

5a. Detailed Project Description Narrative

Project Summary: The Dutch Flat Creek Enhancement/Nelson Ranch Sustainability project will improve wetland resources, water quality, and the operation of a third generation working ranch. The project is unique in that it involves enhancing a large creek which will result in improving crops used for hay production. The integration of enhancing the streambank to improve crops involves stabilizing stream banks while also creating crossing locations within the stream for wheels of a center pivot system. The wheel crossing locations serve two purposes: 1) allow a hardened and stable surface for wheels to roll; and 2) provide grade control within the stream which is entrenched. Neither the RCD, landowners, nor Natural Resource Conservation Service staff have worked with this type of integration, however, all agree that it can be done. Based on past success of the RCD working within entrenched stream channels, this project will serve as a model for stabilizing a streambank while producing highly productive hay adjacent to it.

Environmental Setting Narrative: The project area lies within a small fault-block valley (10,000 acres) that was once a lake during the Pleistocene era. Prior to European settlement, the valley was likely a very large meadow system with stringers of riparian vegetation. Ash Creek, Dutch Flat Creek, North Fork Ash Creek, Rush Creek, and Barber Creek all flow into the valley and then exit via Ash Creek near the town of Adin. Several creek reaches, including Dutch Flat Creek were straightened to minimize marshy areas and improve range conditions and hay production. Through time, several factors including straightening, poorly designed/managed bridges and culverts, and overgrazing, resulted in degraded riparian and aquatic conditions within the stream. Dutch Flat Creek has become entrenched. Its base elevation is approximately 6-8 feet lower than historic levels and its width is likely 7-10 times wider. As described in the channel evolution process described by Schum et al. (1984), the creek continues to widen and has developed an inset floodplain. It is still very unstable in most areas, and during high flows, streambanks slough off and contribute high levels of sediment. In some areas, a diverse herbaceous vegetation exists in the stream along with occasional willow clumps.

The Nelson Ranch was purchased in the early 1900's by the current landowner's grandfather. The primary commodities produced when it was first purchased are still the same today – cattle and hay. However, the recent proliferation of pivot systems and their efficient use of water has improved the financial return for hay producers. In addition, hay prices have risen in recent years and many landowners in the region are replacing hand and wheel lines with pivot systems. The Nelson Ranch owners have decided to purchase and install three pivot systems, two of which will be planned to irrigate hay on both sides of Dutch Flat Creek. Currently, alfalfa and pasture grass are irrigated with wheel lines on the east side of the creek, and dry-land pasture is raised on the west side of the creek. The west side of the creek will be planted with pasture grass and alfalfa, while the east sides will remain in alfalfa.

Biological and cultural resource surveys were conducted as part of the planning and design process. No threatened or endangered species occur on the site, or have a high potential to occur on the site. Several special-status species are known to occur in the region, and some of these species are known to occur or have a moderate potential of occurring on the site. The project will be constructed at a time to avoid impacts on any known species (e.g. nesting raptors) and will not result in any adverse impacts on federally or state threatened/endangered species. There are no known archeological sites on the project.

Construction methods include operating dirt moving machinery (e.g. excavator, loader, scraper) to remove or add soil to create benches, move and place rocks, and remove dirt from higher elevation areas in order to minimize erosive flood forces in the floodplain. This disturbance area has been calculated to be approximately 3.5 acres.

Consistency with Proposition 84 and SNC Goals: This project will directly improve water quality and aquatic and terrestrial natural resources, and will conserve water. These improvements are consistent with three program areas identified within Proposition 84, and consistent with its mandate to protect and restore rivers, lakes and streams, their watersheds and associated land, water, and other natural resources. Water quality improvements will consist of reduced sedimentation and lower water temperature. Riparian vegetation, both herbaceous and deciduous shrubs will expand in density and area. Also, aquatic habitat will improve as the width/depth ratio of water within the creek will be greater after enhancement work. The overall linear distance of stream improved is 3,000 feet and the acreage estimated for the disturbed area during construction is 3.5 acres. Replacement of the wheel lines will increase sprinkler irrigation efficiency by 20%. In addition to meeting Proposition 84 goals, the project will address six of the seven SNC goals as described below.

1. *Provide increased opportunities for tourism and recreation:* The project will not provide increased opportunities for tourism, but will improve habitat conditions for recreation. Through improved habitat conditions, incremental improvement in fish and wildlife related pursuits (e.g., hunting, bird watching, wildlife viewing) can be expected in the project area. In addition, the landowner is committed to showing this project to anyone interested in learning about the integration of streambank enhancement with pivot irrigation.

2. *Protect, conserve, and restore the region's physical, cultural, archeological, historical, and living resources:* The project will protect, conserve and restore physical and living resources in the form of naturally functioning streams, associated riparian habitat, and agriculture land. Many tributary streams within the upper Pit River Watershed, especially those owned and managed in large valleys, are degraded from a variety of past management practices. This project will demonstrate that streambank and channel stabilization techniques can be integrated with a center pivot sprinkler system that crosses the creek. Multiple resource benefits will occur that other private landowners may observe and follow. Fish species will also indirectly benefit from restoration due to an expected increase in summer base flows, cooler water temperatures, and the

retention of channel pools during the dry season. Surveys by qualified archaeologists have been conducted and no sensitive sites were found.

3. *Aid in the preservation of working landscapes* – The project will directly conserve and improve the agricultural activities on the Nelson Ranch while also minimizing the loss of valuable land through erosion. Improved habitat conditions will result that benefits livestock foraging and eliminates the replacement costs for fences, pumps, and buried mainline that currently occur from the erosion.

4. *Reduce the risk of natural disasters, such as wildfires*: The enhancement of meadow and riparian vegetation will reduce fire hazard because these areas remain “green” during the dry season. This condition will provide a more natural and fire-resistant landscape.

5. *Protect and improve water and air quality*: The proposed project will directly improve water quality within Dutch Flat Creek. Improved water quality includes reduced water temperatures (from the formation of deeper pools), reduced sediment (as a result of less concentrated flows and denser vegetation), and increased dissolved oxygen (from the turbulence created from water flowing over the rock vanes).

6. *Assist the regional economy through the operation of the SNC program*: The project will improve long-term economic outputs to the local economy through reducing infrastructure costs, purchasing of materials (e.g. rock) and supplies (e.g. fuel), hiring local contractors, and improving agricultural productivity. Many project services and materials are commonly available from local vendors who will in turn support the regional economy with their payrolls and taxes. The contractors responsible for designing and permitting this project also are local, and a pool of skilled heavy equipment operators with this type of project experience is available. This availability of local personnel for all aspects of project implementation ensures that project payroll funds will largely stay in the region.

7. *Undertake efforts to enhance public use and enjoyment of lands owned by the public*. The proposed project has no measureable connection to this SNC program goal.

Project Goals and Outcomes:

Goal 1- Support the long-term economic viability and ecological value of the Nelson Ranch: The integration of streambank and aquatic habitat enhancement with the installation of new irrigation system and crops is vital for the landowner to continue working the ranch. The habitat improvements will not only benefit natural resources on-site, but will also benefit downstream habitat with improvements in water quality and migratory habitat for fish and wildlife.

Goal 2 – Improve the natural form and function of the stream and floodplain: Through channel streambank stabilization and floodplain redesign, the project will help connect the creek with its current floodplain. True restoration of Dutch Flat Creek in Round

Valley does not seem feasible for a multitude of reasons (e.g. houses and other infrastructure are built within the historic floodplain, high value crops are growing on the historic floodplain). However, in some reaches, such as this project area, the creek is showing signs of stabilization within its new floodplain. This project will build on those natural processes and speed the recovery and stabilization of the stream and floodplain. Improving the stream channel to its floodplain will directly affect the linear feet (estimated at 3,000) of streambank enhanced (Performance Measure 6), and acres of land improved (Performance Measure 13). Improving the connection of the stream to the floodplain will provide a mechanism for trapping sediment as discussed in Goal 3, and create in-stream habitat diversity for fish species.

Goal 3 – Stop soil erosion at the site: Eliminating the existing erosion along the outward bends of the creek will be accomplished by installing rock vanes, resloping the bank, planting vegetation, and managing the area to encourage dense vegetative growth. Once completed, the outward bends will slow water velocity and stop lateral erosion.

Goal 4 – Improve habitat values for the site: Achieving Goals 2 and 3 will result in improved habitat value for biological species at the site. The rock vanes will re-direct flow toward the center of the stream channel and create a deeper pool, thus increasing instream habitat diversity for fish. Bank stabilization will result in a denser and more vigorous riparian community along the streambanks and this provides important cover for local wildlife species (e.g. deer, resident and migratory birds). Finally, the improved habitat conditions along the riparian areas and floodplain will encourage growth of native plants that may out compete some noxious weeds (e.g. Scotch thistle).

Goal 5 -- Minimize long-term maintenance and loss of agriculture infrastructure: Achieving Goals 2 and 3 will result in minimizing long-term maintenance to ensure existing agriculture infrastructure (e.g. fences, pumps, irrigation pipe) are not destroyed from streambank erosion.

Goal 6 – Document the Performance Measures (No. 1-4) identified in the SNC SOG 1 Grants Program: Four Performance Measures identified within the SOG Grant Program will be documented throughout the life of the project. This will include estimating the number of people who read newspaper and newsletter articles, recording the number of people who attend meetings where the project is discussed or presented, and recording the dollar value of resources leveraged, the number and types of jobs created, and the number of new, improved, or preserved economic activities.

Success Criteria: Project success criteria have been established to document whether the project goals will be met. Criteria has been identified for hydrology and vegetation.

Hydrologic Success Criteria: The project will be successful if Dutch Flat Creek does not actively erode the streambank in the project area. Spring and fall monitoring will consist of a thorough site inspection of terrestrial and aquatic conditions on-site. The inspection will include recording pre and post project photographs and associated notes.

In addition to photo-monitoring, pre and post project construction cross section data will be recorded to show changes in streambed habitat diversity and width to depth ratios of the stream channel.

Vegetative Success Criteria: Vegetation is expected to convert from bare dirt and sparsely vegetated areas to a diversity of herbaceous species and willows along the streambank. This will include establishing and developing riparian areas along the outward and inward bends of the creek where the bench and rock vanes are created. The project will be successful if the riparian-deciduous shrub community increases from its present state by a factor of three and the total ground cover increases from existing percentage of 40% to 85%.

The extent (acreage) of riparian vegetation and ground cover will be measured prior to project construction, and then again at year five. The acreage estimate will be conducted by using GPS to delimit polygons around riparian-deciduous shrubs, and the line-intercept method will be used to document percent cover.

5b. Workplan and Schedule Narrative

Table 1 lists the tasks, schedule, and constraining factors for this proposed project. Task No. 1 includes the day-to-day responsibilities of invoicing, corresponding, bookkeeping, and coordinating and preparing for RCD and other meetings. The Pit RCD Business Manager, Sharmie Stevenson, will conduct these duties for the life of the grant. There are no constraining factors associated with this task (total \$3,600).

Table 1. Tasks/Deliverables, timeline, and constraining factors

Tasks	Schedule	Constraining Factors
1. Administration	Life of grant	None
2. Post Design, Pre-Construction	March 2013 – July 2013	Receiving bids within the construction budget and timeline
3. Construction	July 2013 – October 2013	Wet weather, contractor quits
4. Reports, Monitoring, Outreach	July 2013 – March 2014	None

Task No. 2 includes the following activities that include preparing a construction bid, attending a pre-bid meeting, coordinating with the Construction Manager (StreamWise), and collecting any pre-construction data or performing any other pre-construction tasks (meeting with landowners, agencies, etc.). Only one constraining factor is associated with this task, and that includes receiving qualified bids that are within the construction budget and timeline. Several local qualified contractors (e.g. contractors that have constructed rock vanes associated with a streambank stabilization project) exist near the proposed project, and other contractors that are qualified, but may not have actually constructed rock vanes, are also present.

Task No. 3 is the construction phase of enhancement. This includes resloping constriction points within the inset floodplain, transporting fill material to low areas adjacent to the creek, constructing cross vanes, placing gravel, and replanting salvaged vegetation. Two constraining factors, wet weather, and the termination etc. of a contractor exist for this task. A construction bond will be required for this project to ensure the project can be completed if, for any unforeseen reason, the contractor is unable to complete the job, quits, or is released from the RCD for lack of execution. In order to avoid weather issues, the timeline of construction will start between mid-July and mid-August.

Task No. 4 includes post construction activities such as collecting as-built information, preparing outreach material, holding meetings to highlight the project, and preparing reports for funding sources. No constraining factors are associated with this task.

The project will be implemented efficiently by preparing a timeline and working diligently to complete tasks associated with the timeline. The Pit RCD has successfully “managed” several grant projects, and the same staff and contractors who implemented them are proposed for this project.

5c. Restrictions, Technical/Environmental Documents and Agreements

1. The landowner has signed a binding agreement with the Pit RCD for this project.
2. No conflicting easements, mineral rights, toxic contamination etc. exist that might affect the project area. Both of the parcels are enrolled in the Williamson’s Act.
3. The Pit RCD will conduct a wetland delineation and prepare a Pre-Construction Notification (e.g. Nationwide Permit No. 27) to comply with Section 404 of the Clean Water Act through the Army Corps (Corps) of Engineers if the project is funded. The RCD will also prepare and submit a 401 Certification to the Regional Water Quality Control Board and a Streambed Alteration Agreement (SAA) to the California Department of Fish and Game. The Natural Resource Conservation Service has conducted archeological surveys and notified State Historic Preservation Office (SHPO). The Pit RCD has successfully completed the above permitting processes for several projects and will use existing RCD funds and grant funds from other entities that are already secured to complete these steps. The Corps will also likely consult with SHPO after they review the PCN. The RCD has received a support letter from the landowner to ensure permission to conduct activities that are necessary to complete the project.

5d. Organization Capacity Narrative

The RCD has staff and consultants under existing contracts to implement the post-design and construction management portions of this project. Sharmie Stevenson, the Pit RCD Business Manager, has been serving this role for 15 years. She has successfully managed and is currently managing numerous grants (see below Table 2) similar to this project. The Pit RCD Watershed Coordinator (WC), Todd Sloat, who also serves as WC for the Fall River RCD, has managed numerous natural resource projects in recent years. Some of these projects are highlighted at <http://pitriveralliance.net/pitracd/> and are summarized in Table 2 below. The Board of

Directors, which currently consists of four private landowners in the district, has a broad range of experiences and connections with the local community. The RCD has also developed close relationships with local agency representatives from the Natural Resource Conservation Service, Department of Fish and Game, Department of Water Resources, Regional Water Quality Control Board, U.S. Forest Service, Bureau of Land Management, and the United States Fish and Wildlife Service. Relationships have also been formed with conservation groups such as Ducks Unlimited and the California Waterfowl Association. Because of these relationships and the success of past projects, the landowners in this rural community look to the RCD for assistance with natural resource projects, and view the RCD in a positive manner. The design was prepared by StreamWise, a local consulting firm that was selected by the Pit RCD during a competitive bidding process. StreamWise was also the design consultant and construction manager for other recent projects in the area. These projects have been highly successful at meeting stated project goals. See Table 2 below for a summary of recent Pit RCD projects.

If funded, it is the intent of the RCD to contract with Todd Sloat Biological Consulting, Inc. (Sloat Consulting) to serve as watershed coordinator for the proposed project and StreamWise to serve as the Construction Supervisor. By doing so, the RCD hopes to maximize the number of people and resources benefited by the project. Mr. Sloat has been the watershed coordinator for the Pit RCD for approximately eight years. During this time he has been an effective partner in coordinating activities between landowners, stakeholders, and agency people. Coordination on this scale is vital to preserving the area's watershed, as more than 50% of the land on the area's waterways is owned privately, and in many cases, generationally. Because Mr. Sloat was raised in the area, he has been able to relate to and influence many private landowners in productive and beneficial ways. In addition, he has successfully coordinated and managed several of the RCD's projects.

TABLE 2. Summary of Recent Pit RCD Projects and Projects Coordinated by their Watershed Coordinator

Project	Project Type	Schedule	Primary Funds and Value	Reference
Ash Creek Wildlife Area Restoration Project	Meadow restoration and infrastructure integration	Construction initiated in 2012	SNC (1 million); WCB (1.3 million); DWR (1.1 million)	Steve Burton, DFG, 530-459-1129
Harlow Meadow Restoration Project	Meadow restoration	Completed fall 2011	USFWS Partners (25K); Rocky Mt. Elk Found. (19K)	Pete Johnson, W.M. Beaty and Assoc., 530-335-2881

McBride Springs Meadow Restoration Project	Meadow restoration	Completed fall 2011	Lassen RAC (18K); NRCS (50K)	Buck Parks, Pit RCD President, 530-640-0715
Mason – Pit River stabilization project	Streambank stabilization and habitat enhancement (rock vanes, bank resloping, vegetation planting)	Constructed in October 2010	SNC (ca. 150K)	Gary Monchamp, 530-294-5596

5e. Cooperation and Community Support

The project has direct participation and support from the private landowner at the project site. Another important cooperative effort was the development of the *Pit RCD Watershed Management Strategy*, which identifies the project’s adjacent locations as restoration priorities. This document was developed in consultation with a wide range of private stakeholders, in addition to other agencies (i.e., CDFG, NRCS, RWQCB, DWR) and stakeholders (Ducks Unlimited, California Waterfowl Association). During the WMS development process, stakeholders attended meetings, reviewed and wrote text, and provided input on resource issues within the watershed. Some of these adjacent projects were implemented in previous years and can be viewed on the Pit RCD website (see www.pitriverriveralliance.net/pitrccd). The Pit RCD has also discussed this project and garnered a letter of support from the Modoc County Board of Supervisors.

The project is compatible with other previous planning projects including the *Upper Pit River Watershed Management Strategy*. This strategy has goals or resource concerns that identify “meadow and stream projects” as important resource topics for their local communities. More recently, the project has been discussed and promoted through the Project Development subcommittee as part of the Upper Pit River Integrated Regional Water Management Plan development.

5f. Long-Term Management and Sustainability

The project occurs on private land that is currently managed by a father and son. The father has entered into an agreement with the Pit RCD. If the project is funded, it will allow the landowner to irrigate additional acreage and produce hay. Currently, hay production is one of the more profitable agriculture products in the region, and increasing the income potential of the landowner will enable them to financially manage the property in the manner that protects and enhances natural resources (e.g. stream corridor). Currently, the stream channel is in a degraded condition (see project photos). A Draft Management Plan has been prepared and is attached with this application. If the project is funded, the plan will be implemented and added as an addendum to the landowner agreement with the Pit RCD.

5g. Performance Measures Narrative

Performance Measures (PM) that will be documented as part of the project include PM 1-4, PM 6, and PM 13. The Table below lists the PMs and describes how they will be assessed and the responsible documenting entities.

Performance Measure (PM)	Responsible Entity and Description
PM 1. Number of people reached	The Pit RCD will publish at least one newspaper article and one newsletter article highlighting the project. The Watershed Coordinator will also present the project in at least two forums (e.g. neighboring RCD meeting, Cattlemen’s meeting, natural resource related conference)
PM 2. Dollar value of resources leveraged for the Sierra Nevada	The Pit RCD and Sierra Institute for Community and Environment (SI) will track dollars leveraged.
PM 3. Number and types of jobs created	The Pit RCD will document the number and type of full-time-equivalent jobs created from the SNC funding
PM 4. Number of new, improved, or preserved economic activities	The Pit RCD and SI will document the number of new, improved, or preserved economic activities.
PM 6. Linear feet of streambank protected or restored	The Pit RCD will conduct an pre and post enhancement calculation of the linear feet of streambank protected.
PM 13. Acres of land improved or restored	The Pit RCD and landowner will document the acres of habitat and agriculture areas improved from project activities.

5h. Budget Narrative

Direct Costs: Direct costs in this budget pertain only to project work necessary to implement project construction. This includes coordination/management time (includes time to prepare reports), construction supervision, construction, materials, and equipment rental. All work will be conducted under contract. Watershed coordination costs in this budget pertain only to expenses directly related to project implementation. This line item assumes approximately 160 hours of work plus \$777 in expenses (i.e. mileage) over the life of the grant. The position of Pit RCD Watershed Coordinator is a contract position, currently filled by Mr. Todd Sloat, and supported by Todd Sloat Biological Consulting, Inc. Mr. Sloat and his company will serve as the lead for project implementation. The Watershed Coordinator will serve as grant manager, and will provide general oversight of all elements of the proposed project, including: a) oversight to all contracts and in-kind service agreements; b) leadership for all meetings, field tours, and other public contact functions; c) preparation of all documents, legal as well as informational, maps, and educational documents; and d) final editing, review and submittal of construction bid solicitations, monitoring reports, and other reporting requirements.

Construction Supervision: This line items will cover contract costs for a Construction Manager responsible for the restoration design plan during construction. Construction

supervision will be provided by Rick Poore of StreamWise and the Watershed Coordinator. This item allows for approximately 170 hours of service.

Construction: This line item will cover costs associated with a Contractor skilled in stream restoration and/or enhancement activities.

Materials needed for construction include rocks for construction of the vanes (\$8,600), and rock for filling in areas for wheel crossings (\$8,600). Equipment costs include rental of two excavators.

Indirect Costs: Indirect costs include Pit RCD staff time to complete outreach and education materials and activities, purchase of ink, and printing associated with a newsletter. It also includes a portion (15 %) of the RCD Workers Compensation costs.

Administrative Costs. Costs associated within this section are primarily for Pit RCD staff time for accounting associated with the proposed project and grant. These are estimated to be 10 hours/week for 42 weeks. These staff hours will be used for monthly billing, tracking and accounting of design contracts, etc. These hours will not be billed for any work that is not necessary for the completion of the proposed project (total \$14,700). Other administrative costs include expenses associated with the operation of the RCD and include, audit, telephone, and utilities. It is assumed that implementation of the proposed project will account for approximately 25% of the RCD's operating costs, such as utilities, telephone, internet, insurance, audits, etc. These costs are estimated at approximately \$300.00 per month for the life of the grant (total \$3,600).

Other Project Contributions: See detailed budget for this information.

As shown in the Budget, the streambank enhancement portion of the project does not depend on funds other than those requested from SNC. If funding from SNC is received, these funds will be sufficient to complete the project. If this project is not completed, the existing erosion will continue and widen the inset floodplain, more land will be lost from soil erosion, aquatic and terrestrial habitat conditions onsite and downstream from the project site will continue to degrade, and more landowner infrastructure will be lost (e.g. pumps, fences). This process will occur until the stream has developed a "new" floodplain at a lower base elevation. More importantly for the landowner, the pivots will only be able to cover half of the irrigated area.

Other "hidden" costs, not often considered, include costs to landowners who must comply with regulatory programs (e.g. Regional Water Quality Agriculture Waiver Program) that are in part, developed because of poor watershed conditions (e.g. high sediment loading) that currently exist throughout the state. Once this site is enhanced, the natural process of the stream and floodplain will function and greatly reduce the amount of erosion currently occurring. Minimal costs will occur to landowners/managers in the future at this site.