Appendix B-8

LAKE TAHOE RESTORATION PROJECTS
ESTIMATED NECESSARY EXPENSES & KEY MILESTONE DATES

Project Name: Angora Creek Channel and Meadow Restoration Design Agency: US Forest Service
Prepared by: Richard Vacirca Phone: 530-543-2768 EIP #: TBD (new)
SNPLMA Project No.: TBD (new)

Identify estimated costs of eligible reimbursement expenses:

1. Planning, Environmental Assessment and Research Costs	$ 0	0 %
2. FWS Consultation—Endangered Species Act	$ 0	0 %
3. Direct Labor (Payroll) to Perform the Project	$ 31,000	10 %
4. Project Equipment	$ 0	0 %
5. Travel (contractor meetings, RO presentation)	$ 3,000	1 %
6. Official Vehicle Use (pro rata cost for use of Official Vehicles when required to carry out project)	$ 5,000	2 %
7. **Cost of Contracts, Grants and/or Agreements to Perform the Project** (design contract)	$ 220,000	73 %
8. Other Direct and Contracted Labor (LTBMU Contracting Officer)	$ 5,000	2 %
9. Other Necessary Expenses (10% Indirect Costs + 2% Environmental Education)	$ 36,000	12 %
TOTAL:	$ 300,000	100 %

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Award design contract	March 1, 2009
Complete 50% restoration designs (Task 1 of contract)	December 31, 2009
Complete 100% restoration designs (Task 2 of contract)	March 31, 2010
Final Completion Date:	June 31, 2010

Comments:

APPENDIX K
LAKE TAHOE CAPITAL PROJECT PROPOSAL
ROUND 9

Capital Focus Area (2006 Federal Vision): _Watershed and Habitat Improvement_____

Circle a minimum of one category:

1. Continued emphasis on fuels reduction in coordination with projects funded under the 2006 SNPLMA amendment (the "White Pine" amendment).
2. Continued implementation of projects approved in Rounds 5 through 8 which implement the EIP. Project proposal should clearly describe the phase/product being produced along with the consequence of not completing the project phase proposed for Round 9.
List project(s):_____
(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 category(ies):_stream channel__
4. Control of aquatic invasive species and prevention of new aquatic invasive species.

Project Name: Angora Creek Restoration Design **EIP #:** N/A

Lead Agency: US Forest Service, LTBMU **Contact:** Richard Vacirca

Threshold: WQ, SC, V, F, W, SR, R **Phone:** (530) 543-2768

Threshold Standard: WQ1-6, SC2, V1&4, F2-4, W1, SR3, R1

Email Address: rvacirca@fs.fed.us

Funding Requested in this Round: $300,000 **Total Project Cost: $1,700,000**

Is this a multi-year Project?) YES

Project Summary (maximum 200 words): (applicable ONLY to this Round 9 project):

The LTBMU is currently in the process of identifying a long-term (post-BAER) rehabilitation strategy for the Angora Fire area on Forest Service lands. This strategy will address rehabilitating ecosystem processes, such as stream channel/floodplain function, soil productivity, vegetation and aquatic and terrestrial habitats. Although conceptual projects have been identified these are broad in scope and scale and need refinement (site-specific design). This project (Phase I – Angora Creek Restoration Design) proposes to develop 100% restoration design plans for both the Angora Creek channel (on an approximately 1200 ft reach above Lake Tahoe Boulevard) as well as other meadow and wetland complexes within the Angora Fire area.

Detailed Project Description (focuses on what Round 9 is funding; list the number of years or phases the Round 9 requested funding will cover; if phased, briefly describe how this project links into previously phased projects including what remains for Rounds 10 and beyond).

In June 2007 the Angora Fire burned 3,100 acres and occurred roughly between Angora Ridge Road on the west, state highway 89 on the north, and US highway 50 on the east and south. A combination of high and moderate burn severities occurred in the valley bottoms. Higher fire intensities resulted in the consumption of all or most of the organic material in the soil layers and along stream banks leaving Angora Creek and its associated tributaries at risk to further channel incision. Coupled with past anthropogenic impacts, the Angora Fire has further compounded the need for active watershed management in the area.

Phase I (Round 9) of this project proposes to complete the design process, and bring the conceptual design and proposed action developed through the NEPA analysis (funded in FY 2008) to 100% restoration design for both Angora Creek channel (above Lake Tahoe Boulevard) and other meadow and wetland complexes within the Angora Fire area. In order to accomplish the development of 100% designs a restoration design contract will be initiated. Restoration designs will be accomplished by conducting hydrologic, geomorphic and vegetation analysis and involve key restoration design metrics including: channel condition and departure, sediment transport, pattern geometry and vegetation characteristics. Design is scheduled to be completed by March of 2010.

This is the first round of SNPLMA funding requested for this project. However pre-NEPA analysis and development of a proposed action is currently underway utilizing existing appropriated base funds, and emergency appropriation funding has been requested to complete NEPA in FY 2008. If these emergency funds are not approved, then the implementation of this project would be delayed a year, and the fund requested in Round 9 would be used to complete conceptual designs and the NEPA analysis.

Phase II – Angora Creek Restoration Implementation [construction funds] would be requested in Round 10. It is anticipated that additional contracts (i.e. heavy equipment) will be needed to accomplish the work. As part of Phase II, close coordination with stakeholders, such as Eldorado County and California Tahoe Conservancy (CTC), would occur as those agencies are in the process of planning and implementing future rehabilitation efforts (i.e. road crossing replacement project on Lake Tahoe Boulevard) in the Angora Fire area within the next three years.

Describe the goals and objectives of the project (those applicable ONLY to this Round 9 project):

The goal of the project is to provide site-specific designs, which restore water quality and aquatic and meadow habitats. To accomplish this goal the project has four main objectives:

- Restore channel form (pattern, profile and dimension) and function (floodplain connectivity) in Angora Creek (estimated 1,000 – 1,200 feet)
- Increase in-channel relative roughness and enhance pool quality in Angora Creek (estimated two miles of stream)
- Provide for adequate riparian vegetation to allow for channel and floodplain stability (estimated 50 acres)
- Maintain the integrity of meadow and wetland landscapes (estimated 60 acres).

It is expected that a comprehensive design will employ watershed restoration methodologies, which could potentially include channel reconstruction, placement of in-channel large wood structures, riparian shrub planting along channel and wetland margins and thinning encroaching conifers in meadow systems.

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

Phase I (Round 9) project accomplishments include:

- Award a design contract by March 2009
- Complete 50% designs by December 2009
- Complete 100% designs by March 2010

Describe the "readiness" of this project to move forward:

The LTBMU is currently in the process of conducting the pre-NEPA Forest Plan consistency analysis (NFMA) for all long-term rehabilitation projects in the Angora Fire area. This includes consideration of vegetation and fuels treatments as well as channel restoration. Implementation of the NEPA planning process will immediately follow. It is expected that this will be funded through FY2008 appropriated emergency funding, although approval of this funding has not yet occurred. If FY2008 funding is approved, it is anticipated that NEPA will be completed by Fall of 2009. As stated previously, if the FY2008 appropriations request is not approved, this project will be delayed a year, as NEPA would not be initiated until this Round 9 funding is received.

Furthermore, Phases I and II of this project are part of a larger interagency watershed conservation effort. Over the last decade, watershed restoration activities have been occurring in Angora Creek. In 2004, California State Parks completed 2 phases of stream restoration activities on Angora Creek from Hwy 50 through Washoe Meadows State Park. In 2006 as part of cooperative erosion control grant effort between the LTBMU and Eldorado County stream restoration activities were completed in Angora Creek between View Circle road and Lake Tahoe Boulevard. Finally, interagency efforts are underway to complete in-channel restoration designs in the Upper Truckee River (golf course reach to Sunset reach) with the objective of decreasing fine sediment inputs and restoring floodplain connectivity.

Describe partnerships for this project. (if applicable, project should identify partner funding [committed/secured] and how it is integrated into the project)

The LTBMU will work closely with El Dorado County, City of South Lake Tahoe, South Tahoe Public Utilities District, California Department of Fish and Game, California Tahoe Conservancy, Lahontan Regional Water Quality Control Board and the Tahoe Regional Planning Agency. These partners will be represented on the Technical Advisory Committee, will assist in development of project designs and will review all planning and design documentation.

El Dorado County currently has funding secured to replace an existing undersized culvert with a bridge at Lake Tahoe Boulevard, which is the downstream boundary of the desired USFS channel restoration reach on Angora Creek.

Describe the project monitoring that will be implemented as part of this project including:

1) The questions the monitoring program is designed to answer

N/A

2) The monitoring approach.

N/A

3) Whether this project monitoring fits into a larger monitoring or research program (including how information from the monitoring and research will be used to improve the continued performance of the proposed project or improve future similar projects)

Pre-project monitoring efforts have occurred, which will be utilized to inform managers during the design and implementation phases of the project. The acquisition of these data was funded through FY2007 USFS base funds and includes aerial photos, a channel geomorphic survey (cross sections, longitudinal profile), stream temperature, and macro-invertebrates. Additional baseline monitoring is scheduled for 2008, again utilizing USFS appropriated base funding. In addition, a multi-agency effort has initiated a stream channel water quality monitoring program to monitor the impacts of the fire in Angora Creek stream flows, and into the receiving Upper Truckee River. The complete Draft Angora Fire Monitoring Plan is available at the LTBMU. No monitoring will be funded out of this Round 9 request, as no construction activities will take place with these funds (they are only for project design). A request for funding for post-project effectiveness monitoring will be associated with the construction funds requested in Round 10.

Describe these two items which will be considered along with the above project monitoring information by the Tahoe Science Consortium related to research and monitoring resource areas and the effectiveness of environmental restoration activities:

1) Describe the specific goals and objectives of the project and describe how fulfilling those objectives will contribute to the achievement of one or more environmental thresholds.

If funded for implementation in Round 10, the completion of designs for the Angora Creek project will eventually contribute to achieving the following environmental thresholds.

<u>Water Quality (W)</u>

This project will restore fine sediment characteristics as well as nutrient storage and uptake capabilities, to a level expected for a site in this geomorphic and hydrologic regime. This project will also restore other water quality elements, such as stream temperature by increasing water depth and riparian vegetation coverage (stream shade).

Soil Conservation (SC)

This project will restore soil building and maintenance characteristics along upper Angora Creek by a) designing and implementing natural channel designs, which promote stable/well vegetated streambanks that are more resistant to erosion, and b) creating resistance to channel headcutting and incision by improving energy dissipation through increasing both in-channel roughness and pool habitat.

Fisheries (F)

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

Wildlife (W)

This project will improve the riparian and meadow system habitats for wildlife species, such as willow flycatcher whose foraging and nesting life histories depend on them.

Vegetation (V)

This project will restore riparian and meadow vegetation types and coincide with other upland vegetative rehabilitation efforts that will be prescribed by the LTBMU in the Angora Fire.

Scenic Resources (SR)

Evidence of wildfire has a negative effect on visual quality. Rapid response of riparian vegetation reduces the duration of those visual impacts.

Recreation (R)

Intact and functioning SEZ's will add overall recreational appeal to the area (i.e. by enhancing small stream fishing experiences) and may decrease flood damage to adjacent trails.

2) Describe the risk to the environment from failure of the proposed project (i.e. if the project fails what is the environmental consequence).

Restoration technical specialists on the LTBMU strongly believe that, by initiating natural channel design methods and utilizing knowledge gained from local monitoring and research results, the risk of failure is minimal to none. First, when formulating channel designs careful consideration is given to historic morphological characteristics, how those characteristics exhibit themselves in current conditions and identifying the central tendencies of how Angora Creek is responding to land use impacts coupled with effects from the Angora Fire. Second, vegetation treatments in and around meadow systems will be implemented by utilizing current state of knowledge gained from implementing the Meadow Restoration and Big Meadow Fire Regime SNPLMA projects (i.e. thinning specific tree species and size classes and burning in targeted seasonal windows).

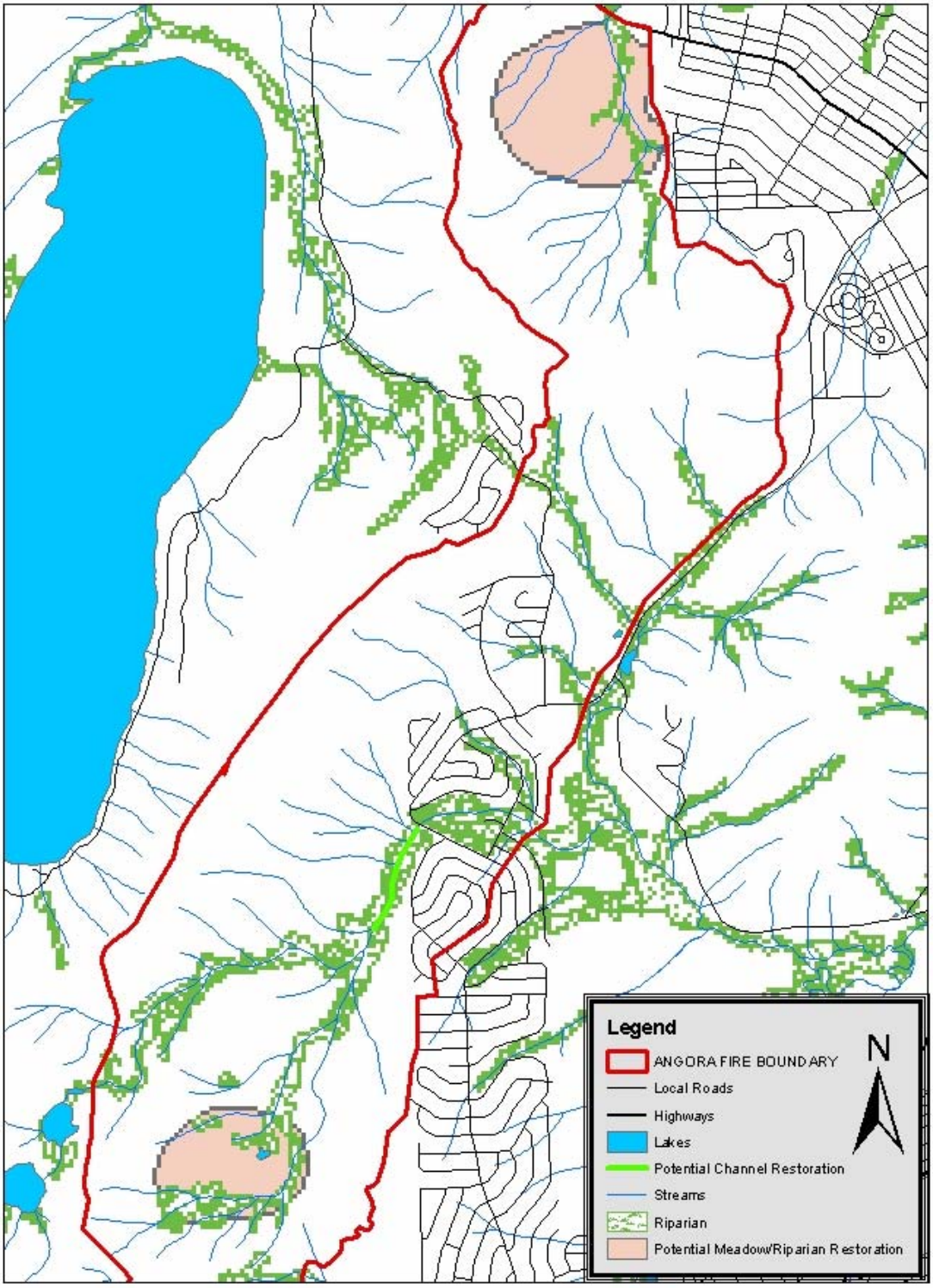
However, in the event failure occurs, the potential impacts to the environment may include:

- Channel and floodplain erosion
- Floodplain dessication followed by advancement of encroaching conifers
- Increased releases of fine sediment into the creek and down to Lake Tahoe
- Long-term invasion of noxious weeds from prescribed fire in and around meadows.

Some of these impacts are already evident and will continue to worsen if the project is not undertaken.

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

Results/accomplishments will be summarized in Annual Forest Monitoring Program Report, as well as project-specific monitoring/accomplishment reports. The information created from this project will be disseminated to three audiences: 1) the general public, 2) other resource agencies, and 3) the broader scientific community. The audiences will be informed respectively through the USFS website, public/interagency meetings, and peer-reviewed publications.

Include an 8 ½ X 11 map depicting the project.

Potential Post-Fire Restoration Projects