Appendix B-8

LAKE TAHOE RESTORATION PROJECTS
ESTIMATED NECESSARY EXPENSES & KEY MILESTONE DATES

Project Name: Upper Truckee River Restoration Project, Sunset Reach Agency: LTBMU
Prepared by: Theresa Loupe Phone: 530-543-2788 EIP #: 908, 948
SNPLMA Project #: ____

Identify estimated costs of eligible reimbursement expenses:

1. Planning, Environmental Assessment and Research Costs (specialist surveys, reports, monitoring, data collection, analysis, NEPA, etc.)	$ 225,000	5 %
2. FWS Consultation—Endangered Species Act	$ 10,000	0.2 %
3. Direct Labor (Payroll) to Perform the Project	$ 500,000	11.3 %
4. Project Equipment (tools, software, specialized equipment, etc.)	$ 250,000	5.5 %
5. Travel (including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.)	$ 15,000	0.3 %
6. Official Vehicle Use (pro rata cost for use of Official Vehicles when required to carry out project)	$ 100,000	2.2 %
7. **Cost of Contracts, Grants and/or Agreements to Perform the Project**	$ 1,860,000	41.3 %
8. Other Direct and Contracted Labor: Agency payroll for the Contracting Officer to do project procurement, COR, Project Inspector, Sec. 106 Consultation if required, NEPA Lead, Project Manager, Project Supervisor, and subject experts to review contracted surveys, designs/drawings, plans, reports, etc.; Also covered is the cost to contract for a Project Manager and/or Project Supervisor if contracted separately from other project contracts)	$ 1,000,000	22.2 %
9. **Other Necessary Expenses** (See Appendix B-11)	$ 540,000	12
TOTAL:	$ 4,500,000	100 %

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Purchase materials for construction	**June, 2010**
New channel construction (approx. 6,000 ft)	**October, 2010**
Irrigate and season new channel, construct engineered structures	**2011**
Reconnect new channel and fill old channel	**October, 2012**
Monitoring and Maintenance	**2013 and 2014**
Final Project Report	**December 31, 2014**
Final Completion Date:	**March 31, 2015**

COMMENTS:

None.

ROUND 10 CAPITAL PROJECT NOMINATION FORM
LAKE TAHOE FEDERAL SHARE EIP CAPITAL PROJECTS
APPENDIX K

Project Name: Upper Truckee River Restoration Project, Sunset Reach

Federal Agency Sponsor: US Forest Service **Contact:** Theresa Loupe

Threshold: WQ, SC, V, F, W **Phone Number:** 530-543-2788

Threshold Standard: **Email Address:** tloupe@fs.fed.us

F2-4 Fisheries
SC2 Soil conservation
V1 Vegetation
WQ1-6 Water Quality
W1-2 Wildlife

Funding Requested in this Round: $4,500,000 **Total Project Cost:** $5,550,000

Federal Share EIP rationale (select and describe appropriate EIP criteria from 5 items below – projects must meet one or more of these 5 items):

1. Does the project involve federal land? **Yes, approximately 2/3 of Reach 5 of the Upper Truckee River is owned by the FS, LTBMU.**
   - If so, is the federal land involved important to successful implementation of the project? **Yes, it's critical for habitat improvement success due to the larger extent of floodplain meadow present on federal land within the project area.**
2. Does the EIP identify the federal funding for the EIP project (project #)? **Yes, project #948 for SEZ improvement, and project #908 for fisheries.**
3. Does the project involve the conservation of a federal or regional threatened, rare, endangered or special interest species? **Yes, willow flycatcher has been detected in the project area.**
4. Does the project involve an identified federal interest such as the detection and eradication of noxious aquatic or terrestrial invasive species? **No**
5. Does the project otherwise directly support federal implementation of capital projects in the EIP (e.g. technical assistance, data management, resource inventories, etc.)? **Yes, this project will support other channel and SEZ restoration projects nearby along the Upper Truckee River, and will also provide benefits to the Urban Erosion Control projects in the area.**

List Capital Focus Area(s) (as described in the 2006 Federal Vision):

Watershed and Habitat Improvement

Circle all that apply (must meet a minimum of one category):

1. Continued emphasis on forest ecosystem health/fuels reduction projects considering the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy.

2. Continued implementation of projects approved in Rounds 5 through 9 which implement the EIP. Project proposal should identify the applicable project(s) from Rounds 5 through 9 and clearly describe the phase/product being produced along with the consequence of not completing the project phase proposed for Round 10.

3. Project is consistent with and contributes toward TMDL pollutant reductions within the four source categories (atmospheric, urban & groundwater, forested uplands, and stream channel). List source category being addressed and integrate into the project nomination the following TMDL considerations.

Source Category: **Stream Channel**

a) Describe whether, and how, the project demonstrates advanced, alternative, or innovative practices.

This project will utilize proven methods for bank stabilization and aquatic habitat enhancement features, and will incorporate new, innovative techniques for bank stabilization and aquatic habitat enhancement where appropriate.

b) If project includes project level monitoring, describe ability of proposed monitoring strategy to contribute to the state of TMDL knowledge. Also describe if purpose of the capital project is to conduct data collection and/or analysis related to Lake Tahoe clarity.

Channel erosion and floodplain deposition sampling is proposed for this project, which would contribute to the state of knowledge regarding pollutant load reductions associated with creating stable channel forms and increases in overbank flooding.

c) Describe treatment approach for reducing pollutants, and/or measures to address connectivity between pollutant sources and Lake Tahoe or its tributaries. Identify target pollutants, and, to the degree feasible, provide quantitative estimates of project effectiveness at reducing pollutant loads (and/or a commitment to provide post-project estimates).

The proposed restoration will involve constructing a more stable channel form than currently exist, resulting in less pollutant contributions from stream channel erosion. The new channel will also result in increased frequency and duration of overbank flooding which will result in greater pollutant load reductions from additional sediment and nutrients being settled out on the floodplain and taken up by floodplain vegetation.

d) If appropriate, describe whether, and how, the project can be combined or coordinated with other TMDL implementation projects.

This project is closely connected with several other channel restoration projects along the Upper Truckee River. Coordination between project proponents for these projects has been ongoing for several years, and will continue until each project has been completed .

4. Control of aquatic invasive species and prevention and/or detection of new aquatic invasive species.

Provide an overall Project Summary (maximum 200 words): (describe ONLY this Round 10 project):

The Upper Truckee River (Sunset Reach) Restoration Project involves restoration of approximately 12,000 feet of the Upper Truckee River, including both Reaches 5 and 6 (Figure 1). The restoration approach is the same for Reaches 5 and 6, however implementation may be phased or could be separated entirely. The restoration approach includes new channel construction throughout most of this project area. The new channel will be more resistant to erosion and provide improved aquatic habitat features. The reduced size of the new channel will reconnect the channel to the adjacent floodplain, resulting in more frequent overbank flooding (every 1-2 years instead of every 5 years) and flooding for a longer duration.

Only funding for Reach 5 (approximately 7,000 linear feet) is requested in this SNPLMA proposal. The Reach 5 restoration will be implemented by the LTBMU in close collaboration with the California Tahoe Conservancy (CTC), who currently manages about one third of the land in this reach. The CTC currently intends to commit up to an additional $4.5 million through separate funding mechanisms toward the implementation of the Sunset Reach Project, which would include Reach 6 (approximately 5,000 linear feet).

Please provide clear and concise written responses to each of the items below.
Please state "not applicable" if you believe the item or question is not applicable to your project.

Is this project proposed as a multi-round project (previous or future)? (If yes, for previous or future projects describe in the Detailed Project Description below number of years or phases and which year the requested funding will cover).

Yes, Round 6 and 8 funds have already been acquired and are being utilized to complete planning and design. SNPLMA funding may be sought in future rounds to complete the Reach 6 component of the Sunset Reach Project.

Detailed Project Description (focuses on what Round 10 is funding; list the number of years the requested funding will cover; briefly describe how this project links into previous and future projects).

The funding requested in this Round is for the implementation of Reach 5 channel restoration work, starting in the summer of 2010. Reaches 5 and 6 are distinct from one another because of different physical channel and floodplain characteristics. Reach 5 has a broad meadow floodplain, and in general is characterized by less sediment storage in point bars and mid-channel bars. Reach 6 has a more diverse floodplain, with vegetation ranging from willows and meadow grasses to upland shrubs, and exhibits more sediment storage characterized by point bar and mid-channel bar development. The phasing of Reach 5 and 6 implementaton is possible because a short segment of the existing channel (approximately 250 ft) between the reaches will be treated with in-channel stabilization measures and habitat features instead of constructing a new channel in this area. Therefore, there is a 250 ft segment of the channel that will stay in its existing location and act as a transition between Reaches 5 and 6 for implementation phasing.

The implementation of Reach 5 restoration will take approximately three years to complete, and we are also requesting funds for two years of implementation and effectiveness monitoring, and implementation of any needed maintenance. In the first year, the majority of the new channel construction will be implemented. The first year of channel construction will be limited to the channel segments between the upstream and downstream transition zones and the utility line crossings. In addition, excavated material will be stockpiled for filling the existing channel in year three. The upstream and downstream transition zones and the locations where the new channel will cross the existing South Tahoe Public Utility District (STPUD) lines (i.e. water line and backup effluent export line) will require engineered structures to protect the new channel from upstream and downstream influences and to protect the utility lines from future channel adjustments. These engineered structures will be constructed in the 2nd year of implementation. In addition, the channel segments constructed in year one and their vegetated banks will be irrigated in the second year to ensure adequate stability before letting water enter the new channel. Work in year three will consist of completing the transitions from upstream and downstream reaches, diverting the Upper Truckee River flow into the newly constructed channel, and filling and revegetating the existing channel alignment. In years four and five, short-term implementation and project effectiveness monitoring will occur, including identification of maintenance needs.

Two previous rounds of funding have been acquired from Round 6 and 8 of SNPLMA. These funds are

being utilized to complete the planning and pre-project monitoring for this project. Round 6 funding ($350,000, #F048 Upper Truckee River Restoration) is being used for pre-project monitoring, surveys for NEPA analysis, completion of the Forest Service pre-NEPA (National Forest Management Act (NFMA)) analysis and scoping, and development of conceptual design plans for the proposed action. Round 8 funding ($700,000, #F122 Upper Truckee River Restoration (Forest Service Lands) is being used to complete the NEPA analysis and documentation for the proposed action, continuation of pre-project monitoring, and for the final design contract and permitting. The final NEPA/CEQA document is expected to be completed in spring of 2009 and will cover both Reach 5 and 6. Final design and permitting will be completed by spring of 2010. The CTC has contributed approximately $2,480,000 towards these activities.

At this time, future funding is not anticipated to be necessary for implementation of the Reach 5 restoration actions beyond this request.

Describe the specific goals and objectives of the project and describe how fulfilling those objectives will contribute to the achievement of one more environmental thresholds (air quality, water quality, soil conservation, vegetation, fisheries, wildlife, scenic, noise, recreation).

The goals of this project are consistent with the Aquatic Management Strategy (AMS) goals presented in the 2004 Sierra Nevada Forest Plan Amendment. Specifically the goals of the project are to restore ecosystem function of this reach of the Upper Truckee River in terms of water quality, aquatic and riparian habitat, and natural geomorphic processes that sustain stable channel morphology.

The objective of the project is to implement actions to replace the existing 12,000 ft reach of oversized channel that is currently disconnected from the adjacent floodplain (in all but extreme flood events), with a newly constructed channel that exhibits stable channel morphology and is reconnected to the floodplain.

Fulfilling the goals and objectives mentioned above will contribute to achieving the following environmental thresholds:

Water Quality (WQ)
Fine sediment storage on the floodplain and nutrient uptake capabilities will be enhanced, resulting in a reduction of sediment and nutrient loading to Lake Tahoe. In addition, streambanks will be more stable after the restoration, thereby decreasing sediment loading from this source.

Soil Conservation (SC)
This project will restore soil building and maintenance characteristics along the Upper Truckee River by increasing sediment storage in the floodplain.

Fisheries (F)
Fisheries habitat (pools, cover, water temperature, and spawning gravels) will be enhanced for local fish populations and native amphibians.

Wildlife (W)
Riparian and meadow habitats for wildlife species, such as willow flycatcher, will be enhanced.

Vegetation (V)
Riparian and meadow vegetation types will shift toward those found in a wetter meadow community.

Describe the anticipated project accomplishments (i.e. products or identifiable environmental benefits being produced or implemented under this project):

The project accomplishments will include construction of 7,000 ft of restored channel and 80 acres of floodplain enhancement. See benefits as described above under environmental thresholds.

Describe the "readiness" of this project to move forward (urgency, capacity, capability, environmental documentation, interagency agreements, etc.):

The Proposed Action document for this project has recently been completed and is currently out for public scoping and comments. The CTC has an existing contract with a consulting team to complete the NEPA/CEQA planning work for this project for both Reaches 5 and 6. The existing conditions analysis was completed for the Sunset Reach Project area (CTC and USFS property) in 2004. ENTRIX is currently working on environmental analysis and preliminary design for the channel restoration project. The 50% design plans are expected to be completed by December 2008, and the environmental document (combined CEQA and NEPA) is expected to be complete in spring 2009. In total, the FS has contributed approximately $115,000 toward the completion of the 50% designs and the environmental analysis and documentation (from R6 and R8 SNPLMA funding). Round 10 funding would allow for the project to continue moving forward and begin implementation in late summer 2010.

The proposed implementation start date of 2010 for the Sunset Reach Project (Reach 5 component) is in line with the expected implementation schedules for other projects both up and downstream of the Sunset Reach. Delaying implementation of this project could cause delays to other project construction schedules, as permitting agencies have expressed their desire to limit the number of major stream restoration projects underway in any given year in the Upper Truckee River, to reduce the level of risk during unexpected large storm events.

Describe partnerships for this project. (if applicable, project should identify committed/secured partner funding and/or other partner contributions (describe) and how it is integrated into the project):

Reaches 5 and 6 have been treated as one project reach (i.e. the Sunset Reach). The environmental analysis and documentation has also been combined for Reaches 5 and 6 in a CEQA/NEPA combined document. As demonstrated in Figure 1, the Sunset Reach Project area includes land managed by the California Tahoe Conservancy and the Forest Service, LTBMU. The Forest Service and CTC are sharing the financial burden for the Sunset Reach Project. The FS became a funding partner in the project after the CTC had already established a contract with a consultant firm to complete the environmental documentation for the entire project reach (including National Forest System lands). Prior to the FS becoming a funding partner, the CTC paid for a significant amount of work completed for the NFS land. This work included the existing conditions document and several preliminary studies for the environmental analysis such as a fish and amphibian study, and a botanical survey study. The CTC's current commitment to this project is approximately $2,480,000. This funding request is for both the FS and the CTC portion of Reach 5. The CTC intends to commit up to an additional $4,500,000 for the completion of the Sunset Reach Project, including Reach 6 implementation, which is currently projected at between $6M and $9M.

The FS and CTC will continue to share funding responsibilities for the Sunset Reach Project. This includes completion of the environmental analysis and documentation and developing the restoration design plans to 100%.

Other collaborators include the City of South Lake Tahoe who manages the reach just downstream of the Forest Service property boundary, the CA Department of Parks and Recreation who manage the reach just upstream of the CTC property boundary, and the South Lake Tahoe Public Utility District who have utility lines that pass through the Sunset Reach meadow.

Describe the estimated environmental risks from unintended consequences of the proposed project:

There is a potential for sediment delivery to downstream reaches and to Lake Tahoe from the proposed restoration project if the following circumstances arise: 1) a large storm event is encountered during project implementation and temporary construction BMPs are rendered ineffective, 2) dewatering or diversion structures fail or are compromised, or 3) the season immediately following occupation of the new channel segments exhibits larger than average precipitation and minor bank failures occur because channel seasoning was insufficient to stabilize the banks for the sustained higher flows. These risks will be minimized by using accepted BMPs and dewatering and diversion methods, and by allowing 1-2 years for seasoning of the new channel.

Describe the project monitoring that will be implemented as part of this project including:
The monitoring to be implemented in this proposal addresses short term implementation and effectiveness monitoring. Long term project effectiveness monitoring (>3 yrs post project) for all LTBMU projects and programs will be addressed through either 1) The Forest Above Project level monitoring program funded through the USFS SNPLMA NEPA Resources Surveys project, 2) LTBMU base appropriated funds for Forest Plan Monitoring), or 3)TSC coordinated research projects.

1) **The questions the monitoring program is designed to answer**

- Are State of California sediment and turbidity standards being achieved during the first year after construction for channel restoration projects?
- To what degree have restoration efforts been successful in restoring floodplain connectivity, stabilizing stream banks, and reducing fine sediment loads?

2) **Describe the methods and strategies (i.e. monitoring, research, or both) that will be used to verify whether the project goals and objectives have been met? (Note, a detailed monitoring plan and/or research plan is not required, however, enough detail must be provided to allow someone that is unfamiliar with the project to understand and evaluate the proposed methods and strategies)**

The UTRWAG group described above has developed a Monitoring Guidelines document to be used for monitoring all of the restoration reaches along the Upper Truckee River, in order to provide consistency across project boundaries. This document provides protocols, frequency, and priorities for monitoring both pre project and post project conditions in all project reaches. Some of the parameters anticipated to be collected through the first two years after project implementation, which would be funded out of this proposal, are:

- channel and floodplain sediment storage
- groundwater elevations
- vegetative composition and cover
- channel morphology
- macroinvertebrates
- suspended sediment and turbidity in streamflows
- temporary BMP effectiveness evaluations

Many of these metrics have and will be measured prior to project implementation to enable pre and post project comparisons. The funding requested in this proposal is intended to cover 2 years of post project monitoring to determine whether short term goals and objectives have been met, and may trigger maintenance actions if they are not met.

3) **Describe whether the monitoring or research associated with this project fits into or is part of a larger monitoring or research program**

This project is one of four large scale restoration projects planned for the middle and lower reaches of the Upper Truckee River over the next 5-10 years. Because of the close proximity of each planned restoration project, and the close spacing of those projects through time, the UTRWAG has developed a Monitoring Guidelines Document to be used for all restoration reaches along the Upper Truckee River as described above.

This project monitoring is also part of the Project Level LTBMU 5-year Monitoring Plan, which outlines the strategy for monitoring projects within the various program areas within the LTBMU. The LTBMU project-level monitoring strategy is to determine the success of LTBMU projects in meeting design features, project specifications, and design measures (implementation monitoring), and when possible, whether projects were effective in achieving short term environmental goals.

The USFS will utilize similar monitoring approaches (with appropriate site specific modifications) for all its other large scale stream restoration projects, including Cookhouse Meadow, Blackwood Creek, Angora Creek and Cold Creek/High Meadows.

4) **Describe how information from the monitoring and/or research will be used to improve the continued performance of the proposed project or future similar projects**

Project-level monitoring results will be used in the short term to determine whether maintenance or corrective actions are needed to meet design goals and specifications. Project-level monitoring results will be periodically assessed in a comprehensive evaluation of results within the LTBMU Stream Channel Restoration program, to evaluate overall success of design approach(s) with this program.

Because this will be the second of at least four restoration projects along the Upper Truckee River proposing to use similar restoration approaches, there is an opportunity to incorporate lessons learned on this project into future project designs. This will be accomplished primarily through continued coordination with the UTRWAG group.

Describe how the project results will be communicated and made available to the public.

This proposal will remain posted on LTBMU's "SNPLMA website" and interested parties will use the project contact information supplied herein to communicate directly with the LTBMU contact. Significant interim accomplishments may be reported out as they occur, by posting to LTBMU's website. Discussion of project particulars may periodically occur during meetings of TSACC (Tahoe Science Agency Coordinating Committee), as well.

Monitoring activities and results will be summarized in the LTBMU Forest Monitoring Program Annual Report. Project and program specific monitoring reports will be produced within one to five years after project implementation, depending on the variables being monitored and the questions to be answered. In addition, the LTBMU will periodically produce a Comprehensive Five Year Evaluation Report as part of the Forest Plan Monitoring Requirement. All monitoring reports will be posted on the LTBMU external website. The audiences (public, agencies, and research community) will be informed through appropriate email lists, and public and interagency meetings.

If applicable, include an 8 ½ X 11 map depicting the project.

Upper Truckee River Restoration Project Area
Sunset Reach