farming has eliminated the historic band of ruderal vegetation on farm edges that provides food and shelter for wildlife. Since these accidental strips of vegetation usually consist of weedy species, farmers in time favored the elimination of these problematic areas through mechanical methods and herbicide application. But farm borders can consist of beneficial plant species that are sustainable. In England, there is a long tradition of hedgerow plantings. Hedgerows are intentional linear plantings of favorable vegetation, such as grasses, forbs, shrubs and trees. Planted along the edges of farm fields, they attract beneficial insects, stabilize soil and provide ground cover for wildlife, act as windbreaks, suppress weeds, reduce pesticide use (Santa Cruz RCD & CAFF). A number of native plants would be beneficial in our region, such as sedges (*Carex barbarae*, *C. praegracilis*), grasses (*Elymus triticoides*), native forbs (*Aster chilense*, *Helianthus californicus*), shrubs (*Baccharis pilularis*, *B. salicifolia*), and various tree species (*Quercus lobata*, *Acer negundo*, etc.). Several Delta farmers have expressed an interest in hedgerows. Project objectives for this component of the project will be to plant 15,000 linear ft. of hedgerows with the above mentioned species.

Vegetated Ditches. Most ditches in the Delta are barren, steep embankments that lack wildlife values. In this condition, they serve as a conveyer of pesticides from farm fields to nearby wetlands and rivers. These ditches are constantly sprayed, and lacking a permanent, sustainable plant cover, require constant upkeep. An alternative approach is the establishment of native perennial plant species along ditch banks and on ditch bottoms. These vegetated buffer strips can be done in conjunction with hedgerows. Together, this vegetation can catch sediment that would normally clog up the ditch system, and these plants can serve as a biological filter that will catch and

transform pesticides before they reach rivers and sloughs. These plantings will therefore serve to improve water quality, thereby improving fish and wildlife in general. It is further anticipated that if these efforts are performed on a farmwide or regional basis, they would then serve an added benefit to farmers by fulfilling their ag waiver requirement. Research in the Mississippi River Delta demonstrated that from 60 to 99% of various herbicides were transferred to plant material within 1-3 hours following field runoff (USDA ARS, 2005). Moreover, farmers should benefit economically from the reduction of constant maintenance costs required to maintain barren ditch embankments. In the Delta, vegetative ditches could be constructed with a V-shaped design to foster more vegetative growth and allow for easier wildlife movement. By planting sustainable native grasses, sedges and rushes, ditch vegetation could be fashioned to serve the purpose of water conveyance, but also reduce unfavorable weedy growth and thereby reduce maintenance costs. As mentioned above, these ditches could similarly serve as a filter to trap and transform pesticides before they reach the rivers and sloughs. Project objectives include the planting and successful establishment of at least 20,000 linear feet of vegetated ditch banks using native species.

Levee Restoration. Natural levees differ considerably from human constructed dikes. Natural levees were broad structures composed of naturally deposited materials and covered with abundant natural plant life. The thicket of plants, including the extensive root systems, resulted in relatively stable structures. The pre-reclamation delta landscape was a stable one, and though the islands flooded on a regular (daily/seasonal) basis, the levees did not experience catastrophic breaks as modern ones do (e.g., Jones Tract levee in 2004). Some aspect of modern levee maintenance run counter to known concepts that vegetation can contribute to landform stability. For example, levees are often over-grazed and the use of herbicides is excessive, resulting in highly barren, erosive conditions. In this proposal, we propose restoring levees to a more stable condition through the plantings of native grasses, sedges, and the use of some small stature shrubs and trees whose root systems increase soil shear strength, but do not present a problem through tree fall. The waterside of levees is managed differently than the landside. The waterside is a zone where plants must hold the soil together through current deflection, wave reduction, and root shear strength improvement. Another concern with Delta levees is their extreme porosity, due to their sandy (non-cohesive) nature. Another benefit of appropriately located plant species is that these plants foster deposition of fine materials. Fine materials are recognized as a necessary ingredient to retard water piping through levees. The landside of levees should be managed as a short grassland environment that can foster visibility (to see levee breaks), yet provide enough cover to arrest potential erosion. Should islands flood, the inside levees can be subjected to extreme wave erosion. Therefore, a buffered armoring of plants – trees, shrubs – should be located just beyond the toe of the inside levee to potentially protect the levee from wave energy. The project objectives include the establishment of 3-4 acres of native plants on levee slopes.

Bankside Revegetation. Under the auspices of current California Bay-Delta Authority Restoration Program funding (#97-N13, “Tyler Island Levee Protection & Habitat Restoration Plan”; #99-B106, “East Delta Habitat Corridor (Georgiana Slough”), and various Department of Water Resources (DWR) and U.S. Army Corps of Engineers (Corps) contracts, a number of bankside riparian and tidal marsh habitat restorations using innovative biotechnical means of erosion control and bank protection have been implemented. These methods are “low-tech” and cost-effective. They have the advantage of involving minimal planning effort and permitting time, thus ensuring a quick turn-around of on-the-ground habitat restoration. In the last 6-7 years, Hart Restoration, Inc. has installed many linear miles of various shoreline restoration and “soft” bank protection measures in the Delta, including Georgiana Slough, Steamboat Slough, Miner Slough, Sacramento River in various locations, Mokelumne River, and Suisun Marsh. The approach for this project is the continued application of biotechnical (or bioengineering) techniques and materials that include structural elements, including organic materials (and occasionally rock features). They provide immediate bank protection until the vegetation matures sufficiently to effectively protect the river bank and tidal marsh environment. The recognition that protective, biotechnical features can add to site stability and habitat enhancement is gaining increased attention. The relationship of vegetation to riverbank stability has been well documented in the literature (Rosen, 1980; Schiechl, 1980; Gray, 1989a; Coppin, 1990; Gray, 1996b; Micheli et al., 2004), although the benefits to levee maintenance and erosion control generally are not appreciated among flood control professionals. Likewise, wetland and aquatic plants exert a strong influence on the hydrodynamics of waves (Leonard, 1995; Coops, 1991; Coops, 1994; Coops, 1996a; Coops, 1996b; Chambers, 1991; Foote, 1988). Various interactive relationships between plants, hydraulic dynamics, and sediment have been described in the literature, including: (1) the role of sediment in riparian plant recruitment (McBride, 1984; Malanson, 1993); (2) plants as agents in flow resistance (Hickin, 1984; Watson, 1987); (3) the role of plants in reducing erosion, both surficial and from bank failure (Gray, 1996; Coppin, 1990; Schiechl, 1994; Gray, 1989; Gregory, 1988; Kondolf, 1981; Smith, 1976); (4) plants as a nuclei for sedimentation (McBride, 1984; Malanson, 1993); and (5) the influence of plant architecture and vegetation characteristics on the occurrence of erosion and sedimentation (Coppin, 1990). A study by Hershey et al. (1994) demonstrated that the presence of vegetation was associated with levee stability during the 1993 Mississippi River floods compared to areas lacking comparative plant cover. Through Hart Restoration, these approaches will continue in several new areas, including Steamboat Slough on Ryer Island. The project goals for this phase of the project include the successful establishment of 1250 linear ft. of bank protection using methods described above (especially brushbox technology).

Part 4A, described above, will be managed and implemented by Hart Restoration, Inc., based in Walnut Grove, in the north Delta. Overall, we anticipate that 40,000 linear ft. of vegetated buffers will be created on a diversity of properties throughout the Delta. Hart will implement the initial planting and early maintenance, but once the plants are established then the local landowners will be responsible for their

maintenance. To that end, Hart will engage the landowners, including their farm workers, with training session on identification and management of these native plant resources. The implementation of this part of the project will benefit a number of Delta species. By serving as a model for reducing non-point sources of water pollution, nearly all species of special concern will benefite.

Part II. Wildlife and Environmentally Friendly Farming Techniques.

Pressures such as development sprawl and increased water supply needs, as well as the conversion of traditional row crop lands (e.g. corn, wheat, barley) into vineyards and orchards has lead to the alteration of tens of thousands of acres of natural habitat and potential wildlife-friendly farmland in and around the Delta. These urban pressures and changes in land use practices have seriously impacted the habitat function and values within the Delta while simultaneously increasing the need for Delta farmscapes to serve as both agriculturally productive land and surrogate wildlife habitat for numerous native species. CALFED has recognized this by integrating the development and protection of working landscapes into their multi-year restoration plan for the Delta.

Agricultural operations that incorporate wildlife enhancement practices can provide increased wildlife benefits, provide wildlife observation and hunting opportunities, and substantially benefit the farming operation. One example is developing post-harvest flooding as the preferred method for controlling undesirable weeds. Early post-harvest flooding of agricultural fields in the Delta can effectively control Johnson grass. Other benefits to utilizing this practice are improved water quality through a reduction in herbicide use, increased waterbird habitat, reduction in soil loss from wind erosion, and lowered operational costs by reduced tillage. The increased use by wildlife can create additional opportunities for the landowner to profit from the land including eco-tourism or hunting leases.

In 2001, TNC, using CALFED and DWR Flood Protection Corridor funding, acquired Staten Island, recognized as one of the premier working landscapes in the Delta. Staten Island has one of the highest concentrations of wintering sandhill cranes in the Pacific Flyway and is home to large populations of wintering waterfowl, shorebirds, hawks and a variety of other native species. Previous to the acquisition, TNC, DU and Cosumnes River Preserve staff collaborated with Staten management on various habitat and wildlife friendly farming issues, thus allowing staff to gain a better understanding of the specific techniques that Staten management could practice in order to produce high quality habitat in their croplands.

Following the acquisition, TNC hired wildlife experts to further evaluate Staten's farming and management practices. These combined efforts have documented a variety of effective wildlife friendly farming techniques that Staten Island management has used to ensure a productive, high quality working landscape. This collaboration of various interests coupled with the success of incorporating the wildlife friendly practices while maintaining the economic viability of the farming operation is the model of achievement that the Delta desperately needs.

While Staten Island is one of the most notable models of success, there are other farming operations in the Delta that have incorporated wildlife friendly farming practices. Mandeville Island has converted a significant portion of its acreage to seasonal and permanent wetlands. Other Delta Islands such as Venice, Bouldin, Ringe and MacDonald have successfully established wetland units for various purposes. Through the assistance of Ducks Unlimited and funding from State Water Resources Control Board, rice production has been an increasing biological and economically viable crop. Wildlife benefits from rice are well documented, however the application of rice production in the Delta has furthered understanding of how rice production can retard or revert subsidence, reduce DOC and Nitrogen discharges, and reduce soil erosion. Results from this effort are forthcoming, however preliminary data is highly favorable to meeting conservation and farming objectives.

Though the efforts of implementing wildlife friendly farming practices have been successful on smaller scales, the Delta farming community as a whole has not utilized these techniques. Some in-field wildlife friendly practices can be very simple and economical to employ, while others may involve more planning and coordination. Implementation of these practices provide benefits that speak directly to the objectives of CALFED's Ecosystem Restoration Program and the integration of agricultural activities into ecosystem restoration.

TNC and DU will work with the Delta farming community to determine and promote as many of these practices as possible. Discussions with the farming community will help determine the applicability of each practice. Then through a selection process, demonstration projects will be constructed on the properties of willing landowners and farming operations.

The techniques that will be assessed and promoted include: Tillage, Early Planting / Early Harvest, Post-Harvest Flooding, Diversity of Field Conditions, Fallow Fields, Seasonal and Permanent Wetlands, Tailwater Ponds, Plant Wildlife Food Plots, Plant Cover Crops, and V-shaped Ditches.

Tillage. This practice involves a number of earth cultivating techniques that leaves crop residues on the fields (through chopping), results in increased wildlife food values (grain, invertebrates), improved soil health, improvement in organic soil content, and reduced labor and fuel costs. The chopped residue is allowed to decompose naturally, resulting in less disking being required. A further monetary savings is realized because the chopped residue retards weed growth, which in turn means less herbicide application. Before the planting season, a heavy imprinter pushes the remaining organic residue into the soil, thereby eliminating the need for expensive multiple pass disking.

Early Planting / Early Harvest. Corn is planted and harvested early, which coupled with residues left on the field, results in increased early availability of wildlife food resources. The early timing corresponds directly to the life history

needs of numerous native species including endangered Greater Sandhill cranes and Northern Pintails.

Post-Harvest Flooding. After harvest, fields are flooded to a variety of depths ranging from a few inches to 3 feet. The diversity in depths provides habitat for numerous species of wildlife. Flooded areas make waste seeds and invertebrates available to waterfowl, shorebirds, and waterbirds. Flooded regimes also help break down crop residues such as stubble and speed up decomposition. Depending upon the crop, flooding can occur as early as July to accommodate early arrival and migration of shorebirds and waterfowl. Agricultural benefits from this practice include weed control, retardation of soil oxidation, decomposition of crop residues, reduction of soil loss through wind erosion and runoff, and leaching of salts.

Fallow Fields. The presence of fallow fields provides for a greater diversity of habitat than crop fields alone. Agricultural crops are a great source of nutrients to wildlife, however more than one type of food source is needed to complete an animal's nutritional needs. Ruderal or natural vegetation from fallowed fields can provide the necessary "buffet" of seeds and invertebrates that wildlife require. By deferring management or production on a parcel, natural vegetation can establish and produce a variety of favorable food plants, as well as cover. The agricultural benefits to this practice are an increase in organic matter within the soil, moisture retention, increased soil fertility, reduced operational costs of mowing, disking, and spraying.

V-shaped Ditches. Compared to the typical steep-sided spud ditches, v-shaped ditches permit wildlife, including Giant Garter Snakes and brooding waterfowl, to traverse between the ditch and adjacent vegetative cover areas. The gradual slopes of V-shaped ditches also provide opportunity for emergent wetland and transitional vegetation to establish within the ditches hydrophytic soil. This vegetated zone provides additional cover and food resources to wildlife, while assisting with improving water quality.

Seasonal and Permanent Wetlands. Seasonally flooded wetlands, experiencing an inundated regime only during a portion of the year, and permanent wetlands, remaining in a constant flooded regime, provide different habitat functions and values, yet are both extremely important to resident and migratory wildlife within the Delta. Management of seasonal wetlands typically focuses on two strategies to produce diverse food resources and to make those available to target wildlife. These strategies require flooding during spring months to promote production of seeds from annual vegetation for winter consumption by waterbirds and winter flooding to provide feeding opportunities to wintering waterbirds. Permanent wetlands are managed with a constant flooded regiment that creates reliable water throughout the year, allows for the establishment of permanent vegetation for cover and food resources, and provides brood-rearing habitat in summer.

Seasonal and permanent wetland management provide benefits to Giant Garter Snake, wetland dependent species, “R” species, and harvested species.

Tailwater and Sediment Retention Ponds. Simple earthen ponds connected to an Island’s drainage system and located near the terminal discharge station or at the nexus of several irrigation ditches can offer many benefits. Sediment collected in the pond can improve water quality and the flooded nature of the pond will aid in ground water recharge. Wildlife benefits with this practice include brood-rearing opportunities for waterfowl, habitat for aquatic species, and habitat for wetland-associated species. Additional farming benefits may include water evaporation, reduced pumping costs, water re-use, fish colonies for mosquito control, and water storage for farm use such as fire fighting.

Plant Wildlife Food Plots. Planting small, intermingled plots of food crops on unused areas of a farming operation can provide considerable benefits to wildlife. Safflower, mile, corn, vetch, and sunflower provide high-energy nutrients to many songbirds, waterfowl, upland game birds, and small mammals. Invertebrates and rodents will provide food to “R” species such as greater sandhill crane and Swainson’s hawk. Though benefits to agriculture may not be directly noted, reduced herbicide use and increased income from hunting are favorable to the farming operation’s overall costs.

Cover Crops. The use of cover crops in agricultural situations can contribute to reducing costs of mowing and disking for weed control, reduce soil loss from wind erosion, naturally increase soil fertility, promote beneficial invertebrate growth such as pollinators, provide nesting cover and foraging habitat for many wildlife species, and improve farm aesthetics. Various beneficial cover crops include: field pea, clovers, vetches, cereal grains, and other legumes. Wildlife use and plant response must be evaluated for management considerations.

Diversity of Field Conditions. A mosaic of differently managed fields provides a greater diversity of wildlife habitat conditions. By incorporating a variety of wildlife friendly land-use practices into a farming operation, the benefits to a greater number of wildlife species will be facilitated. Consequently, these practices can increase the overall economic benefits to the farming operation.

In this task, TNC and DU will use their considerable experience in enhancing farm resource values to determine why more farmers and land stewards don’t take advantage of the multitude of potential practices that could create better habitat and farming conditions on their croplands. This effort will contribute to understanding the relative effectiveness of different conservation-based farming practices and systems, and their contribution to larger restoration efforts. To complete this task two approaches will be taken.

First, TNC will oversee an investigation to determine what potential impediments and incentives there are to farmers interested in carrying out the various techniques described above. This will be completed through extensive interviews with Delta farmers, a review of programs available and discussions with State and Federal resource managers. Potential incentives that will be evaluated will include direct financial assistance, regulatory relief, such as safe harbor agreements, market based incentives and legislative actions. For interviews, a three part approach will be developed: 1) direct question/answer response; 2) in-depth interviews, and 3) focused group meetings. This investigation will attempt to document the reasons why farmers have not applied these practices, as well as determine approaches to overcome these obstacles. The product of this investigation will be a report summarizing the impediments to carrying out wildlife friendly practices and a range of potential incentives that CALFED or other agencies can promote in order to advance the notion of healthy, sustainable working landscapes.

The second approach will consist of implementing demonstration projects consisting of the fore mentioned practices as means to further educate Delta farmers and stakeholders on the benefits of participating in such practices. TNC and DU will work to persuade landowners to implement cost conservative activities such as planting cover crops, delay tillage, fallow fields, and early planting/early harvest. Where appropriate, grant funding will subsidize or cost-share a portion of the landowners expense to implement the practice. If grant funds are used as cost share, a short-term (3-5 years) conservation agreement between the landowner and DU will be executed to ensure that the wildlife friendly practice will be implemented.

Wildlife friendly practices with implementation considerations that require substantial level of resources, design and commitment will be implemented with the oversight of DU. These practices are more wetland restoration and management oriented in nature. Demonstration projects of this type will most likely consist of the construction of permanent, interior berms in order to better facilitate seasonal flooding of croplands, integration of tailwater ponds, and creation of wetland units in areas with marginal crop production. These projects will be implemented by DU using its extensive expertise in designing and constructing earthwork-related wetland restoration and enhancement projects within the Delta. Since these practices will require the use of grant funding, a long-term (5-10 years) conservation agreement will be executed between the landowner and DU.

The implementation of the wetland-associated practices will be performed on farms that have been chosen through a selection process consisting of a set of predetermined criteria develop by the project proponents. DU engineers will perform topographic surveys of the selected fields, and will develop engineered construction drawings for implementation of each practice. DU through contracts with landowners and construction contractors will oversee all aspects of implementing these practices to ensure proper construction has been achieved. DU has California-registered engineers on staff to aid in these efforts.

Wetland-Associated Practices:

Interior Berm Construction to Facilitate Cropland Flooding – DU will oversee the design and implementation of over two miles of interior levees ranging 3 – 4 feet in height. These levees will be placed on multiple fields in a manner to maximize the amount of flooded crop land. The levees will be built in a manner that ensures their sustainability through multiple years of use. These levees will allow for flooding and manipulation of water levels to provide benefits to a host of wildlife species with minimal maintenance cost to the landowners.

Tailwater / Sediment Retention Pond Development to Facilitate Wildlife Habitat and Water Quality Benefits – DU will oversee the design and implementation of tailwater / sediment retention pond systems on two separate farming operations. These ponds will be incorporated into the drainage systems of their representative farming operations, and if possible be located near the terminal pumping station in order to increase the benefits to water quality, sediment retention, and allow for complete drainage in the event of maintenance, avian disease outbreak or mosquito control. Size and capacity of ponds will be relative to location, operation, and practicality of implementation to the selected farming operations.

Seasonal and Permanent Wetland Establishment to Increase the Diversification of Working Landscapes – DU will oversee the implementation of seasonally and permanently managed wetland units on four separate farming operations. Working with cooperative landowners, DU will help identify marginally productive cropland and will enter into an agreement to take them out of production. Through engineering and design, these marginal farming areas will then be converted to seasonally and/or permanent wetlands units that will allow for adequate management and water level manipulation.

Part III. Delta Working Landscape Festival. The funding of the implementation components described in Parts I and II will have limited effect unless a larger farmland community can implement the concepts and practices learned. We propose to communicate and educate the benefits of these resource actions through a series of educational “Delta Working Landscape Festival” events. Throughout “farm America”, similar agri-tourism and ecotourism events promote environmentally friendly farming, healthful foods, music, crafts, and related activities that help to economically sustain these farm areas. We propose to sponsor a Delta based event. This will bring Delta stakeholder pride, local presence, and regional attraction to a multitude of festive and educational events at which habitat and agricultural partners will share the resource values of the working landscapes demonstration projects accomplished with awarded grant funding. Components of developing Delta Festivals would include:

Planning and Development: The DPC will serve as the facilitator and coordinator of public events and tours throughout the Delta with the overall goal of having at least four events a year, one per season. The focus of the events will be to draw community participation and promote regional recognition of the valuable resources of the Delta as

exhibited in the various projects accomplished under the working landscapes grant and to demonstrate the benefits of collaboration between agriculturalist and environmentalist to work and enhance the land. Throughout the year, this format will also provide a much needed core for attracting tours of the Delta to emphasize the agricultural, recreational, and habitat values Delta resources offer, in addition to the generally publicized water and levee aspects. Enhancing and developing an awareness of, and appreciation for, these core values is in keeping with the mission of the DPC pursuant to the Delta Protection Act of 1992.

Character/Format: In keeping with the findings, policies and recommendations of the DPC's Land Use and Resource Management Plan for the Primary Zone of the Delta, the character of the festivals and tours will include aspects of: environment, agriculture, water, recreation and access, land use, utilities and infrastructure, levees, and marine and boater education/safety programs. The local history and cultural significance the Delta brings to the region will be emphasized through the recognized importance of habitat and agricultural influences across County boundaries.

Each festival will emphasize hands-on participation and education. Topics of unquestionable positive value will be emphasized although areas of issue and controversy will also be broached. Opportunities for participant input and feedback will be provided. Poster sessions and community sharing will be encouraged. The reaping benefits of the demonstration projects, including wildlife and produce, will be available for observation and tasting. Agriculturalist, farmers and recreationists will be available participants and all festivals will culminate in a community meal, wine-tasting, or other similar centerpiece for breaking of bread amongst friends new and old.

Outreach/Community Ownership: Community participation and partnership involvement will be an instrumental part of the facilitation and coordination of the festivals and tours. The services of the Non-profit Resource Center will be utilized and the diverse make-up of the 19 member DPC will provide for unlimited cross-county and multi-level support, expertise and sponsorship. Community input in planning and facilitation will be instrumental in assuring the characteristics of the Delta and the region are well represented. Youth groups such as 4-H, FFA, and school service clubs will also provide assistance during the events by taking responsibility for set-up, serving at meal time, and clean-up. Local artists will be called upon for designing flyers, announcements and exhibits. Everyone's perspective will be welcomed. The services of the California Conservation Corps, State Parks, and the Department of Fish and Game, as well as local RCD's, NRCS, RC&Ds, water agencies, and service clubs will be solicited.

Education and Awareness: The festivals will promote local sharing of culture and history as demonstrated through working landscapes projects to bring an awareness and regional recognition of the Delta. Local schools at all levels will be involved in interactive interpretive models established through the demonstration projects. Participation in monitoring and the evaluation of projects through the tides of seasons will be included. Regional and diverse interests will be drawn to the festivals through extensive outreach efforts that will include: press releases; flyers; speakers at functions such as chamber and

rotary meetings; and other community events. Local, state, and federal awareness will be promoted. Delta visioning efforts will be encouraged to be involved. The distribution of T-shirts and bumper stickers will assure that each festival is remembered long after it has concluded.

5. Performance Evaluation. Performance evaluation will be measured through annual monitoring reports. A formal monitoring plan will be submitted prior to initiation of the project. The kinds of information likely collected include: 1) amount of habitat created such as acres created, plant diversity, etc.; 2) number of acres of farmland utilizing wildlife friendly techniques; 3) biological/environmental response such as increased wildlife use, sediment entrapment, reduced pesticide use and movement to waterways; 4) farmer responses to altering farming practices to increase environmental values; 5) number of participants attending event festivals, including surveys of information successfully disseminated; 6) establishment of a non-profit organization that would ultimately serve in a leadership role for Delta working landscapes, including festivals; 7) development of new economic opportunities, through agri-tourism and ecotourism 8) discovery and implementation of policies and incentive measures that could improve Delta resource values.

6. Feasibility. The DPC partners have demonstrated the ability to define goals and objectives, secure funds, and implement complex projects. The use of vegetative buffers is a well documented concept that has been extensively implemented elsewhere. Hart has successfully applied the elements of these restorations, including hedgerows and vegetated ditches on their nursery and farm near Walnut Grove. Hart has implemented numerous biotechnical bank protection projects in the Delta through previously funded Calfed grants and contracts through various reclamation districts, flood control agencies, including DWR. Several farmers and representatives of Reclamations districts have voiced optimism for this project. For previously funded projects (Hart, DU, TNC), project planning and permitting has not proven to be insurmountable. From a planning and regulatory perspective, reconstructing the original bank through passive means and planting riparian vegetation will not negatively affect hydraulic conveyance, and has not raised concerns from local Reclamation Districts or the State Reclamation Board. For most aspects of levee vegetative rehabilitation, changes of State and Federal statutes will not be required for the more conservative alterations herein recommended. For ditch, levee slope (grasses) and hedgerow plantings, permits from State or Federal agencies are not required. Virtually no land transformations requiring engineering are proposed at this stage; hence, these activities would not appear controversial to potentially affected parties. For bankside work, minimal regulatory planning is required for these treatments, since they are implemented with hand labor and passive, natural processes; several permits never-the-less will be required. At the beginning of the project, a meeting will be held with representatives of the U.S. Fish and Wildlife Service (USFWS) and the Corps. As with past projects, a Nationwide Permit Number 13 (NW-13) will be secured to satisfy Clean Water Act Section 401 water quality certification. A general condition (#9) of the NW-13 requires state water quality certification from the Central Valley Regional Water Quality Control Board (CVRWQCB). A California Department of Fish and Game (DFG) Streambed Alteration Agreement also is required for streambed work. Because

this project is considered to be part of ongoing maintenance, it qualifies for categorical exemption under the California Environmental Quality Act (CEQA). Under Title 7 of the U.S. Endangered Species Act, consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service will be solicited. We are unaware of any county zoning laws that would require permits, nor would the legal status of William Act lands be altered to advance this project. For DU wetland projects within island interiors, federal and state permitting is not required.

7. Data Handling and Storage. Data will be captured and stored in various formats, including GIS data (ArcView), photo monitoring (JPEG or other format), tabular format (Excel), and/or relational database (Access). The data will be analyzed using ANOVA statistical methods and will be presented in written, chart, and pictorial formats.

8. Information Value. This proposal is uniquely innovative in its approach to distributing information. First, the interview meetings with farmers will serve to distribute information among this interest group. More importantly, the Working Landscapes Festival Events will serve as a means to distribute this information to numerous interest groups and stakeholders.

9. Public Involvement and Outreach. To facilitate the transmission of this information throughout the region, we have proposed to host a series of educational working landscape festival events. These events will serve to integrate various Delta stakeholders, principally farmers, but also other community members, non-profit organizations, and government representatives. This is described in greater detail in a previous section.

B. Applicability to CALFED Bay-Delta Goals and Priorities

1. ERP, Science Program and CVPIA Priorities. This project supports several of the CALFED Program objectives in improving ecosystem quality, water quality, and levee system integrity. The project also supports several goals of the ERP in improving aquatic and terrestrial habitats. Specifically, implementing this project will aid several of CALFED ERP and Science Program goals, implementation plan and CVPIA priorities. As described in the ERP, several goals are addressed with this project:

- Tidal marsh and riparian habitat restoration (**Goal 4, ERP**).
- Control of non-native invasive species (**Goal 5**).
- Ecosystem processes, trapping of sediment that fosters wetland development (**Goal 2**).
- Water Quality improvements (**Goal 6**).
- Improved habitat conditions for at-risk species (e.g., splittail, smelt, Chinook salmon), (**Goal 1**) and harvestable species (striped bass, salmon) (**Goal 3**).
- Levee stability. The approach taken by this team also contributes to levee stability (Levee System Integrity Program Plan, CALFED 2000) and water quality enhancement (Water Quality Program Plan, CALFED 2000).

2. Relationship to Other Ecosystem Restoration Actions or Programs. This project builds on several other current projects in the Delta and broadens the experimental design already underway by The Nature Conservancy, Ducks Unlimited (Staten Island Wildlife-Friendly Farming Demonstration), The Delta Protection Commission, and Hart Restoration, Inc. for several projects in the Delta. These include for Hart Restoration (#97-N13 and #99-B106 on Georgiana Slough and the North Fork of the Mokelumne River).
3. Additional Information for Proposals Involving Land or Easement Acquisition.

C. Qualifications and Organization

The **Delta Protection Commission** (DPC) represents diverse stakeholders and interests involved in the Delta. Its nineteen members are landowners from the North, South, West, and Central Delta Reclamation Districts, Supervisors from the counties of Contra Costa, Sacramento, San Joaquin, Solano, and Yolo; Council Members/Mayors from the cities of Antioch, Lodi, and West Sacramento as well as three councils of government; and high-level leaders from the State Department of Fish and Game, Parks and Recreation, Boating and Waterways, Water Resources, Food and Agriculture, and the State Lands Commission. Ex-officio members of the Commission are Senator Mike Machado and Assemblywoman Lois Wolk.

The Commission came into existence under the Delta Protection Act (Act) in 1992 in recognition of the increasing threats to the unique and fragile resources of the Delta Primary Zone from potential urban and suburban encroachment having the potential to impact agriculture, wildlife habitat, and recreation uses. In 1995 a Land Use and Resource Management Plan for the Primary Zone was adopted pursuant to the Act. The Plan sets out findings, policies, and recommendations resulting from background studies in the areas of environment, utilities and infrastructure, land use, agriculture, water, recreation and access, levees, and marine patrol/boater education/safety programs. Activities in the Secondary Zone are also monitored to assure the values of the Primary Zone are not compromised.

Several of the policies and recommendations provided in the DPC's Management Plan call for the promotion of community events to provide educational opportunities for developing an appreciation of the habitat, agricultural and recreational values of the Delta. The Commission is devoted to supporting these goals through the commitment of staffing resources and expertise, including the area of grant administration and implementation.

The Executive Director of the DPC has extensive experience in the oversight of grant administration. She has been awarded and implemented several successful grant allocations for natural resource projects in Yolo County while serving as the Deputy Director of Yolo County Parks and Natural Resources from (20001-2005). Additionally she has extensive experience in resource management culminating from her 30-year tenure with the State Lands Commission where she served as the Team Leader for the

Northern California Team, responsible for all land management aspects of northern California land management projects.

DPC staffing resources are supplemented by a 19-member Strategic Support Team that has committed expertise in the areas of grant administration, legislation, public outreach, and action plan development.

Ducks Unlimited (DU) is a private, nonprofit organization dedicated to fulfill the annual life cycle needs of North America's waterfowl. With a mission to conserve, restore, and manage wetlands and associated habitats, and a membership of more than 650,000, DU is recognized as the World's leader in wetland conservation. DU has conserved and protected nearly 10 million acres of habitat since its incorporation in 1937, with more than 250,000 acres conserved last year in the United States alone. DU works with a broad array of public and private entities to deliver its mission, which also provides benefits to other wildlife and people. The organization's approach to habitat conservation recognizes the paramount need to find collaborative, common sense solutions to increasingly complex problems. Uncommon among many non-profit organizations is DU's assemblage of professional staff with extensive experience in biology, engineering, and geographical information systems (GIS). DU's exemplary staff and common sense approach allows us to evaluate, implement, and monitor conservation projects at multiple scales. DU can perform physical and biological research, topographic surveying, restoration design, permitting, construction management, and remote sensing.

Greg Green. Mr. Greg Green will serve as Ducks Unlimited's project manager and lead point of contact. Mr. Green has more than eight years experience in the environmental field with an education background that includes a M.S. in Ecology and Management from Texas A&M University and a B.S. in Wildlife Conservation from Louisiana Tech University. His professional experience includes development, design and implementation of a variety of habitat restoration projects in estuarine/brackish tidal marshes, seasonal and permanent wetlands, and native grass uplands all ranging in size from a few acres to over 9,000. Management responsibilities typically include project permitting, budgeting, and reporting. He has worked for regionally and nationally focused non-profit organizations, as well as a private engineering firm in the oil and gas industry. Mr. Green's work experience has been in Galveston Bay of Texas, Barataria Bay of Louisiana, and the San Francisco Bay Estuary of California.

The Nature Conservancy is an international non-profit membership organization whose mission is to preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Founded in 1951, The Nature conservancy and its 1 million members have safeguarded more than 15 million acres in the United States. The Conservancy has also worked with like-minded partner organizations to preserve more than 102 million additional acres world-wide. The California Regional Office is the Conservancy's largest state program and a leader in program development. Headquartered in San Francisco, The Nature

Conservancy of California has 110,000 members and has protected more than 1.2 million acres in the state.

The Nature Conservancy uses a wide variety of tools to help forge solutions to conservation issues. We employ the following four methods most frequently: acquisition of land or conservation easements, land management and restoration, land-use planning and conflict resolution, and community education and outreach. Our strength and reputation are built on the policy and practice of applying the best conservation science available and of building partnerships with local communities, private organizations and public agencies to achieve mutual conservation goals.

Keith Whitener will oversee the investigation to determine what impediments and incentives there are to farmers interested in utilizing wildlife friendly farming techniques. Mr. Whitener will also partner with DU in determining where to best implement the demonstration projects. Mr. Whitener is a Project Manager specializing in aquatic systems and working landscapes for The Nature Conservancy's Delta and Cosumnes Projects. He graduated from U.C. Davis in 1988 with a degree in Wildlife and Fisheries Biology. Prior to working at the Preserve, Mr. Whitener worked as an environmental consultant for four years specializing in riverine systems throughout the Western United States before moving to the Sacramento/San Joaquin Delta to concentrate on Delta fisheries. His work in the Delta included stints at the Department of Fish and Game, Hanson Environmental and proprietary consulting. Since joining the Preserve in 1998, Mr. Whitener has focused on restoring the Cosumnes River salmon and native fish populations, fisheries issues related to floodplain restoration and most recently, managing large-scale working landscapes.

The implementation of wetland buffer restoration) will be by **Hart Restoration, Inc.**, located near Walnut Grove, CA. This is the only firm located in the Delta that is involved with habitat restoration work and the growing of Delta native plants. Hart specializes in natural resource surveys and habitat analyses, restoration design, propagation of native wetland plants, and restoration implementation. Located along Steamboat Slough on Grand Island (in the Delta), Hart's 10-acre facility includes a plant nursery stocked with native wetland and riparian plants, a potting barn, greenhouse and shadehouse; storage and tool sheds, several vehicles, two workboats and 1 barge; office facilities including four computer work stations with GIS and graphics capabilities, and considerable room for growth. Jeffrey A. Hart, Ph.D., will serve as overall project manager. Dr. Hart has had considerable success in designing and implementing restoration projects (e.g., Stone Lakes National Wildlife Refuge, Twitchell Island, Decker Island), bioengineering projects (e.g., Dry Creek, Lower American River, North Fork of the Mokelumne River, Georgiana Slough, Steamboat Slough), and resource studies (e.g., Cosumnes River and Lower American River). His clients include mostly government agencies and non-profit companies such as the Sacramento Area Flood Control Agency, California Department of Water Resources, Turlock Irrigation District, Sacramento County Water Resources Division, Ducks Unlimited, and The Nature Conservancy. Hart has successfully completed restoration contracts with Ducks Unlimited. Since moving to Grand Island in July 1998, Hart has successfully established a native plant nursery where

a large inventory of native plants are already under propagation. The tasks for the project will be performed by Jeff Hart and Hart employees.

D. Cost

1. Budget. See accompanying budget online.
2. Cost share and matching funds. DU will be contributing \$22,041.60 as cost sharing.
3. Long-term funding strategy. We anticipate that the Working Landscape Festival Events will foster interest in the Delta's farm environment, and that this would bring new funding opportunities.

E. Compliance with Standard Terms and Conditions

The participants in this grant application can comply with all terms and conditions described in Attachment 3 of the PSP.

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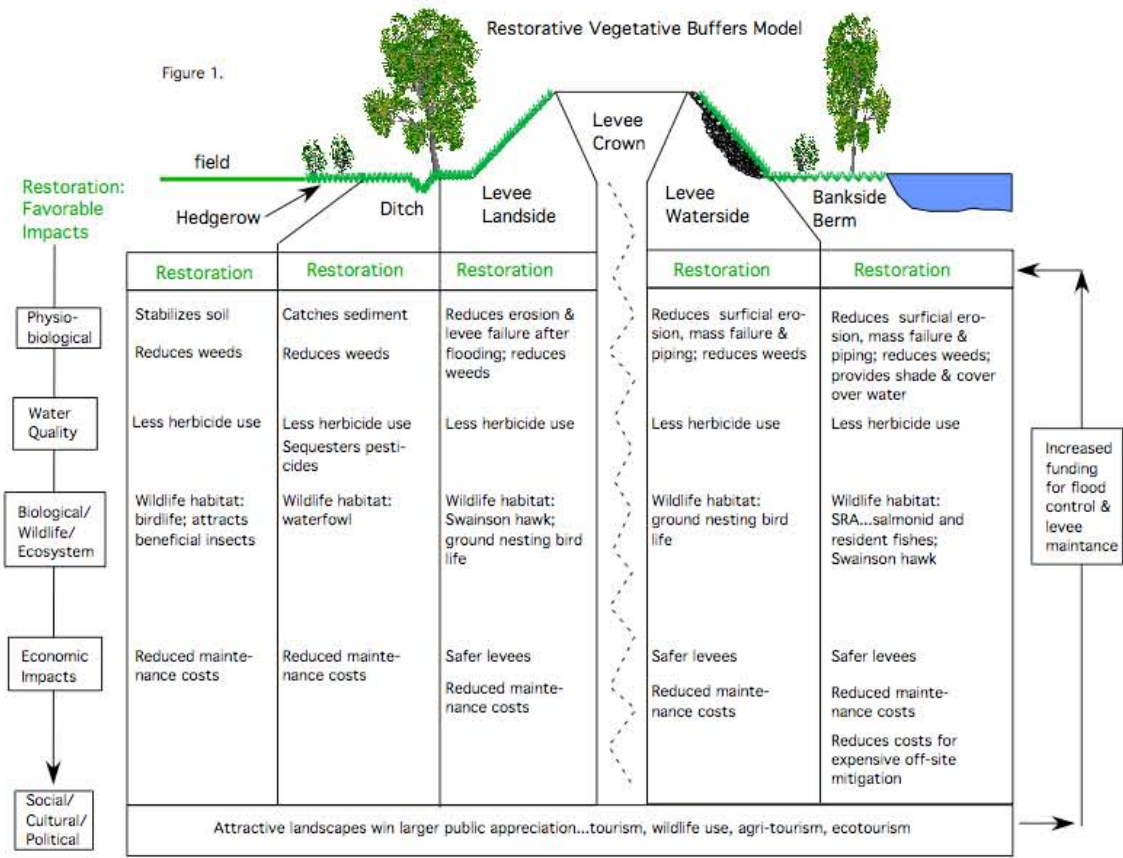
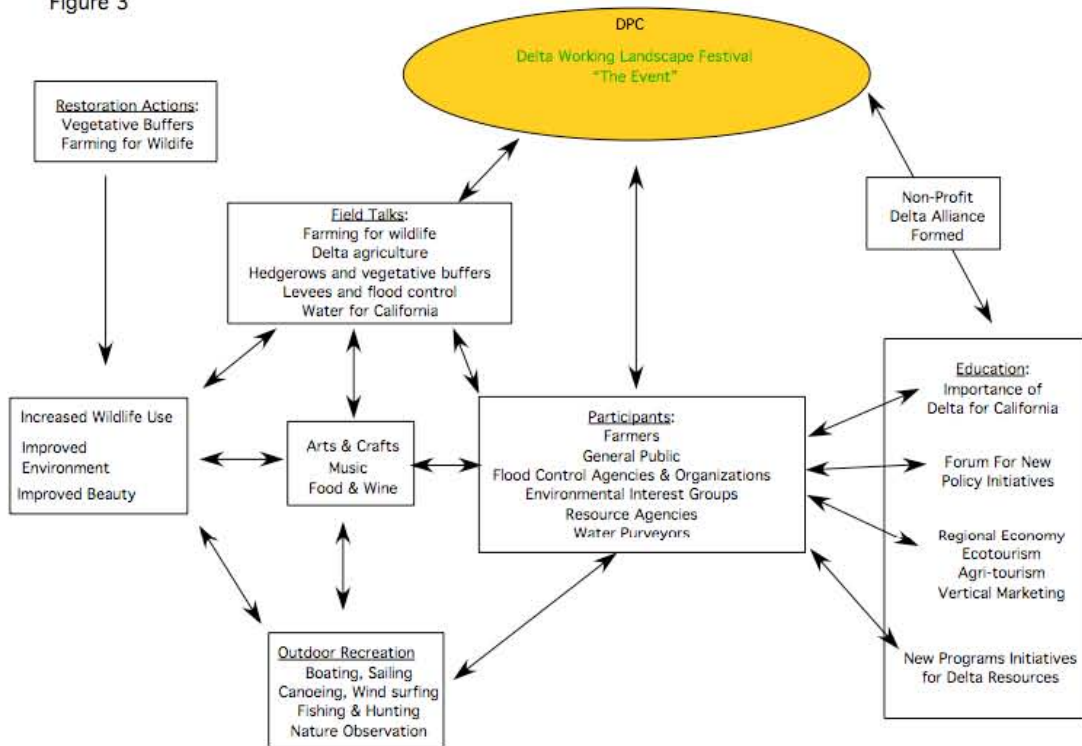


Fig. 2

Environmentally Friendly Farming Techniques and Practices

Ag Practices	Spring	Summer	Fall	Winter	Benefits/ Results
Tillage	conservation tillage		conservation tillage, delay tillage cover crop, chopping	→	↑ organic matter wildlife food improved soil wildlife use
Irrigation Management		subirrigation			↓ Weeds Herbicide use
Altered Harvesting	Delayed harvesting		Early harvest, Strip harvesting Slow harvesting, Incomplete harvest	→	↑ Wildlife use/ benefits
Flooding	→	→	→ Post Harvest Flooding	→	↓ tillage costs Weeds Erosion ↑ Wildlife use, food Organic matter
Weed Management	Perennial vegetative buffers, cover crops, grazing	→		→	↓ Weediness Erosion Herbicide use ↑ Wildlife use Soil health
Tailwater Development	Wetland plants/habitat development	→		→	↑ Wildlife use, pesticides sequestered, Groundwater recharge
Fallow fields	Plant with barley, vetch, grass or mix	→		→	↑ Wildlife food, use, beneficial insects, soil health
Pest Management	Plant cover crops, vegetative buffers, monitor pest populations, flood irrigate			→	↑ Wildlife food, use, beneficial insects, soil health

Figure 3



Tasks And Deliverables

Task ID	Task Name	Start Month	End Month	Personnel Involved	Deliverables
I.	Project Management	1	36	Fiack, Linda Whitner, Keith	Monitoring and management reports.
II.	Wetland Buffers	1	36	Hart, Jeffrey	15,000 linear ft. of hedgerow, 20,000 linear ft. of vegetated ditch banks, 3-4 acres of revegetated levees, 1250 linear ft. of bank protection.
III.	Wildlife Friendly Farming	1	36	Whitner, Keith Greene, Greg	Completion of wildlife friendly farming incentives study; completion of two miles of interior levees that will be used for interior island flooding; design and construction of two separate tailwater ponds, design and implementation of 4 separate permanately managed weland ponds.

IV.	Working Landscape Festivals	1	36	Fiack, Linda Whitner, Keith Greene, Greg	Successful completion of 12 events (4 per year).
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1/ Indicate your rate, and change formula in column immediately to the right of this cell
2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.
3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet
4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")
5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

Detailed Budget Breakdown by Task and by Fiscal Year

BUDGET FOR TASK TWO	TOTAL AMOUNT TASK 2 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
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	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -			\$ -			\$ -			\$ -
^{1/} Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -			\$ -			\$ -			\$ -
2/ Travel and Per Diem	\$ -			\$ -			\$ -			\$ -
3/ Equipment	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor: Hart Restoration (Wetland buffers)	\$ 520,000.00			\$ 160,000.00			\$ 200,000.00			\$ 160,000.00
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
Other Costs Subtotal	\$ 520,000.00			\$ 160,000.00			\$ 200,000.00			\$ 160,000.00
^{5/} Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
Total Costs for Task Two	\$ 520,000.00			\$ 160,000.00			\$ 200,000.00			\$ 160,000.00
1/ Indicate your rate, and change formula in column immediately to the right of this cell										
2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.										
3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet										
4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")										
5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification										
BUDGET FOR TASK THREE	TOTAL AMOUNT TASK 3 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
DU. Project Field Biologist	\$ 17,679.15	\$ 85.00	69	\$ 5,893.05	\$ 85.00	69	\$ 5,893.05	\$ 85.00	69	\$ 5,893.05
DU. Project Engineer	\$ 20,400.00	\$ 85.00	80	\$ 6,800.00	\$ 85.00	80	\$ 6,800.00	\$ 85.00	80	\$ 6,800.00
DU. CAD/GIS	\$ 11,551.50	\$ 85.00	45	\$ 3,850.50	\$ 85.00	45	\$ 3,850.50	\$ 85.00	45	\$ 3,850.50
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
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Proposal Number
Proposal Name

Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Personnel Subtotal	\$ 49,630.65		\$ 16,543.55		\$ 16,543.55		\$ 16,543.55
^{1/} Benefits as percent of salary			\$0.00		\$0.00		\$0.00
Personnel Total (salary + benefits)	\$49,630.65		\$16,543.55		\$16,543.55		\$16,543.55
Other Costs	Total All Years		Total Year 1		Total Year 2		Total Year 3
Materials	\$ 70,000.00		\$ 25,000.00		\$ 40,000.00		\$ 5,000.00
2/ Travel and Per Diem	\$ 4,000.00		\$ 1,500.00		\$ 1,500.00		\$ 1,000.00
3/ Equipment	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor: implementation/construction wildlife ag	\$ 320,000.00		\$ 100,000.00		\$ 150,000.00		\$ 70,000.00
4/ Sub-Contractor. University Researcher (Incentives Study)	\$ 75,000.00		\$ 40,000.00		\$ 35,000.00		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
Other Costs Subtotal	\$ 469,000.00		\$ 166,500.00		\$ 226,500.00		\$ 76,000.00
^{5/} Overhead Percentage (Applied to Personnel & Other Costs)			\$ -		\$ -		\$ -
Total Costs for Task Three	\$ 518,630.65		\$ 183,043.55		\$ 243,043.55		\$ 92,543.55

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

	TOTAL AMOUNT TASK 4 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
BUDGET FOR TASK FOUR										
Personnel										
DPC: Events Coordinator	\$ 126,918.00	\$ 38.46	1100	\$ 42,306.00	\$ 38.46	1100	\$ 42,306.00	\$ 38.46	1100	\$ 42,306.00
DU: Events Participation	\$ 7,650.00	\$ 85.00	30	\$ 2,550.00	\$ 85.00	30	\$ 2,550.00	\$ 85.00	30	\$ 2,550.00
TNC: Events Participation	\$ 9,750.00	\$ 65.00	50	\$ 3,250.00	\$ 65.00	50	\$ 3,250.00	\$ 65.00	50	\$ 3,250.00
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	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ 144,318.00			\$ 48,106.00			\$ 48,106.00			\$ 48,106.00
^{1/} Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$144,318.00			\$48,106.00			\$48,106.00			\$48,106.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3

Applicant Name

1/	Indicate your rate, and change formula in column immediately to the right of this cell
2/	Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.
3/	Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet
4/	Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")
5/	Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

[illegible]

Proposal Number
Proposal Name

Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

Other Costs Subtotal	\$ -			\$ -			\$ -			\$ -
⁵ Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
Total Costs for Task Five	\$ -			\$ -			\$ -			\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK SIX	TOTAL AMOUNT TASK 6 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
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	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -			\$ -			\$ -			\$ -
¹ /Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)										
2/ Travel and Per Diem	\$ -			\$ -			\$ -			\$ -
3/ Equipment	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
Other Costs Subtotal	\$ -			\$ -			\$ -			\$ -
⁵ Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
Total Costs for Task Six	\$ -			\$ -			\$ -			\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

[illegible]

Proposal Number
Proposal Name

Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

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Personnel Subtotal	\$ -		\$ -		\$ -		\$ -
¹ Benefits as percent of salary			\$0.00		\$0.00		\$0.00
Personnel Total (salary + benefits)	\$0.00		\$0.00		\$0.00		\$0.00
Other Costs	Total All Years		Total Year 1		Total Year 2		Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -		\$ -		\$ -		\$ -
2/ Travel and Per Diem	\$ -		\$ -		\$ -		\$ -
3/ Equipment	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
Other Costs Subtotal	\$ -		\$ -		\$ -		\$ -
⁵ Overhead Percentage (Applied to Personnel & Other Costs)			\$ -		\$ -		\$ -
Total Costs for Task Eight	\$ -		\$ -		\$ -		\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

	TOTAL AMOUNT TASK 9 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
BUDGET FOR TASK NINE										
<i>Personnel</i>										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
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	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -			\$ -			\$ -			\$ -
¹ Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3

Applicant Name

[illegible]

Proposal Number
Proposal Name

Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

Other Costs Subtotal	\$ -			\$ -			\$ -			\$ -
⁵ Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
Total Costs for Task Ten	\$ -			\$ -			\$ -			\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK ELEVEN	TOTAL AMOUNT TASK 11 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
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	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -			\$ -			\$ -			\$ -
¹ /Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)										
2/ Travel and Per Diem	\$ -			\$ -			\$ -			\$ -
3/ Equipment	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
Other Costs Subtotal	\$ -			\$ -			\$ -			\$ -
⁵ Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
Total Costs for Task Eleven	\$ -			\$ -			\$ -			\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

[illegible]

Proposal Number
Proposal Name

Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Personnel Subtotal	\$ -		\$ -		\$ -		\$ -
¹ Benefits as percent of salary			\$0.00		\$0.00		\$0.00
Personnel Total (salary + benefits)	\$0.00		\$0.00		\$0.00		\$0.00
Other Costs	Total All Years		Total Year 1		Total Year 2		Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -		\$ -		\$ -		\$ -
2/ Travel and Per Diem	\$ -		\$ -		\$ -		\$ -
3/ Equipment	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
Other Costs Subtotal	\$ -		\$ -		\$ -		\$ -
⁵ Overhead Percentage (Applied to Personnel & Other Costs)			\$ -		\$ -		\$ -
Total Costs for Task Thirteen	\$ -		\$ -		\$ -		\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

	TOTAL AMOUNT TASK 14 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
BUDGET FOR TASK FOURTEEN										
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
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	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -			\$ -			\$ -			\$ -
¹ Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3

Applicant Name

[illegible]

Proposal Number
Proposal Name

Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

Other Costs Subtotal	\$	-			\$	-			\$	-			\$	-
⁵ Overhead Percentage (Applied to Personnel & Other Costs)					\$	-			\$	-			\$	-
Total Costs for Task Fifteen	\$	-			\$	-			\$	-			\$	-
1/ Indicate your rate, and change formula in column immediately to the right of this cell														
2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.														
3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet														
4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")														
5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification														

Environmental Compliance

CEQA Compliance

Which type of CEQA documentation do you anticipate?

- 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.

Delta Protection Commission

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?

No.

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.

Projects of this nature are generally considered exempt under CEQA. Before project initiation we will ask the the local reclamation district to write a letter certifying that this work would be CEQA exempt.

NEPA Compliance

Which type of NEPA documentation do you anticipate?

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

Federal Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
ESA Compliance Section 7 Consultation	X	-	
ESA Compliance Section 10 Permit	-	-	
Rivers And Harbors Act	-	-	
CWA 404	X	-	
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	x	-	
Reclamation District 999			

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?

☒ 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?

☐ No. *Skip to the next set of questions.*

☒ Yes. *Answer the following question.*

Describe briefly the provisions made to secure this access.

Letters of permission for entry will be granted from landowners and representatives of reclamation districts before the project proceeds to implementation.

Do the actions in the proposal involve physical changes in the current land use?

☐ 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.

Since this is agricultural land, and the alterations being made are within the general scope of farmland land management practices, county zoning issues would not be affected.

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

See above description

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

See above plan.

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?

☒ 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?

☒ 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.