Project Information

2005 Proposal Number: 0077

Proposal Title: **Petaluma River Watershed Agricultural Activities For Improving Water Quality**

Applicant Organization Name: **Southern Sonoma County Resource Conservation District**

Total Amount Requested: $**1,910,954**

ERP Region: Bay Region

Short Description

Project seeks to improve water and sediment quality, restore habitats (riparian and rangeland), and rehabilitate ecological processes. Objectives of the project are to assist farmers as well as policy makers in understanding and integrating BMPs through on−the−ground projects, public education and outreach, tours, and continued research to determine new BMPs that can be implemented at the ranch level.

Executive Summary

EXECUTIVE SUMMARY

The Southern Sonoma County Resource Conservation District is pleased to be able to present this grant application. The Petaluma Watershed is still home to the most dairies now located within the Sonoma Marin Dairy Belt. Dairy owners as well as other agricultural landowners are faced with many challenges – especially those of complying with environmental regulations.

The Petaluma River, in Southern Sonoma County, drains an area of 146 square miles, with San Pablo Bay as it's receiving waters.

The overall goal of this project is to improve water and sediment quality, restore habitats (riparian and rangeland)

and rehabilitate ecological processes.

The objectives of this project are to assist farmers as well as policy makers in understanding and integrating best management practices (BMP's) into their regular farming activities. We hope to learn more about effects of pollutants for at risk species in the watershed. Projects will improve habitat for steelhead, red legged frog, and other aquatic and riparian species in the local watershed, and enhance habitat values in San Pablo Bay to benefit all Bay–Delta anadromous species.

These dairies have a significant role in the economic health of our community as well as providing local dairy products of a very high quality. To maintain this agricultural involvement with the community it is critical for dairies to implement ongoing best management practices that protect water quality as well as habitat for local species, both threatened and endangered.

Specific project objectives are to reduce sediment and nutrients from agricultural lands to the Petaluma River and eventually to San Pablo Bay. These objectives are directly linked to 3 of the six the ERP strategic goals: Rehabilitate ecological processes (proposal Tasks 2, 3, &5) Protect and restore habitats (proposal Tasks 2, 3, 6 &7) Improve or maintain water and sediment quality (Tasks 2, 3, 4, 5, 6, &7)

These objectives will be achieved by on the ground projects, public education and outreach, and tours, as well continued research to determine new BMPs that can be implemented at the ranch level. Outreach is an integral component of all RCD projects and is a key to adaptive management and successful on the ground projects.

A. Project Description.

Watershed Description: The Petaluma River, in Southern Sonoma County, drains an area of 146 square miles, with San Pablo Bay as it's receiving waters. The Petaluma River is actually a true tidal slough and is now commonly called a "river" because it is dredged for flood protection purposes with federal project assistance. Prominent land uses in the watershed include agriculture (dairies, vineyards, and livestock grazing); rural and suburban residential, historic downtown, open space; and roads.

Numerous groups have identified restoration of the Petaluma River and marsh complex as a priority goal. The *Goals Project 1999*, *Baylands Ecosystem Habitat Goals* by the San Francisco Bay Area Wetlands Ecosystem Goals Project, March 1999, states that "there is a unique opportunity to enhance the stream/marsh ecotone between San Antonio Creek and tidal habitats, one of the few places where such restoration can take place. Also, this segment provides opportunities to restore extensive tidal marsh and natural marsh/upland transitions near the subregion's largest brackish marsh". This watercourse is commonly called the Petaluma "River" but is geomorphologically a tidal slough. The lower reaches of the slough experience regular tidal exchange from San Pablo Bay. The watershed is host to the largest remaining intact marsh and tidal wetland areas and forms the Petaluma River marsh and tidal wetlands.

1. Problem - The Petaluma River supports a variety of marine and estuarine species and freshwater fish. Tributaries to the river as well as the main stem are used by these species for spawning, rearing and migration. The Petaluma River and its receiving waters, San Pablo Bay, are on the California's Impaired Waterbody 303(d) List because of threats to the health of species using the watershed. Figure 1 depicts a map of the watershed.

Sedimentation, high nutrient levels and animal waste have been identified as pollutants in the watershed that directly affect San Pablo Bay. The agricultural community and other local landowners are acutely aware of these issues and are working to improve them. Many bank stabilization projects have been completed and many clean water diversions from manured areas have been installed throughout the watershed using USDA's NRCS guidelines and funding from *Environmental Quality Incentives Program* (EQIP). In 1999, the SSCRCD, in conjunction with local landowners formed a Technical Advisory Committee and drafted the *Petaluma Watershed Enhancement Plan* (PWEP), identifying key issues, defining plans for enhancement and restoration, and prioritized projects. Below are sections from the PWEP that directly relate to the proposed projects. This project meets the following goals of landowners and stakeholders in the watershed as established in the 1999 PWEP:

Goal A - *Establish a local Watershed Council* (established in 1998 - ongoing)
Goal B - *Improve Water Quality*
Goal C – *Support the Viability of Agriculture in the Community*

Goal D – *Conserve and Enhance Existing Wildlife Habitat*

Section 4.1.2 of the PWEP covers the issues of fisheries in the Petaluma River Watershed. As part of the planning process, Prunuske Chatham, Inc. an environmental firm, gathered and summarized existing information on the historical and current presence of salmonids in the Petaluma River watershed and identified opportunities to improve and expand anadromous fish habitat.

The Petaluma River is not considered an outstanding salmonid stream however; the system supports a variety of marine, estuarine, and freshwater fish species. These species use the Petaluma River and its tributaries as habitat for spawning, rearing, and migration. Of particular concern in the watershed is the status of salmonid fish such as steelhead. Steelhead trout populations have drastically declined throughout their range in California over the last 30 years. Under the federal Endangered Species Act, steelhead south of and including the Russian River have been listed as "threatened" by the National Marine Fisheries Service.

Bill Cox, a biologist with the Department of Fish and Game, believes that historically steelhead were found in Adobe, Lichau and San Antonio Creeks, and possibly in Lynch, Willow Brook, and Thompson Creeks. Other tributaries in the Petaluma River watershed were, and still are, too small and dry for steelhead.

In recent years, watershed residents have observed fish in Adobe, Lichau and San Antonio Creeks. Since 1985, United Anglers of Casa Grande High School have conducted surveys of salmonids and their spawning and rearing habitat. The students have observed steelhead in Adobe Creek, redds (the salmonid fish egg nests) in Willow Brook Creek just above the Highway 101 crossing, and fish at several other locations including Payran Street bridge to Lynch Creek confluence, Washington Street Creek, and the confluence of Lynch Creek. The fish passages to be constructed under Task 2 will significantly improve habitat on Adobe Creek which is currently viewed by many as one of the best remaining habitats due to work previous done by United Anglers.

Section 4.1.3 of the PWEP covers *Development of roads*. Unpaved or improperly constructed roads are often a major source of erosion and sediment. Workshops, tours and public awareness (Task 6 & 7) can lead to an improvement of on farms roads and thus on water quality. Ranch road workshops and tours in our neighboring watersheds have been very successful at educating ranchers and creating in them an enthusiasm that leads to on the ranch improvements. This section of the PWEP also addresses *Loss of contiguous wildlife habitat*. A patchwork of differing land uses has reduced the size of oak woodlands and fragments riparian areas, seasonal wetlands, and other important wildlife areas. Tasks 2 & 3 of this proposal will decrease this loss of contiguous habitat. Many of the 15 landowners already "signed up" for projects have large ranches (over 300 acres) and are on contiguous parcels allowing for long stretches of restoration.

Section 4.1.4 of the PWEP addresses *Manure Management*. Petaluma River and its tributaries provide many miles of diverse aquatic and riparian habitats for a wide array of fish and wildlife species, some of which are classified as threatened or endangered. Streams, which once supported steelhead, are no longer able to support these species because of sedimentation and high nutrient levels. Birds and mammals that are dependent upon streams for food, water, and shelter to rear their young also suffer when animal wastes pollute streams. The quality of this water is critical for the health and welfare of the people and food-producing animals as well. Agricultural enterprises that generate animal wastes are encouraged to manage manure in order to maximize economic benefits, while reducing potential for pollution. Facilities with horses also must be aware of manure management. Horses contribute a small portion of total pollutants entering local waterways, but the impact is real. Voluntary compliance is the key issue and message of this plan. If all agricultural producers effectively manage their own operations and encourage others to do the same, the industry will benefit in the long term and the health of the watershed will be improved.

Manure producing operators in Sonoma County are aware of the importance for manure management and the need to control the potential impacts of nutrient and pathogenic organisms upon the environment. Project study goals of Task 4 are to help determine methodology and protocol for the application of manure to the land at the appropriate time and appropriate rate required to maximize crop and pasture production while minimizing any potential adverse surface or ground water impacts. This knowledge will allow a producer friendly soil and nutrient management program that is appropriate for both livestock and poultry operations that are common to our local community. Most producers currently apply the manure they produce to the land they own or lease but the need for more data about this process has become ever increasing with the stresses on the river and bay systems and consequently on our local agricultural producers. Information gathered through this grant will be used to establish a protocol that can be used by our local agricultural community as well as being shared with other similar agricultural communities.

Best Management Practices (BMPs) have been developed through landowner and multi-agency cooperation. It is important to recognize that runoff water from clean and manured areas should be separated to the extent possible, maximizing benefits to the landowner and the environment. Knowledge gained from studies conducted as part of Task 4 will help landowners determine the best BMP's to use for their particular situation. The 1997 Sonoma Marin Animal Waste Committee's recommendations and design guidelines for manure management are identified below and are all addressed in Tasks 3, 4, 5, 6 & 7.

- Facilities need to safely convey clean rainwater away from manured areas and ponds without creating erosion.
- Control all wastes and storm water runoff from confined animal facilities and manured areas.

- All liquid and solid manure should be managed in a manner that prevents the migration of manure and manure constituents into local waterways.
- Corrals or densely used portion of pastures need manure management.
- Manage pastures and fields for safe, effective manure utilization.
- Manure and water testing will provide for better decision-making.
- Apply manure fertilizer appropriately.

A report prepared by Prunuske Chatham, Inc., *Riparian Plant Community Enhancement in the Petaluma River Watershed*, 1998 discusses specific enhancement recommendations and opportunities. The projects proposed in this application address those recommendations and opportunities. They include: managing livestock access to creeks via fencing and plantings (Task 2, 3, & 6), control invasive exotic species via removal and revegetation (Task 2, 3, & 6), protect intact sections of riparian corridors via exclusionary fencing and revegetation (Task 2, 3, 6 & 7) and maintain drainage structures (Task 3 & 6).

2. Goals and Objectives: The overall goal of this project is to improve water and sediment quality, restore habitats (riparian and rangeland) and rehabilitate ecological processes.

The objectives of this project are to assist farmers as well as policy makers in understanding and integrating best management practices (BMP's) into their regular farming activities. We hope to learn more about effects of pollutants for at risk species in the watershed. Projects will improve habitat for steelhead, red legged frog, and other aquatic and riparian species in the local watershed, and enhance habitat values in San Pablo Bay to benefit all Bay-Delta anadromous species.

The Petaluma Watershed is now home to the largest number of remaining dairies in Sonoma County. These dairies have a significant role in the economic health of our community as well as providing local dairy products of a very high quality. To maintain this agricultural involvement with the community it is critical for dairies to implement ongoing best management practices that protect water quality as well as habitat for local species, both threatened and endangered.

Specific project objectives are to reduce sediment and nutrients from agricultural lands to the Petaluma River and eventually to San Pablo Bay. These objectives are directly linked to 3 of the six the ERP strategic goals:

Rehabilitate ecological processes (proposal Tasks 2, 3, & 5)
Protect and restore habitats (proposal Tasks 2, 3, 6 & 7)
Improve or maintain water and sediment quality (Tasks 2, 3, 4, 5, 6, & 7)

These objectives will be achieved by on the ground projects, public education and outreach, and tours, as well continued research to determine new BMPs that can be implemented at the ranch level.

ON THE GROUND PROJECTS: On the ground projects: bank stabilization, manure management and composting, as well as range management and buffers, will all include a restoration component that will achieve the goal of protecting and restoring habitat as well as water quality. Projects will be completed on dairy and vineyard lands and will include 3- 6 bank stabilization and habitat restoration projects. The objective of these projects is to reduce sediment (repairing approximately 5,000-7000 lineal feet of degraded creek).

We also propose removal of two barriers to fish migration and restoration of riparian habitat along Adobe Creek with the main objective of rehabilitating ecological processes and restoring fisheries habitat. Smaller projects include installation of one manure composting facility and installation of exclusionary fencing and buffers to reduce nutrients to the stream thus achieving the ERP goal of improving or maintaining water and sediment quality.

CONTINUED RESEARCH: The project includes continuation of manure management and water quality studies begun by UCCE and Clover-Stornetta Farms, Inc. Significant data has already been collected which lead to the recommendation of BMPs that can be implemented as demonstration projects. To assure greater success with specific BMPs, both UCCE and Clover–Stornetta Farms, Inc. wish to obtain additional data on a wider array of dairies. The more successful BMPs are, the more likely agriculturalists are to use them to achieve overall goals. This work also leads directly to achieving the ERP goal of protecting and restoring habitats as well as improving or maintaining water and sediment quality.

PUBLIC EDUCATION AND OUTREACH: The SSCRCD has extensive history in conducting public outreach in the form of trainings, workshops, tours, and one-on-one meetings on private property. Included in this proposal are workshops to disseminate information collected in the research studies and train dairy managers how to implement appropriate BMPs best suited for their particular dairy operation and location. One-on-one farm meetings will be held with the landowners to discuss specific issues of how to complete projects, funding availability and timing. Other workshops will be conducted on "Being a Successful Water Quality Steward" and on "Ranch Roads". Both of these types of workshops have been held in our adjacent watersheds and have been very successfully attended.

The RCD, UCCE, California FarmLink and our neighbor RCD, Marin County RCD will host tours of local dairies that have already installed BMP's similar to those covered in workshops and trainings. Tours will be conducted for other agricultural producers as well as employees of organizations and agencies on this grant proposal so that we can all better understand those BMPs and transfer this knowledge to others on an as needed or requested basis.

All of the organizations collaborating on this grant proposal believe that public education and awareness both at the adult level and school age level is imperative to reaching the long term goals of continued watershed health and thus in finally achieving all of the ERP's six strategic goals.

3. Conceptual Model: Figure 2 depicts a conceptual model for addressing the goals and objectives of this proposal.

4. Approach and Scope of Work: All the proposed tasks relate to our hypothesis that "*if farmers integrate best management practices on agricultural lands and if we increase the understanding of BMPs and their appropriate uses, then the Petaluma River watershed and San Pablo Bay health will be significantly improved*".

All of the tasks are separate stand alone tasks. However, outreach and education is always an integral part of RCD work and are critical to the success of any other projects we seek to undertake. The scope of work for this proposal includes:

- project management and administration
- construction of fish passages on Adobe Creek
- sediment reduction projects including: bank stabilization, installation of exclusionary fencing, installation of buffers and no till drilling
- manure management and demonstration projects
- installation of composting facility
- outreach and education
- watershed coordination.

Task 1 - Reporting, Monitoring, and Grant Administration-This task represents the important administrative tasks in reporting, monitoring, evaluating and in contracting management. Also, this task includes the management of subcontractors. The RCD has an excellent track record in administering state and federal funds and is experienced in contracting with the State and in producing required reports. Deliverables: Quarterly Reports, narratives of activities, any reports, fliers, agendas, sign-in sheets, news releases, or photographs collected during the quarter.

Task 2 – Adobe Creek Fish Passage, Sediment reduction and restoration- Three areas on this Creek are proposed for restoration and enhancement leading to sediment reduction. One component of the project involves the removal of an existing cement ford (causing severe down-cutting) and re-contouring to aid in sediment reduction and improve fish passage. The second component on Adobe Creek entails bank stabilization work in two severely eroded areas – upstream and downstream of the cement ford. All components (comprising approx. 2,500 ft. of bank) will comprise sediment reduction and erosion control measures including: a) installation of livestock exclusionary fencing, b) establishment of native vegetation, and c)

appropriate bank stabilization techniques. Both affected landowners agree to long-term maintenance. Deliverables: design plans, CEQA documents, Storm Water Pollution Prevention Plan, riparian Revegetation plan, copies of permits, any news releases and photographs before, during and after construction.

Task 3 - Petaluma River, Ellis Creek and San Antonio Creek- bank stabilization and sediment reduction- Implement construction projects to decrease sedimentation to the Petaluma River and Tributaries including: creek bank stabilization projects along the Petaluma River or tributaries on agricultural parcels (dairies and vineyards), installation of fencing and/or buffer plantings to slow sloughing of highly erodible soil. Purchase a no-till drill for use within the local agricultural community to diminish erosion issues related to rangeland Revegetation. Deliverables: CEQA documents, copies of permits, any news releases and photographs before, during and after construction, no-till drill usage documents and photographs.

Due to severe erosion, massive bank failure and incision, massive deposition of sediment occurs along an extensive segment on San Antonio Creek. Erosion control and bank stabilization measures are proposed (potentially 1,600 feet of bank repair) for this high priority area to reduce sediment. Work proposed includes: a) installation of approx. 9,600 ft. of livestock exclusionary fencing, b) establishment of native riparian vegetation on approx. 2 acres, and c) specific bank stabilization techniques to control incising banks. In this widespread area, two landowners are affected and they agree to share costs "in-kind" through installation and maintenance of BMPs.

Task 4 – Manure Management/Water Quality Studies and Implementation Projects – Dairy Belt The Resource Conservation District will collaborate with University of California Cooperative Extension to continue 2 separate studies begun through prior grants (Kellog CF3 granted to Clover–Stornetta Farms, Inc. and a UCCE grant) related to nutrient budgeting for dairies and related to water quality issues linked to on-farm practices. These two studies are adaptive management in action. Both generate data and information to guide decisions on practice implementation and resource stewardship. Both have an evaluation step to review the progress to date and redirect efforts based on what was learned. Standard Best Management Practices as designed by the Untied States Department of Agriculture's Natural Resources Conservation Service will be evaluated for their effectiveness in decreasing nutrient loads to local creeks. Practices to be considered are: grass waterways, exclusionary fencing, sediment retention ponds, and gutter systems that separate water from mixing with manure. Deliverables: QAPP (Quality Assurance Project Plan) has already been completed by UCCE), research results (data will be in a format that gives data numbers without identifying specific landowners), published documents, any news releases and photographs.

Study 1: Continue systems approach study of dairies within the Petaluma River Watershed to document nutrient concentration and loading to surface waters. UCCE staff will collect water

quality samples on a storm event basis from loading units that include: manure management systems, gutters, storm drains, pastures, corrals and lots. They will also collect in-stream samples above and below dairies and in a control watershed managed for light grazing and without dairy facilities or human residence with septic systems. Samples will be evaluated for effectiveness of practices in improving water quality. The goal is to establish baseline data that can lead to adaptive management decisions. A QAPP (Quality Assurance Project Plan) has already been completed by UCCE for this continuation of their study (previously funded for one year only).

Any allocation of resources for water quality management should recognize that there are long and short-term priorities. One potential method to select these long and short-term priorities is to separate those areas with high total loads because of large storm runoff volumes from those with high total loads because of high concentrations. For example a 364-hectare pasture or upstream area could have a storm runoff volume of 10,480 cubic meters resulting from 1.9 cm of precipitation, and have a nutrient concentration of 8,222 cfu/100 ml. In comparison, a 1.2-hectare lot could have less than 8.6 cubic meters of storm runoff from the same storm with a concentration of 49,333,333 cfu/100 ml. The questions for management prioritization are which unit presents the greatest nutrient load and which would be the easiest to mitigate. This is an individual operation and case-by-case decision but with this smaller spatial scale water quality data in hand, the individual producer can make such decisions.

Prior to the availability of this systems approach data, these dairies had been singled out as a source of bacteria pollution to the bay without the information needed to reduce that loading. With this data in hand, these dairy producers are now prioritizing and implementing on-farm efforts to improve water quality. In addition, regulatory agency staff and agencies that provide technical and financial support are now working cooperatively to assist these dairies in their efforts, putting their resources where they will provide the most benefit. Practices being constructed through this partnership include sediment catch basins and vegetative buffers below lots and pastures, as well roof drainage systems to separate storm water from manure sources. This information can help dairy managers determine how and where to best improve water quality through specific management decisions.

Study 2: Most dairy and livestock operations manage both solid and liquid manure. Manure is normally stored in pits and lagoons for periodic season utilization of its nutrient value on crop or pasture land. The two most common management methods for manure collection are tractor scraping and flushing, with some facilities using both methods. The nutrient value of manure is affected by the method of collection, the amount of time that lapses between when manure is placed in storage and utilized, treatment such as composting, and animal feed practices. The amount of applied nutrients actually available to the crop or pasture is dependent on soil quality parameters, such as soil texture (sand, clay, or loam), pH, presence and percent of organic matter, permeability, available water capacity, and depth of soil (to bedrock, hardpan layer, or seasonal high water table).

Pollutants in manure that pose an environmental threat include nitrate for groundwater, and sediment, ammonia, pathogenic organisms, nitrogen, and phosphorus for surface water and aquatic organisms. Periodic analyses of water samples collected from surface water bodies and groundwater are needed to detect the presence of these pollutants. Monitoring provides the information needed to determine if management is effective in preventing adverse water quality impacts.

One option to reduce the release of these pollutants to water resources and increase their agronomic benefits is the use of nutrient budgeting: that is the amount of nutrients applied must be limited to what is needed to produce an optimum crop yield. Soil properties, such as water-holding capacity, texture, and cation exchange capacity, may effect the time and rate of nutrient application(s). Soil sampling and analyses is needed to make the appropriate management decisions regarding nutrient utilization.

The amount of land that is available for crop or pasture application of nutrients will affect management decisions. For each land area that receives nutrients, a management plan, specific to that field, will need to be developed. Elements of the field management plan include field and soils mapping, crop(s) to be grown, and site description. The field site map should indicate solid type(s), slope, usable application area, and location of structures, fences, buffer strips, ponds and water courses, roads, adjoining properties, and any other improvements or features that will affect the management plan.

Evaluation of the nutrient budgeting results allows us to review the status or progress to date and build on what occurred or what was learned, thus adaptively managing the projects by keeping management measures that work and modifying or replacing the activities that didn't quite work as well as anticipated.

Task 5 – Design, Permit and Install Composting Facilities - Design, permit and construct manure composting for a horse facility. Deliverables: copies of County permits, any news releases, and photographs before, during and after construction.

Task 6- Outreach and Education - Conduct manure management workshops (for local dairies and horse facilities), water workshops related to water quality and groundwater recharge and ranch roads workshop. Conduct trainings and tours to demonstrate the outcome of studies to date and work with landowners to implement demonstration projects. Conduct environmental education programs such as the FARMS Leadership program or the San Francisco Bay Institutes' STRAW program. Deliverables: narratives of activities, any reports, fliers, agendas, sign-in sheets, news releases, or any photographs collected while conducting outreach activities, and copies of literature provided in Hmong or Spanish.

Effective communication tools for the RCD are "kitchen table meetings" and small workshops with landowners and affected agencies, and newsletters describing project progress/issues

Task 7 - Watershed Coordination- This task will include the necessary coordination with all affected agencies, landowners, and stakeholder groups. Deliverables: quarterly narratives of activities.

5. Performance Evaluation: Effectiveness monitoring will determine whether the specified activities have the desired effect. Each task will be evaluated and monitored using specific performance measures. This project will involve the participation of over 16 family farms and agricultural operations. These 16 farms located in the Petaluma Watershed encompass a total of approximately 13,000 acres. In general, each proposed task or activity will take into consideration the performance of tasks and outcomes reached on all properties which have applied the proposed management practices and habitat management techniques. For outreach and education tasks, the effectiveness on stakeholders and landowners will be measured through workshops and meeting attendance and verbal/written feedback. Performance measures are described for each proposed task.

Task 1- Quarterly reports will be prepared and submitted which will track and document grant performance progress and success. Narratives will provide descriptions of effectiveness and task progress.

Task 2- Photographic monitoring, as-built plans of fence and bank stabilization techniques installed, observation reports of visual sightings of fish presence in streams.

Task 3- We will document number of linear miles of fence installed and length of stream course treated with various bank stabilization techniques. Photographic monitoring and record-keeping of native plant installation and irrigation plans will be conducted to measure performance of this task.

Task 4- In-stream water samples will be taken on-site and above and below the agricultural operations to determine effects on water quality. Fecal coliform concentration levels will be collected and analyzed. We will adhere to a previously prepared QAPP.

Task 5- Photographic monitoring, designs/plans and as-built drawings.

Task 6- Outreach and education effectiveness on stakeholders and landowners will be measured through workshops and meeting attendance and verbal/written feedback. Field Day evaluation forms are completed by students and feedback reported.

Task 7- The Watershed Coordinator will be assessed for effectiveness at key outreach events, such as workshops and meetings with stakeholders, through the use of evaluation forms and documented feedback. Not only will the effectiveness of the Watershed Coordinator be addressed in periodic evaluations but the effectiveness and efficiency of the District and its

programs will also be evaluated. Also, the Watershed Coordinator will report the effectiveness of grant task performance in quarterly reports.

6. Feasibility: We are proud to propose a fully committed and entirely feasible work scope. This proposal's feasibility is largely based on the strong relationships, and considerable experience of working together with our project partners to achieve program objectives. We are organized, energized, and with funding – are completely able to accomplish the tasks set forth in this proposal within time and budget. All on-the-ground projects and technical study scope items have been proposed to be accomplished within the 3 year time frame with one year devoted to acquiring the necessary permits and two years planned to install and monitor the best management practices. The scientific study methods are sound, based on current priorities in the watershed and proper personnel with expertise will be conducting the work. No new entities or personnel have been introduced in this project; we are a well-oiled machine. All tasks are ready to begin immediately upon contract completion. Most of the tasks are continuation of work, or work identified in the Conceptual Model, that are currently given a top priority. No third-party impacts are anticipated.

Grant management/project success track-record: The RCD has an excellent track-record of successful performance on 5 CalFed grants (1 in Petaluma, and 4 in Sonoma). District personnel have the expertise to conduct the fiscal management of these grant funds and the experience and expertise in managing the projects/programs described herein. We have a long history of working with the local producers and specifically chose to work with the landowners proposed due to their eagerness and willingness to participate and financially contribute match funding. The projects and outreach programs proposed are specifically requested by landowners, effective in our community, and approved and championed by resource agencies and the scientific community. The agricultural practices and studies proposed directly relate to the goals and objectives stated by and for the Petaluma community through it's local plans and policies. The project types and breath of scope of work proposed are the bread-and-butter services that the RCD and cooperators have historically performed for decades. We have a long history of providing education and outreach to the community on a variety of best management practices, water quality and watershed issues. Our RCD enjoys over 50 years of trust and partnership with private landowners working the land and the local resource and permitting agencies. Being non-regulatory, we bridge the gap between regulations and volunteerism. We have years of experience and success with willing landowners who serve as models and catalysts to bringing new standards to land management.

Fiscal concerns: The projects and programs proposed are primarily independent of other funding sources, therefore there is no great risk of failure of outside funding sources.

Permitting and access: The RCD has, in-hand, signed and authorized agreements with all private landowners included in this work scope. It is the District's policy to obtain full permission and commitment of landowners prior to any grant solicitation. In addition to working with private agricultural landowners, the RCD has full commitment and support of the other stakeholder groups, agencies and government partners. The RCD has already conducted pre-project consultation with all affected landowners and permitting agencies. Permits will need to be obtained from the CDFG, and ACOE (for the Adobe Creek fish passage project). Full compliance with CEQA/NEPA is proposed with the RCD serving as lead agency.

7. Data Handling and Storage: Qualitative and quantitative data from assessments, research, and monitoring will be stored appropriately on CD-R by the RCD and its consulting partners. For projects involving the University of California Cooperative Extension, the RCD will follow their established protocols for data handling and storage. Data, study results, and interpretation are disseminated by final or yearly reports to grantors and interested parties. It is the RCD's policy to keep the name of the individuals undisclosed for reasons of confidentiality and privacy so that we may retain our trust and rapport with our constituents. Therefore, we will provide data with numerical codes rather than names. Data and study results could be posted on our District website or other websites.

8. Information Value: The knowledge that results from the studies proposed in this grant will be of specific value to smaller northern California dairies. Well known studies on nutrient management and water quality best management practices are primarily focused on larger dairies in the Central Valley. Small local dairies will benefit greatly from this work by becoming more economically viable while reducing the potential for adverse environmental impacts. Information garnered through the nutrient budgeting studies proposed will be utilized by the University of California Cooperative Extension to further test a protocol developed by UCCE to improve the nutrient management worksheets developed through the CF3 Nutrient Management Project.

The Natural Resources Conservation Service, our federal USDA partner, will not only assist with the dissemination of this information on a local level, but also has the capacity to do so on a national level through various avenues including printed bulletins and newsletters, as well as communication between state offices. New information disseminated through these various avenues will reinforce the need for the integration of agricultural activities with ecosystem restoration.

SSCRCD is also directly involved in the NRCS Conservation Effects Assessment Program (CEAP) in an adjoining watershed within our district boundaries. Data from these proposed studies could augment the findings from their multi-year study of the affects of conservation practices on other small farms in this region.

In addition, our state partner, California FarmLink serves the entire state and will disseminate this information to their constituents on a statewide level, including Hmong, Thai, and Spanish speaking communities. Information on the appropriate use of the best management practices implemented through this grant will be also incorporated into our revised Petaluma Watershed Enhancement Plan and many of our outreach activities.

9. Public Involvement and Outreach: Inherent in all District projects and plans is the direct involvement of local landowners and outreach to local governments, agencies, and local stakeholder groups. This CALFED project is no exception. One of the primary and important functions of the District is to provide education and outreach to all parties within the watershed areas we serve. A key component to the outreach proposed is direct outreach to landowners and agricultural resources producers in the area. Many of the outreach components planned will focus on getting technical information and sharing of resources to the agricultural community.

The District is fully committed to working with local jurisdictions and other resource agencies in sharing information and study components. Local agency consultation and involvement will include: City of Petaluma, County of Sonoma, CA Dept. of Fish and Game, U.S. Fish & Wildlife Service, USDA Natural Resources Conservation Service, and the California Coastal Conservancy. In addition to agency involvement, the RCD will work with it's neighboring RCD partner, Marin Resource Conservation District and other local stakeholder groups including: the Petaluma Watershed Foundation, the San Antonio Creek landowner group, Clover-Stornetta Farms, UCCE, and California FarmLink. We will all be working together to conduct the most effective and efficient outreach and education program.

The RCD is fortunate to be working with a very cooperative and willing group of landowners located in the sub-watershed of San Antonio Creek. In addition, Adobe Creek has long been a watercourse of international notoriety and regional importance in its community-based restoration efforts to return salmonids to the Creek. It is the RCD's policy to include stakeholder participation from all creek stewardship groups in all ways appropriate to insure the long-term success of watershed restoration efforts.

A separate task has been identified specifically for this important component of grant funding which will include several distinct outreach activities and programs. Past efforts have proved successful in communicating the vision of restoration and stewardship and involving various sectors of the community in specific projects.

Planned outreach components include:

- Workshops and ranch tours to highlight BMPs to address water quality & habitat enhancement

- Involvement of FARMS Leadership participants (high school students) in installing native plants as part of bank stabilization and bioengineering projects
- Kitchen table meeting with agricultural producers about issues, programs and designing BMPs on their land
- Announcements and program outreach on availability and rental use of no till drill
- Water conservation and BMPs workshop to be held in Petaluma to disseminate water and resource issues and topics open to both agricultural and suburban community

B. Applicability to CALFED Bay-Delta Program and ERP Goals, and priorities for this solicitation.

1. ERP Priorities

1. At-Risk Species. According to CalFed, "all Central Valley anadromous fish pass through the North Bay and rely on it for some stage of their lives. The health of the North Bay affects the health of Sacramento/San Joaquin watersheds and their salmonid populations." (ERP, Vol. II, p. 142). Proposed projects under this grant proposal will address habitat enhancements in the Petaluma River watershed, an area identified as a priority area in CalFed planning documents as well as this 2005 ERP PSP. Reduction of sediment and nutrient inputs into the Petaluma River and its tributaries will provide enhanced spawning habitat and water quality while stabilizing important migratory pathways for adult steelhead. This will lead to an improved hydrologic regime in this important Northbay watershed that drains into the overall Bay-Delta watershed, improving stream flows, net Bay-Delta channel flows, and net temperatures for native anadromous and estuarine fish species. These projects include: bank stabilization and revegetation, agricultural buffer strips, and livestock exclusionary fencing along riparian areas; removal of two barriers to more than a mile of pristine spawning habitat for migratory adult steelhead; education and outreach to agricultural land managers and the general public; and studies and demonstration projects aimed at improving agricultural management practices and decisions on dairies and grazing lands. Restoration projects may also benefit both California red-legged frog and California tiger salamander.

2. ***Ecosystem Processes.*** Freshwater inflow from rivers, restoration of riparian vegetation, and the improvement of aquatic habitat diversity are among the ecological factors having the greatest influence on North Bay fish and wildlife. Improving ecosystem processes helps reverse downward population trends of native riparian and aquatic species and prevent establishment of non-native species.

Proposed tasks will provide more information about sediment and nutrient inputs to the streams in the Petaluma River watershed and, subsequently, the San Pablo Bay. Proposed task will also result in projects that directly implement actions to improve water quality and restore ecosystem processes. If the San Pablo Bay's role as nursery and feeding ground for at-risk

species is to be maximized, habitat and water quality conditions in the San Pablo Bay watershed must be maintained and improved. Therefore, improving habitat and water quality in the Petaluma River watershed, which drains into the San Pablo Bay, will directly address this goal.

This ERP goal of restoring ecosystem processes is met directly through the construction of "on-the-ground" restoration projects proposed for the Petaluma River watershed, including revegetation and erosion control of creek banks. In addition, through the provision of riparian friendly fencing along critical areas of the stream bank, livestock will be restricted from the riparian corridor, renewing the health of this important habitat and further helping to establish new native plantings. By planting native species along the stream bank, the goals of preventing the establishment of vigorous non-native invasive species and improving aquatic habitat diversity are achieved.

3. Habitats. Tasks proposed under this grant will address numerous priorities outlined in the ERP Stage 1 Implementation Plan. Implementation actions are focused on restoring and protecting natural riparian habitats to support recovery of at-risk species, enhancing and/or maintaining native biotic communities, and rehabilitating stream corridor ecological processes.

Proposed projects support the recovery of priority at-risk estuarine-dependent species and rehabilitation of estuarine ecological processes in the San Pablo Bay by improving water quality and increasing public awareness. Proposed projects also include improving migration passage and access to historic spawning and rearing habitat, a critical step towards improving riverine habitat conditions and ultimately increasing native fish populations, directly addressing the goals of the CalFed Fish Passage Improvement Program.

Upland areas that will benefit from the proposed projects include perennial grasslands, vernal pools and flooded fields. Listed species that will potentially benefit from the proposed habitat improvements include the California tiger salamander, California red-legged frog, and Western pond turtles.

The proposed studies will provide a better understanding of how particular agricultural lands adjacent to riparian zones influence ecological health, as well as how existing agricultural lands and agricultural practices can benefit wildlife. These studies will also address some of the scientific uncertainties associated with the relationship of upland areas to the riparian zone.

Lastly, the proposed tasks will aid the viability of existing farms, preventing urban development of farms that adjoin habitat areas or that have potential for future ecosystem restoration. Farmers and local leaders will be partners in investigating management issues to develop a collaborative program that is friendly to both agriculture and wildlife, with the overall goal of managing agricultural lands to improve habitat values for

special-status wildlife and other native species that depend on the Bay-Delta.

4. *Sediment and Water Quality*: The projects proposed in this application directly support the goal, "to improve and/or maintain water and sediment quality conditions that fully support healthy and diverse aquatic ecosystems in the Bay-Delta watershed and eliminate, to the extent possible, toxic impacts on organisms in the system, including humans," as outlined in the CalFed ERP. Specific actions include: managing livestock access to creeks via fencing and plantings, thereby reducing the direct contamination of water by ammonia and organic matter; managing runoff of sediment through bank stabilization and revegetation projects; controlling nutrient inputs through the design and construction of a composting pad project; and protecting intact sections of riparian corridors via exclusionary fencing and revegetation.

Water quality studies proposed will look at sediment, nutrients such as nitrogen primarily in the form of nitrate and phosphorus, and bacteria and other animal pathogens. Analyses of water samples will be utilized to detect the presence of pollutants. These studies will address agricultural pollutants that are from nonpoint sources (NPS), such as fields, and for surface waters are caused primarily by storm water runoff. The proposed studies and demonstration projects will assist in developing a comprehensive understanding of the best management practices that best avoid water quality impacts and protect the health of individuals and populations within the Petaluma River watershed.

This project is applicable to the ERP Science Program goals in many ways. Because any sustainable restoration program must include on-going investment in science our project is designed to address key scientific uncertainties affecting at-risk species while balancing our scientific studies with adaptive management, monitoring and broad communication of science knowledge and scientific activities. Bank stabilization and restoration projects will be studied and monitored for their success. Proposed outreach efforts and workshops will increase awareness of agricultural effects on water quality and improve land use practices to reduce sedimentation and nutrient inputs.

All tasks are designed to take advantage of existing data by building on previous studies or consulting and partnering with groups that have performed similar work. Working directly with willing landowners on stewardship projects provides us with exceptional models to share and compare with other community members and other communities. The RCD sponsors many 'service learning' experiences (school children working and learning alongside adults in an outdoor classroom setting) where willing landowners accept the help and support of local students in the installation of native plants on their properties. This kind of collaborative effort between community groups and landowners fosters a lifelong awareness of watershed issues and environmental stewardship.

The projects in this proposal focus on implementation of the multi-stakeholder developed watershed plan, entitled *Petaluma Watershed Enhancement Plan*, completed July 1999. Projects

also provide broad ecosystem benefits meeting Calfed's Restoration Priorities for the Bay Region, specifically the following priorities: BR-1, BR-3, BR-4, BR-5, BR-7 and BR-8.

2. Relationship to Other Ecosystem Restoration Actions or Program investments: This project helps to strengthen and support the restoration projects undergone and currently being implemented in the watershed. All these projects are related through their goals towards improving the health of the watershed and removing the listing of the Petaluma River on the state's 303(d) List of Impaired Waterbodies. This project compliments previous efforts including the SWRCB 205(j) funding for the Petaluma Watershed Enhancement Plan, and the previous and current 319(h) funding to reduce sedimentation and other non-point source pollutants affecting water quality in the watershed.

This CalFed proposal is also related to the above mentioned 319(h) project in terms of the riparian restoration and erosion control focus endemic to this watershed. The watershed coordination and role of RCD personnel in oversight and liaison amongst its other scientific and study partners, is also related and will be necessary, to continue with all on-going projects in the watershed. A Watershed Coordinator and it's related technical assistance and outreach functions will enable the RCD, the City of Petaluma, the County of Sonoma, and state and federal resource agencies the opportunity to share information, develop good models and restoration plans, and best address ecosystem and watershed-wide issues of concern.

In addition, the Southern Sonoma County Resource Conservation District has just been awarded a contract to conduct restoration and stream channel maintenance work for the Sonoma County Water Agency in the Petaluma River watershed. This restoration work will be conducted on Adobe, Lynch, and Ellis Creeks in the Petaluma watershed.

3. Additional Information for Proposals Involving Land or Easement Acquisition: Not applicable. This proposal does not involve land or easement acquisition.

C. Qualifications and Organization: One of our key strengths we bring to this proposal is our experience, direct connection, and committed working relationships with agricultural industry-landowners- -government agencies- and academic researchers. The RCD is truly at the center of the dynamic of land management and ecosystem restoration. Our 50-year jurisdiction encompasses the entire Petaluma Watershed and we serve both rural and suburban constituents. We work closely with the City of Petaluma and their waterways, flood control, and water conservation programs. We also have a direct-line of communication and on-the-ground involvement with the rural landowners who are working the land and preserving our community's open space while growing food and fiber. We bring together the expertise and experience of well-qualified individuals, specifically selected for their complimentary expertise, high degree of collaboration, consistent work ethic, technical tools, knowledge, and excellent reputation in the region. Our team has worked successfully together for years. No new personnel or entities are proposed to perform the work; all subcontractors

have decades of established working relationships with RCD, and regulatory agencies. Experience, community trust, past success, permission for access, organization of work and grant administration history are the many strengths we bring together to accomplish ERP goals.

The SSCRCD is uniquely qualified to manage the tasks proposed and serve as a "coordinator" of the many study and project partners working hard to achieve goals, adaptively manage activities, and fully participate in ecosystem restoration. The RCD will subcontract with UCCE, Golden Bear Land & Water, and Prunuske Chatham, Inc. (PCI); where long-term contracting relationships exist. All three entities are considered leaders in their field, have considerable experience and solid reputation for quality, effective work in our region. PCI has permitted, designed, and constructed many successful fish passage improvements and riparian restoration projects. Jeff Creque from Golden Bear Land & Water, Clover-Stornetta Farms, and UCCE have previous work experience working as a team on agricultural producer issues and nutrient management.

The majority of the education and outreach components to the grant tasks will be managed and coordinated by the RCD, the project director with support from the watershed coordinator and other technical staff. No potential problems are anticipated with study collaborators and no conflicts of interest exist.

J. Leandra Swent- District Manager, SSCRCD. Ms. Swent is the RCD's Manager and oversees the work of all staff members. She will serve as Project Director and Financial Manager on this CalFed grant. Ms. Swent successfully manages over one million dollars of public and private grant funding annually at the RCD. She has over a decade of experience as a private consultant working on wetlands restoration and mitigation monitoring issues. Ms. Swent has forged many partnerships and fostered collaborations throughout the County and region to address ecosystem restoration issues. She wrote the first successful mitigation monitoring report ever accepted and approved by the San Francisco District, U.S. Army Corp of Engineers. B.A., Natural Resources and Planning. Emphasis in Biology. Sonoma State University.

Ms. Swent will be directly supported by Susan Haydon, Assistant District Manager, who will assist in project management and coordinate the education and outreach components. Jason Sweeney, Watershed Coordinator, will serve the grant in this role through day-to-day performance on tasks, on-farm visits with producers, and coordination of work with all government and agricultural industry partners. Paul Sheffer, the District's senior engineering technician has an incredible 50-year history of technical advice to farmers and establishing agricultural practices on the land. Mr. Sheffer will assist in securing landowner access, outreach, design consultation, and monitoring. Joyce Gilday, District Secretary will perform the day-to-day grant accounting, tracking, and assist the Project Director with grant reporting

and preparation of deliverables. She will be directly available to all landowners, subcontractors, and study partners in grant administration.

D. Cost.

1. Budget—Use the PSP website's budget forms to provide a detailed budget for each year of your proposed project. The budget detail does not need to be repeated in your proposal's text. Since funding may be awarded for only parts of a project, your proposal's text should explain which tasks could be funded separately.

2. Cost share and matching funds —Our proposal is rich with direct cost-share, matching funds and in-kind provision of labor and materials. All cost- share funds noted below are committed and funded. The match funding scenario is described by types of projects directly related to project objectives and tasks to this proposal. All sources are contracted and funded. It is likely that the match funding amount will be higher in a year, after award and contracting due to the availability of new funds coming to the RCD and study partners.

Cost-Share funds: total $536,000 : *USDA Farm Bill funds from Environmental Quality Incentive Program* attributed to participating landowners in Petaluma Watershed= $ 460,000

Nutrient Management Planning, Nutrient Budget- 2 years of direct cost-share funding through UCCE to conduct the study= $50,000. Ag-producer relations, outreach, and 2 years study support from Clover–Stornetta Farms=$26,000

Matching funds: total $2,189,000

Installation of Best Management Practices on-farm. USDA NRCS's Farm Bill- Environmental Quality Incentives Program ($1,500,000 over last 5 years in Petaluma Watershed specifically), Sonoma County Water Agency ($577,000),

Education and Outreach Activities: District funding from general fund ($5,000), Sonoma County Water Agency ($35,000), California Coastal Conservancy ($25,000), Marin County Resource Conservation District ($1,000), and FARMS Leadership Program ($10,000). *On-farm in-kind matching fund* support from local landowners and stakeholders: private in-kind labor and materials support = $36,000

3. Long-term funding strategy: The grant as proposed, does not require significant long-term implementation or monitoring. SSCRCD will continue to be assertive and competitive in applying for all appropriate local, state and federal grant funding to continue achieving CalFed goals and priorities in the Petaluma watershed.

We will look to CDFG and USFWS for other grant funds for specific fisheries and wildlife habitat improvement projects. The RCD intends to solicit additional funds from Sonoma

County Water Agency to address TMDL planning, sediment source studies, outreach and GIS mapping for the Petaluma Watershed.

Because of the nature of the on-going service and support to agricultural landowners and the community, both USDA NRCS and SSCRCD will continue to provide monitoring and technical advice and assistance to landowners. For over 50 years, the RCD has endeavored to provide consistency and follow-up on projects and plans of all types. Our long-term strategy is to continue to assist landowners in sustainable agriculture, community education, and support a thriving economy through conserving natural resources, protecting water quality, and enhancing the natural habitat. These long-term goals and this work strategy has always been the hallmark of the service we provide, regardless of individual short-term projects and limited, shorter-term funding scenarios.

E. Compliance with Standard Terms and Conditions. The SSCRCD, as applicant, is willing and able to comply with all of the terms of the grant agreement. If accepted, this project would serve as our 6th CalFed grant award (either as project director or collaborator) and as such, we are familiar, experienced, and willing to engage in the contract with the specified terms and conditions of agreement. The SSCRCD is willing to serve as lead agency to comply with all CEQA/NEPA compliance, and the RCD is fully insured and meets or exceeds all required limits of coverage.

F. None in CalFed proposal form!
G. Literature Cited. Separate page – page 20
H. Nonprofit Verification. Letter attached.

G. Literature Cited.

References used to facilitate the preparation of this proposal are listed below.

- Buckland, S.T., D.R. Anderson, K.P. Burnham, and J.L. Laake. 1993. Distance sampling: Estimating abundance of biological populations. Chapman & Hall, London, U.K.
- Elkie,P., R. Rempel and A. Carr. 1999. Patch Analyst User's Manual. Ont. Min. Natur. Resour. Northwest Sci. & Technol. Thunder Bay, Ont. TM–002.
- ESRI (Environmental Systems Research Institute). 2000. ArcView 3.2a. Redlands, CA.
- Goals Project. 1999. *Baylands Ecosystem Habitat Goals. A report of habitat recommendations prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project*. U.S. Environmental Protection Agency, San Francisco, Calif./S.F. Bay Regional Water Quality Control Board, Oakland, Ca.
- Martin, T. E., and G. R. Geupel. 1993. Nest monitoring plots: methods for locating nests and monitoring success. Journal of Field Ornithology 64: 507-519.
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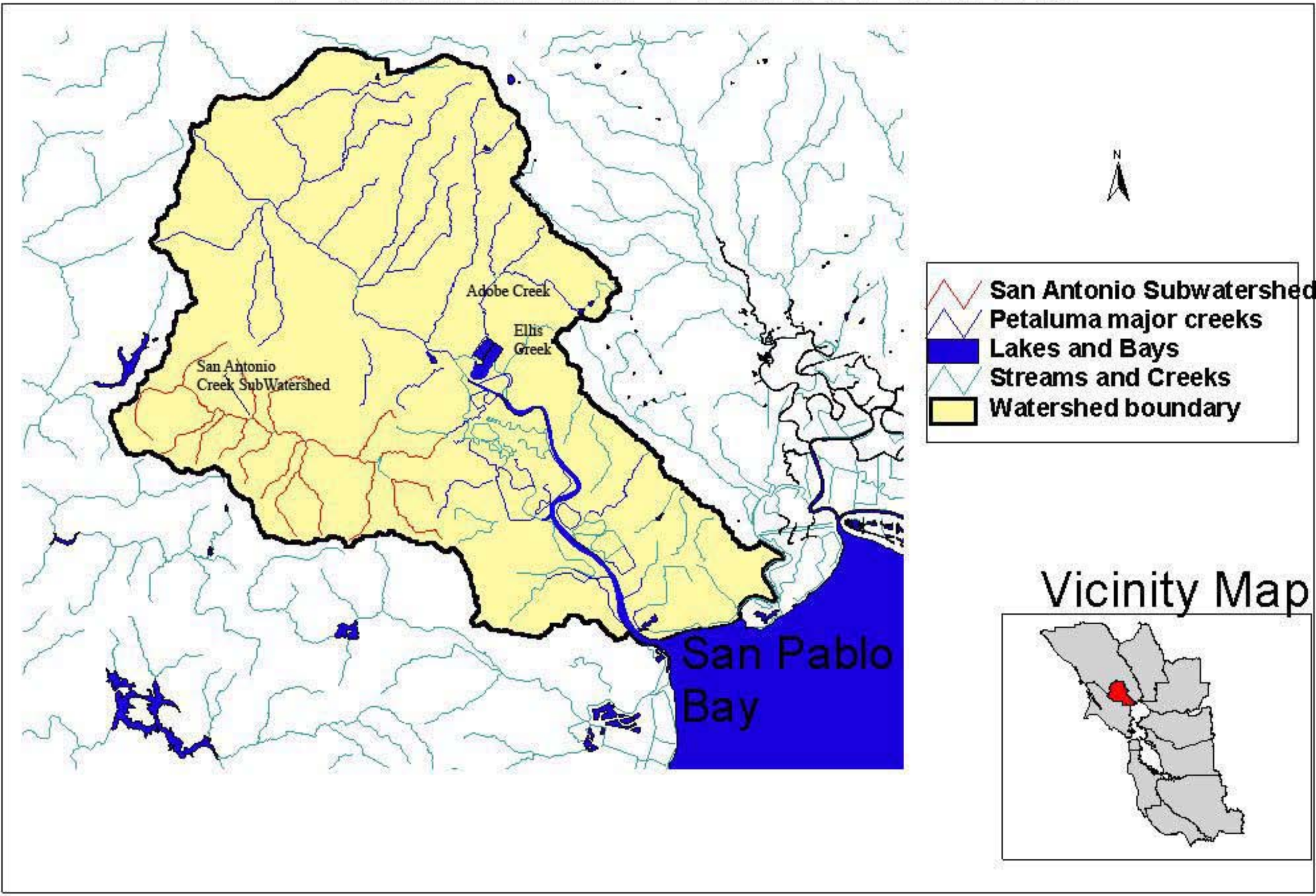
- Nur, N., S. Zack, J. Evens, and T. Gardali. 1997. Tidal marsh birds of the San Francisco Bay region: Status, distribution, and conservation of five Category 2 taxa. Final draft report to National Biological Survey (now US Geological Survey). Available from Point Reyes Bird Observatory, Stinson Beach, CA.
- Prunuske Chatham, Inc., 2000. *Proposal for San Antonio Creek, Googins Ranch Streambank Repair Planning, Design, and Permit Acquisition Services*.
- San Francisco Estuary Institute, 2000. *Application of the San Francisco Estuary Institute Watershed Science Approach to San Antonio Creek*
- Southern Sonoma County Resource Conservation Service, 2000. *Habitat Restoration Proposal: Private Lands/Partners for Fish and Wildlife*. Design drawings and plan by SSCRCD and contractor, Prunuske-Chatham, Inc.
- Southern Sonoma County Resource Conservation District, past years. *Meeting records of RCD consultation with San Antonio Creek landowner group.*
- CRWQCB: 2004, 'Pathogens in Tomales Bay Total Maximum Daily Load: Final Project Report',California Regional Water Quality Control Board, San Francisco Bay Region, 78 p.
- Fischer, D. T., Smith, S. V. and Churchill, R. R.: 1996, 'Simulation of a century of runoff across theTomales Bay watershed, Marin County, California', *J. Hydrology* 186, 253–273.
- Lewis, D. J., Lennox, M., Tate, K.W., Atwill, E. R., Larson, S., Olin, P. and Rilla, E.: 2001, 'Systems Approach for Management of Fecal Coliform Loading in a Coastal Watershed', in *Abstract Proceedings for American Water Resources Association Annual Water Resources Conference*, Albuquerque, NM, p. 221.
- Tate, K.W., Atwill, E. R., McDougald, N. K. and George, M. R.: 2003, 'Spatial and temporal patterns of cattle feces deposition on annual rangeland watersheds', *J. Range Manage.* 56, 432–438.

FIGURE 1

Petaluma Watershed

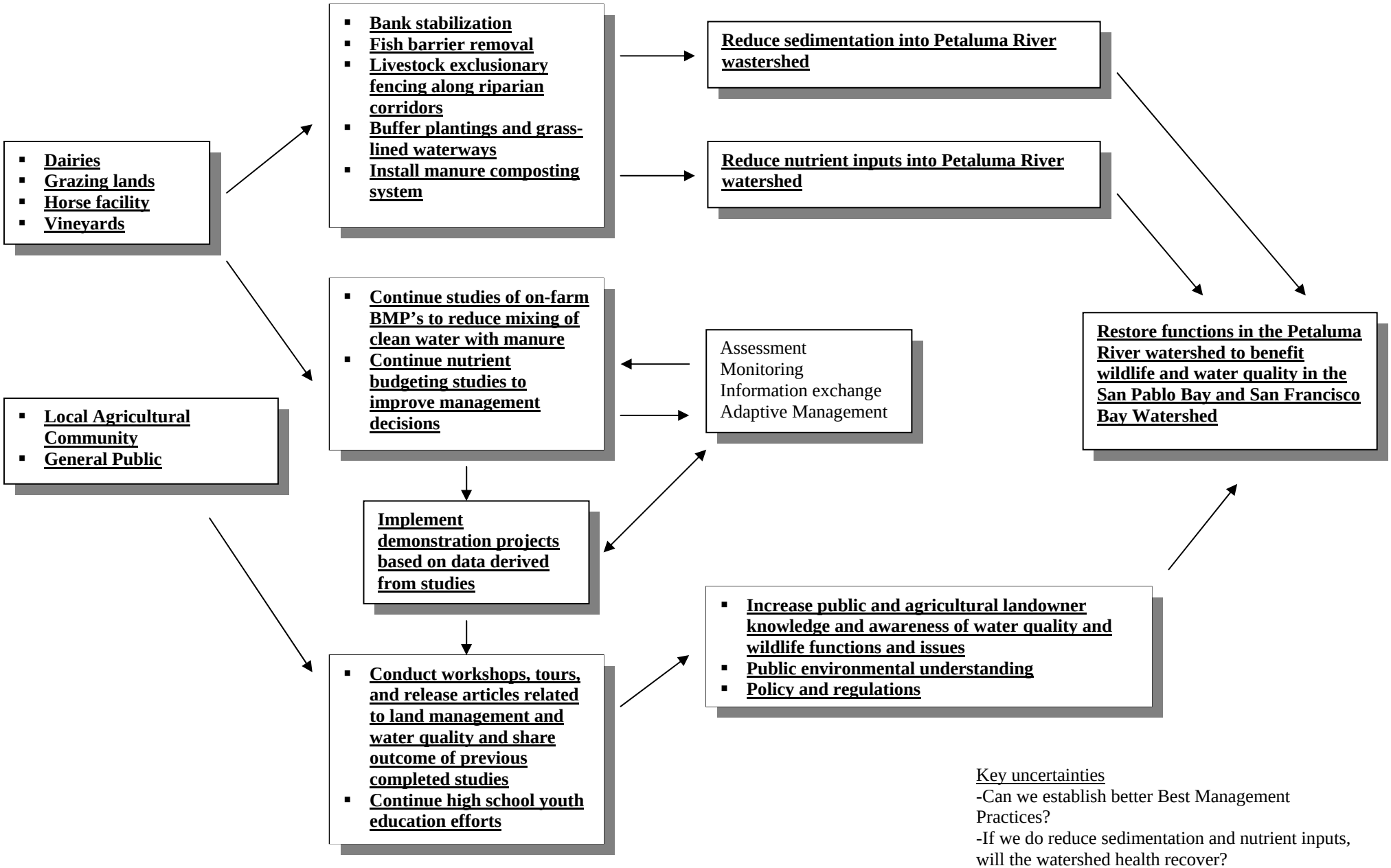


Distinctive characteristic of the Petaluma Watershed:
Largest intact marsh left in Bay Area, 5000acres

Figure 2

CONCEPTUAL MODEL: PETALUMA RIVER WATERSHED AGRICULTURAL ACTIVITIES FOR IMPROVING WATER QUALITY

Hypothesis: if farmers integrate best management practices on agricultural lands and if we increase public and agricultural understanding of BMPs and their appropriate uses, then the Petaluma River watershed and San Pablo Bay health will be significantly improved.



Key uncertainties
-Can we establish better Best Management Practices?
-If we do reduce sedimentation and nutrient inputs, will the watershed health recover?

Open grazing area

Area of livestock concentration

Riparian buffer in vineyard

San Antonio Creek Dairy Ranch

Adobe Creek Fish Passage Project

Tasks And Deliverables

Task ID	Task Name	Start Month	End Month	Personnel Involved	Deliverables
1	Project Management and Administration	1	36	Swent, Leandra Haydon, Susan Sweeney, Jason Gilday, Joyce	Quarterly Reports, narratives of activities, any reports, fliers, agendas, sign-in sheets, news releases, or photographs collected during the quarter.
2a	Adobe Fish Passage – Design, CEQA, Permits	1	20	Swent, Leandra Haydon, Susan Sweeney, Jason Lowrey, Kathie Mann, Jonathon	Design plans, CEQA documents, Storm Water Pollution Prevention Plan, riparian Revegetation plan, copies of permits, and any news releases.
2b	Adobe Fish Passage – Construction	19	24	Sweeney, Jason Sheffer, Paul Jensen, Mike Mann, Jonathon	Photographs before, during, and after construction.
3a	Bank Stabilization &Sediment Reduction – Design, CEQA, Permits	1	8	Swent, Leandra Haydon, Susan Sweeney,	CEQA documents, copies of permits, any news releases.

				Jason Lowrey, Kathie Jensen, Mike Mann, Jonathon	
3b	Bank Stabilization &Sediment Reduction – Construction	11	36	Sweeney, Jason Sheffer, Paul	Photographs before, during, and after construction.
3c	No Till Drill Install Exclusionary Fencing &Buffers	1	33	Sweeney, Jason Sheffer, Paul	No-till drill usage documents and photographs.
4a	Manure Management &Water Quality Studies	1	19	Lewis, David Larson, Stephanie Creque, Jeff	QAPP (already completed by UCCE), research results, published documents, and any news releases.
4b	Construct Demonstration Projects	20	36	Swent, Leandra Haydon, Susan Sweeney, Jason Sheffer, Paul Lewis, David Gustafson, Jon Creque, Jeff	Photographs, before, during and after construction. Monitoring results.
5	Composting				Copies of County

	Facility – Design, Permit, and Construction	**2**	**26**	**Sweeney, Jason Sheffer, Paul Creque, Jeff**	**permits, any news releases, and photographs before, during and after construction.**
6	**Outreach &Education (Workshops, Training, Tours)**	**1**	**36**	**Griffin, Mike**	**Narratives of activities, any reports, fliers, agendas, sign–in sheets, surveys, photographs of forms, news releases, or any photographs collected while conducting outreach activities, and copies of literature provided in Hmong or Spanish.**
7	**Watershed Coordination**	**1**	**36**	**Swent, Leandra Haydon, Susan Sweeney, Jason**	**Quarterly narratives of Outreach activities.**

Total Project Budget Summary by Task and by Fiscal Year

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

BUDGET SUMMARY	Total Amount for Year 1	Total Amount for Year 2	Total Amount for Year 3	Total Amount for All Years
Total Costs for Task One	$ 34,712.83	$ 35,762.50	$ 36,812.16	$ 107,287.49
Total Costs for Task Two	$ 148,434.27	$ 511,199.81	$ 69,195.84	$ 728,829.92
Total Costs for Task Three	$ 61,037.09	$ 366,785.66	$ 280,365.12	$ 708,187.87
Total Costs for Task Four	$ 106,484.00	$ 106,960.00	$ 3,906.00	$ 217,350.00
Total Costs for Task Five	$ 7,854.00	$ 5,124.00	$ 420.00	$ 13,398.00
Total Costs for Task Six	$ 22,120.00	$ 16,921.80	$ 13,034.00	$ 52,075.80
Total Costs for Task Seven	$ 27,054.72	$ 27,941.76	$ 28,828.80	$ 83,825.28
Total Costs for Task Eight	$ -	$ -	$ -	$ -
Total Costs for Task Nine	$ -	$ -	$ -	$ -
Total Costs for Task Ten	$ -	$ -	$ -	$ -
Total Costs for Task Eleven	$ -	$ -	$ -	$ -
Total Costs for Task Twelve	$ -	$ -	$ -	$ -
Total Costs for Task Thirteen	$ -	$ -	$ -	$ -
Total Costs for Task Fourteen	$ -	$ -	$ -	$ -
Total Costs for Task Fifteen	$ -	$ -	$ -	$ -
Total Costs for Project Tasks	$ 407,696.91	$ 1,070,695.53	$ 432,561.92	$ 1,910,954.36
1/Cost Share	$ 191,000.00	$ 191,000.00	$ 191,000.00	$ 573,000.00
2/ Other Matching Funds	$ 473,000.00	$ 473,000.00	$ 473,000.00	$ 1,419,000.00

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

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

Environmental Compliance

CEQA Compliance

Which type of CEQA documentation do you anticipate?
− none *Skip the remaining questions in this section.*
X 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.
Southern Sonoma County Resource Conservation District
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.

The Southern Sonoma County Resource Conservation District will contract with Prunuske Chatham Incorporated to fullfill all permitting and environmental compliance requirements. Project plans will be derived from preliminary agency scoping and landowner input. An initial study checklist will be completed and appropriate studies conducted. Project description will be determined by potential environmental impacts. All appropriate permits will be sought. All CEQA documents will be completed as required. SSCRCD will serve as lead agency and the Board of Directors will certify all documents.

NEPA Compliance

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

Identify the lead agency or agencies.

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

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

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

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

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

Local Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
conditional Use Permit	–	–	
variance	–	–	
Subdivision Map Act	–	–	
grading Permit	X	–	
general Plan Amendment	–	–	
specific Plan Approval	–	–	

rezone	–	–	
Williamson Act Contract Cancellation	–	–	
other	–	–	

State Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
scientific Collecting Permit	–	–	
CESA Compliance: 2081	–	–	
CESA Complance: NCCP	–	–	
Lake Or Streambed Alteration Agreement	X	–	
CWA 401 Certification	X	–	
Bay Conservation And Development Commission Permit	–	–	
reclamation Board Approval	–	–	
Delta Protection Commission Notification	–	–	
state Lands Commission Lease Or Permit	–	–	
action Specific Implementation Plan	–	–	
SWRCB Water Transfer Approval	–	–	
other	–	–	

Federal Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
ESA Compliance Section 7 Consultation	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 **Sixteen Landowners – See Note.**	**X**	**X**	

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

Sixteen local landowners have already signed access agreements for work on: dairies, grazing lands and vineyard lands, and horse pasture. Access agreements are on file in the SSCRCD office.

Land Use

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

How many acres will be acquired by fee?

How many acres will be acquired by easement?

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

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

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

Describe briefly the provisions made to secure this access.

At present, we have secured letters of permission for all the proposed actions on private property contained within this funding proposal.

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

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

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

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

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

Land Designation	Acres	Currently In Production?
Prime Farmland	**1,565**	**X**
Farmland Of Statewide Importance	**720**	**X**
Unique Farmland	**460**	**X**
Farmland Of Local Importance	**2,550**	**X**

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.*
X 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.*
X Yes. *Answer the following question.*

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

There are no changes to land use proposed. The goals of the proposed projects are to enhance existing wildlife values and improve water quality without any changes to land use or the operations currently under Williamson Act contracts.

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

All work proposed is consistent and compatible with current zoning and land use designations. No change in zoning or land use desigations are proposed in conjunction with the proposed projects.