Appendix B-8

LAKE TAHOE RESTORATION PROJECTS
ESTIMATED DIRECT COSTS & KEY MILESTONE DATES

Project Name: Meadow Restoration Agency: U.S. Forest Service

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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.)	$ 40,000	43	%
2. **Direct Labor (Payroll) to Perform the Project**	$ 34,600	38	%
3. **Project Equipment** (tools, software, specialized equipment, etc.)	$ 2,000	2	%
4. **Travel** (including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.)	$ 2,000	2	%
5. **Official Vehicle Use** (pro rata cost for use of Official Vehicles when required to carry out project)	$ 5,000	5	%
6. **Cost of Contracts, Grants and/or Agreements to Perform the Project**	$		%
7. **Other Direct Costs** (public awareness and environmental education)	$ 2,000	2	%
8. **Indirect Costs**	$ 8,000	8	%
TOTAL:	$ 93,600	100	%

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Complete NEPA	4/15/2007
Complete restoration plan	6/15/2007
Implement restoration	10/01/2007
Final Completion Date:	11/01/2015

APPENDIX I

LAKE TAHOE CAPITAL PROJECT PROPOSAL

Project Name: Meadow Restoration	**Capital Focus Area:** Watershed Restoration and Habitat Improvement (WR/HI-1, WR/HI-4, WR/HI-7WR/HI-11, WR/HI-12, WR/HI-16, WR/HI-15)	**EIP #:** 4
Lead Agency: U.S. Forest Service	**Contact:**	Sarah Muskopf
Threshold: SC, F, W, SR, WQ, V	**Phone Number:**	(530)543-2825
Threshold Standard: SC2, F2, W1, W2, SR2, SR3, WQ1-6, V1, V4	**Email Address:**	smuskopf@fs.fed.us
Is this a multi-year Project? Yes **(If "Yes", describe in the Detailed Project Description below number of years or phases and which year the requested funding will cover)**	**Total Project Cost:**	$1,500,000
	Funding Request in this Round:	$93,600

Project Summary (maximum 200 words):

The meadows of the Lake Tahoe basin are a spatially limited resource, similar to riparian areas. Fire suppression and extensive history of human use and disturbance to these systems has subsequently affected the current vegetative conditions (annual dominated system), species diversity and abundance of meadows in the Lake Tahoe basin. The impacts to meadows, also adds to watershed degradation within the Lake Tahoe basin due to poor infiltration and sedimentation. In order to restore and improve terrestrial and aquatic habitats of the meadows, an assessment of existing conditions and trends was initiated in 2004.

Detailed Project Description:

The Lake Tahoe Basin Management Unit (LTBMU) of the U.S. Forest Service (USFS) has begun the assessment and restoration of the meadow ecosystems of the Lake Tahoe basin. After 150 years of livestock grazing and almost 100 years of fire suppression, changes in the vegetative communities of the meadows and the processes to maintain the potential natural vegetation have taken place. The vegetative diverse, fire-adapted meadow ecosystems have been transformed into areas dominated by annual and pioneer vegetative species. These highly stable and ecologically valuable ecosystems have become monocultures with extensive areas of non-native species. The functions and processes of the historic ecosystem have been significantly altered by the change in potential natural vegetation.

Vegetative trend transects were first established in the region beginning in1996. These transects were installed to measure successional stage of meadows including their vegetative ecological status and wetland rating. This information informs managers about the hydrologic condition of the meadow (e.g. are the meadows becoming more xeric due to land-use) and if the vegetative community is changing over time. The Lake Tahoe Basin

Management staff installed 50 trend transects in 2004. Existing conditions were determined from this initial assessment.

The restoration of the meadows will focus on the reestablishment of natural processes and potential natural vegetation. A process-based approach to meadow restoration will rely upon the possible reintroduction of fire into the system. The process-based approach will closely replicate the natural fire regime.

This is a multi-year project, which includes the following year end accomplishments:

- FY96-98: Established initial trend transects in basin meadows
- FY04: Established additional 50 transects in meadows throughout the Tahoe basin. Determine ecological status of all 50 meadows.
- FY05: Spatially recorded all 50 transect using GPS.
- FY07: Randomly resurvey selected meadows, develop restoration plan to restore fire adapted meadow ecosystems, prioritize meadow for potential treatment, complete NEPA, and implement fire-adapted meadow restoration.
- FY08: Continue implementation of meadow restoration through introduction of fire.
- FY09: Resurvey trend transects and continue fire-adapted meadow restoration.
- FY10-15: Continue fire-adapted meadow restoration and monitoring.

Describe the goals and objectives of the project:

Current meadow conditions will be determined, and desired meadow conditions will be established. Management practices will be developed, that will attain the desired conditions. Meadows will attain: 1) plant communities that function within the natural range of variability, with a progression towards potential natural vegetation, 2) processes comparable to historic conditions, 3) a reduced population of non-native plant species, 4) a dynamically stable plant community, which provides a wide range of terrestrial habitats.

Describe the anticipated project accomplishments:

The ecological status of meadow vegetation will become late seral, with a high similarity to the potential natural community. A diversity of age classes of herbaceous and hardwood shrubs will be present and regeneration will be occurring.

Meadows will become hydrologically functional. Vegetative rooting will occur throughout the available soil profile. Meadows with perennial and intermittent streams will 1) dissipate stream energy from high flows, thereby reducing erosion and improving water quality, 2) meadows will filter sediment and capture bedload, with subsequent floodplain development, 3) meadow conditions will enhance floodwater retention and groundwater recharge, and 4) root masses will stabilize streambanks against cutting action.

Describe the "readiness" of this project to move forward (Environmental documentation, etc.):

Trend transects have been established on the majority of the meadows within the Lake Tahoe basin. The trend transects will help in the development of desired conditions for plant communities within the meadows, and the development of management prescriptions for the attainment of potential natural vegetation. The analysis of the trend transects was completed in '04 and current the ecolological conditions were established. Analysis and scoping will be completed under the National Forest Management Act, and then the process for environmental documentation according to the National Environmental Policy Act will be initiated. After completion of the environmental analysis and environmental documentation, a schedule for meadow treatment will be developed.

Describe partnerships for this project. (Include documentation):

Since this project focuses on the restoration of meadows, which are spatially limited habitats within the Lake Tahoe basin, the Tahoe Regional Planning Agency (TRPA) and Lahontan Regional Water Quality Control Board (LRWQCB) are partners in the development of restoration plans for the meadows.

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

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

- What is the current ecological condition of meadows in the Lake Tahoe basin?
- How effective are efforts in the restoration of native plant communities in meadows?

(2) The monitoring approach

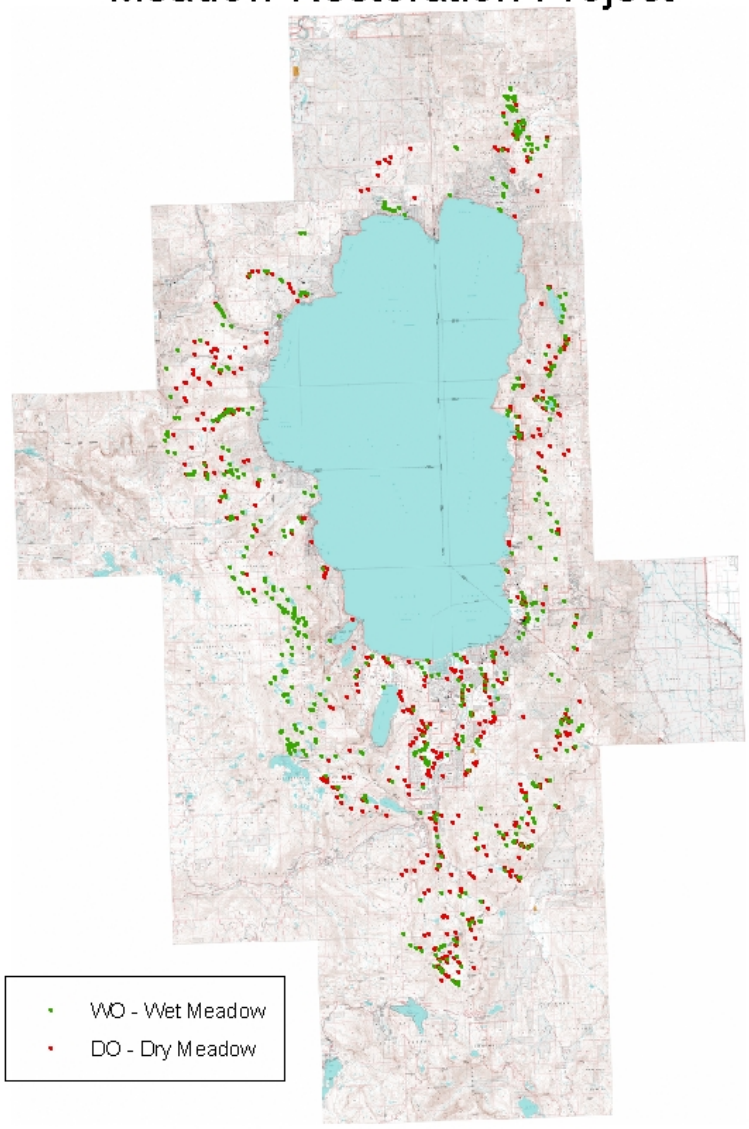
The restoration prescription that will be proposed for this project will be process based, hence adaptive management will be a fundamental component of its success. The restoration of the dynamic processes to which the original meadow systems were adapted will require monitoring and adaptive management that will track and assess spatial and temporal change. A monitoring and adaptive management plan will be developed that will describe how project function will be evaluated and how adaptive management will be accomplished over the life of the project. The monitoring and adaptive management will focus on and include: 1) potential natural vegetation, 2) species composition, 3) natural process development, and 4) terrestrial and aquatic habitat abundance and diversity.

(3) Whether this project monitoring fits in to a larger monitoring or research program?

This project is included in the Adaptive Management 5-Year Monitoring Plan.

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

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 publication.

Additionally, the results and accomplishments will be summarized in the Annual Forest Monitoring Program Report, as well as project specific monitoring reports. Project specific monitoring reports will be 1 to 5 years post project implementation, depending on variables being monitored and questions to be answered.

Meadow Restoration Project