

Appendix B-8

**LAKE TAHOE RESTORATION PROJECTS
ESTIMATED NECESSARY EXPENSES & KEY MILESTONE DATES**

Project Name: Angora Fire: Meadow Restoration Project Agency: U.S. Forest Service
 Prepared by: Richard Vacirca Phone: 530-543-2768 EIP #: 985.01
 SNPLMA Project #: To be assigned

Identify estimated costs of eligible reimbursement expenses:

1. Planning, Environmental Assessment and

Research Costs (specialist surveys, reports, monitoring, data collection, analysis, NEPA, etc.) \$ 0 0 %

2. FWS Consultation—Endangered Species Act \$ 0 0 %

3. Direct Labor (Payroll) to Perform the Project \$ 33,000 33 %

4. Project Equipment (tools, software, specialized equipment, etc.) \$ 5,000 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.) \$ 2,000 2 %

6. Official Vehicle Use (pro rata cost for use of Official Vehicles when required to carry out project) \$ 5,000 5 %

7. Cost of Contracts, Grants and/or Agreements to Perform the Project \$ 38,000 38 %

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) \$ 5,000 5 %

9. Other Necessary Expenses (See Appendix B-11) \$ 12,000 12 %

TOTAL: \$ 100,000 100 %

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Contract channel fill delivery	August 31, 2010
Complete channel fill & grade control	October 31, 2010
Complete conifer thinning in Gardner Mountain Meadow	November 30, 2010
Complete conifer by-product treatment (burning, chipping, or other)	November 30, 2012
Final Report	January 31, 2013
Final Project Completion Date (including project close-out)	April 30, 2013

COMMENTS:

None

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

Project Name: Angora Long-term Fire Restoration: Meadow Restoration Project

Federal Agency Sponsor: U.S. Forest Service

Contact: Richard Vacirca

Threshold: SC, F, W, SR, WQ, V

Phone Number: 530.543.2768

Threshold Standard:

F2 Fisheries
SC2 Soil conditions
SR2, SR3 Scenic & Recreation
V1, V4 Vegetation
W1, W2 Wildlife
WQ1-6 Water Quality

Email Address: rvacirca@fs.fed.us

Funding Requested in this Round: \$100,000

Total Project Cost: \$2,900,000

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**
 - If so, is the federal land involved important to successful implementation of the project? **Yes**
The project involves conservation of sensitive and important ecological units (meadow habitat and forest soils).
2. Does the EIP identify the federal funding for the EIP project (project #)? **Yes EIP No. 985.01**
3. Does the project involve the conservation of a federal or regional threatened, rare, endangered or special interest species? **Yes**
The project restores historic meadow and riparian habitats for Forest sensitive species such as willow flycatcher.
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 is for direct implementation of watershed and habitat improvement.

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.
Round 9 - Angora Creek Channel and Meadow Restoration Design; \$300,000

Round 10 - Angora Long-term Fire Restoration: Meadow Restoration Project; \$100,000
Round 11 – Angora Long-term Fire Restoration: Stream Restoration; \$2,500,000

- ⇒ 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 (*see attached TMDL references – page 6).

Source Category: urban & groundwater; stream channel

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

The project objective is to utilize innovative approaches to restoring the Gardner Mountain Meadow by reducing erosion from a non-natural channel source and competition from conifer encroachment. This objective is achieved by restoring historic meadow surfaces and reclaiming riparian vegetation.

- 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.

Monitoring approaches post-implementation will involve development of an adaptive management monitoring plan that will track project effectiveness relative to trends of target physical (i.e. suspended sediment) and biological processes. Project-level monitoring information should assist natural resource managers with identifying other opportunities throughout Lake Tahoe where natural landscape features in urban settings, such as meadows, may be enhanced or restored to achieve water quality standards.

- 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 Gardner Mountain Meadow system captures storm-water runoff from the Gardner Mountain neighborhood and is an important land type that acts as a natural water storage feature and, therefore will contribute to TMDL pollutant reductions. By filling the existing non-natural channel and restoring meadow and riparian vegetation, water will reside throughout the meadow longer and this will sequester fine sediments that originate from adjacent neighborhoods and from any residual sediment produced by the Angora Fire.

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

As stated in “a” above, evaluation of project success may inform resource managers of other opportunities throughout Lake Tahoe where natural landscape features in urban settings, such as meadows, may be enhanced or restored to achieve water quality standards, especially where urban storm water runoff is a factor.

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):

On the afternoon of June 24, 2007, the human-caused Angora Fire began on National Forest System (NFS) land managed by the Lake Tahoe Basin Management Unit (LTBMU). The Angora Fire burned over 3,100 acres and destroyed or damaged more than 250 structures on the South Shore of Lake Tahoe. The LTBMU strategy for post-fire rehabilitation includes three phases. The first and second phases involved fire suppression and rehabilitation Burned Area Emergency Rehabilitation (BAER) respectively. The third phase will provide additional rehabilitation involving a longer-term strategy and includes watershed and vegetation restoration practices. The LTBMU is currently in the NEPA planning process where a number of phase three post-fire restoration activities will be authorized for implementation. One of those projects proposes to conduct 13 acres of meadow restoration practices in Gardner Mountain Meadow (above Highway 89). This Round 10 proposal would provide funding for proposed meadow restoration activities.

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

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 Gardner Mountain Meadow project area is located above Highway 89 within a drainage system that feeds Pope Marsh (see project area map). Natural disturbances, such as fire and floods historically influenced meadow habitat in this area. The drainage system associated with the Gardner Mountain Meadow has undergone tremendous change resulting from site-specific anthropogenic impacts prior to the 2007 Angora Fire. Historic grazing regimes, road and residential development, and wildfire suppression has resulted in meadow drying (through channelization and incision) and loss of meadow size (through conifer encroachment). The Angora Fire burned through two meadows occurring along Angora Creek and the northwest side of Gardner Mountain. Although the fire killed a number of encroaching conifers there still remains a portion of encroachment that will undoubtedly persist, resulting in hazardous fuel loading as well as channel incision and subsequent erosion that needs to be addressed in Gardner Mountain Meadow.

Phase I (Round 9; \$300,000) of this project was funded to develop 100% restoration designs for both Angora Creek channel (above Lake Tahoe Boulevard) and other meadow and wetland complexes within the Angora Fire perimeter, which included Gardner Mountain Meadow. Restoration designs will be accomplished in 2009 and 2010 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. A design contract is expected to be awarded by April of 2009.

Phase II (Round 10; \$100,000) proposes to implement restoration designs in Gardner Mountain Meadow. It is anticipated that designs in this area will include: a) thinning small diameter conifers which have encroached in the meadow complex, b) conducting prescribed burning to decrease residual fuels and c) filling in a historic channel through the meadow that was most likely created by cattle trailing. The project will result in restoration of the meadow and will decrease erosion rates from the non-natural channel and increase both water storage capacity and the vigor of riparian vegetation.

Phase III (Round 11; \$2,500,000) would propose to conduct channel restoration activities in Angora Creek (above Lake Tahoe Blvd). Channel restoration would be in the form of both channel reconstruction and large wood placement. Channel restoration is also tied to a larger interagency watershed conservation effort where four previous channel restoration projects in the Angora Creek watershed have occurred since 2004. Channel reconstruction will restore approximately 1,200 feet of channel and associated floodplain, while large wood placement would occur on approximately 2 miles in Angora Creek.

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 goal of this project is to conserve the integrity of meadow and riparian landscapes by maintaining meadow extent and redistributing surface and ground water. The project objective is to utilize innovative approaches to restoring the Gardner Mountain Meadow by reducing erosion from a non-natural channel source and competition from conifer encroachment. This objective is achieved by restoring historic meadow surfaces and reclaiming riparian vegetation.

Although the project occurs on general forest lands administered by the LTBMU, Gardner Mountain Meadow is directly associated with the Wildland Urban Interface (WUI). This meadow system captures storm-water runoff from the Gardner Mountain residences and is an important land type that acts as a natural water storage feature and, therefore will contribute to TMDL pollutant reductions. By filling the existing non-natural channel and restoring meadow and riparian vegetation water will reside throughout the meadow longer and sequester fine sediments that originate from adjacent neighborhoods and from any residual sediment produced by the Angora Fire. And, because the project is in the WUI, thinning the encroaching conifers should contribute to reduction of hazardous fuels by removing 10-100 hour size classes (1/4 – 3 inch diameters).

Soil Conservation (SC)

The Phase II restoration will restore soil building and maintenance characteristics within the Gardner Mountain Meadow by reducing the erosive potential of existing ditches and gullies.

Fisheries (F)

Habitat (cover, water temperature) will be enhanced for native amphibians by Phase II.

Wildlife (W)

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

Scenic and Recreation (SR)

Creation of intact and functioning SEZ's in Phase II will add overall recreational appeal to the area by improving the aesthetic value of the meadow.

Water Quality (W)

The restoration of the non-natural channel would increase fine sediment retention in the meadow. Additionally, ground water storage would be enhanced within the meadow.

Vegetation (V)

Phase II will restore the meadow vegetation types to a pre-Comstock condition.

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

Phase II (Round 10) project accomplishments include:

- Complete channel fill and grade control (approximately 1000 feet) by October 2010
- Complete conifer thinning in Gardner Mountain Meadow (13 acres) by November 2010

The project will result in restoration of the meadow extent (pre-conifer invasion conditions), decrease erosion rates from the non-natural channel and increase both water storage capacity and the vigor of riparian vegetation. Inhibiting conifer invasion will also act as a buffer to adjacent residences in the event a future wildfire does occur.

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

The LTBMU is currently in the process finalizing the Forest Plan (NFMA) consistency analysis for all long-term restoration projects in the Angora Fire area. Implementation of the NEPA planning process is anticipated to begin in December 2008 and will be conducted by the Forest Service. It is expected that NEPA will be complete by June 2009. Therefore, Round 10 funding would be used to initiate implementation of post-fire restoration projects.

Furthermore, Phases I and III of this project are integrated into 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.

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):

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 invited to provide comment on all planning and design documentation.

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

Restoration technical specialists on the LTBMU strongly believe that by initiating natural channel and other landscape design methods, and utilizing knowledge gained from local monitoring and research results, the risk of environmental impacts (i.e. creating new channel incision) is minimal to none. First, when formulating meadow and channel restoration designs, careful consideration is given to historic morphological characteristics, how those characteristics exhibit themselves in current conditions and identifying the central tendencies of how the non-natural channel is responding to land use impacts (urban storm water runoff) coupled with effects from the Angora Fire. Second, vegetation treatments in and around the Gardner Mountain Meadow system 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 potential effects to the environment may include:

- Further channel and floodplain erosion
- Floodplain desiccation followed by advancement of encroaching conifers
- Long-term invasion of noxious weeds from prescribed fire in and around Gardner Mountain Meadow.

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

1) The questions the monitoring program is designed to answer

To what degree are best management practices implemented and effective in protecting soil and water resources?

Are state sediment and turbidity standards being achieved post construction for channel restoration projects?

To what degree have restoration efforts been successful in restoring floodplain connectivity and channel/riparian habitat, improving water quality, stabilizing stream banks and sediment transport regimes?

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 following monitoring parameters will be considered as part of the NEPA and/or permitting process:

- Determine the degree soil and water quality protection BMPs are implemented as designed and are effective in protecting WQ by initiating BMP effectiveness evaluations.
- Determine effectiveness of channel/meadow restoration in improving floodplain connectivity, sediment transport regimes, riparian vegetation community and habitat, and channel stability by installing photo points and/or vegetation tend transects.

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 monitoring will be integrated into the LTBMU 5-year Adaptive Management Monitoring Plan, which outlines efforts to monitor aquatic, riparian and meadow restoration. 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.

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 in the LTBMU 5-year

Adaptive Management Monitoring Plan, to evaluate overall success of design approach(s) with the aquatic ecosystem restoration monitoring program.

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

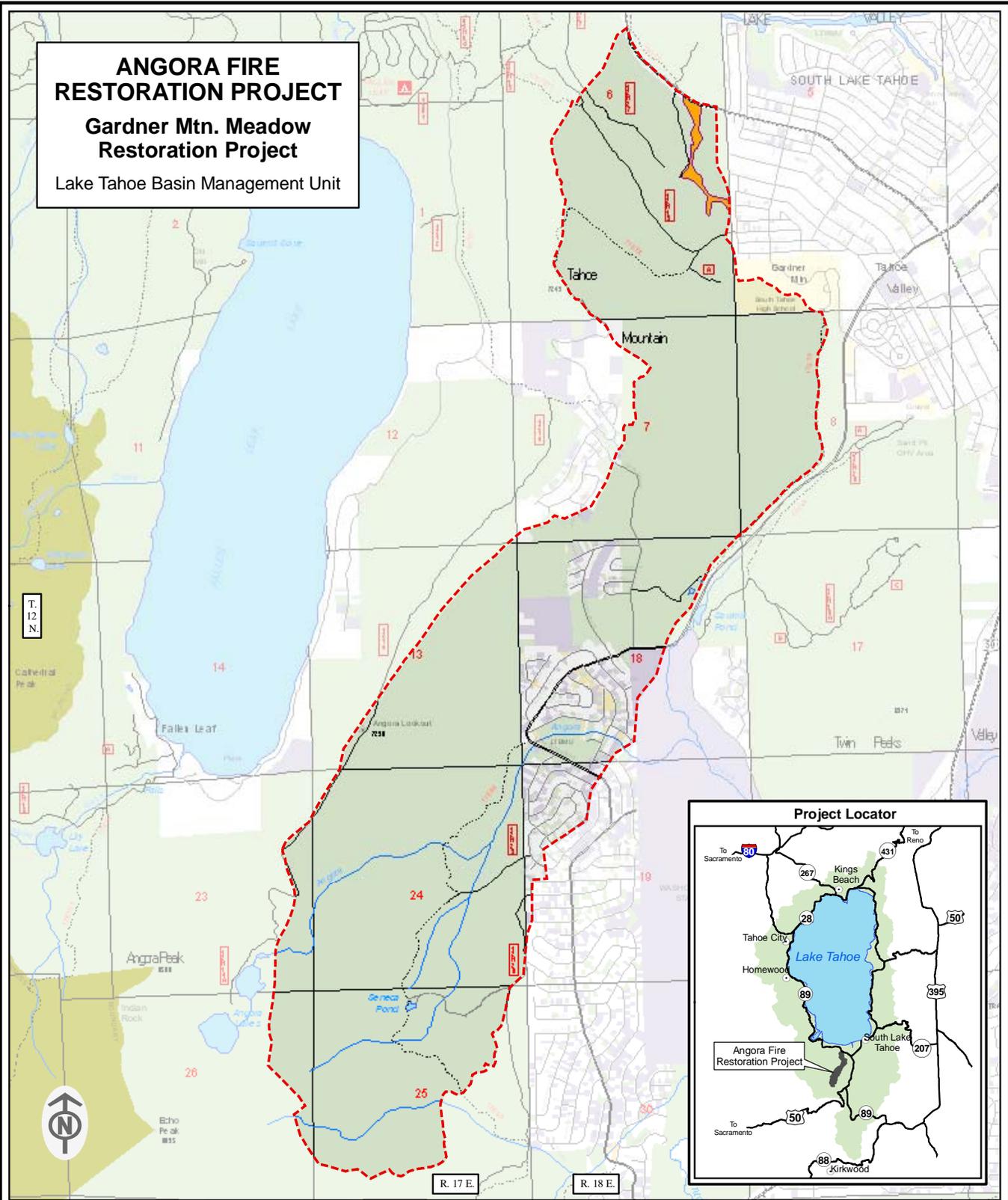
This proposal will remain posted on LTBMU's "SNPLMA website" and interested parties will use the project contact information supplied herein to communicate directly with the LTBMU contact. Significant interim accomplishments may be reported out as they occur, by posting to LTBMU's website. Discussion 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.

ANGORA FIRE RESTORATION PROJECT

Gardner Mtn. Meadow Restoration Project

Lake Tahoe Basin Management Unit



Angora Fire Restoration Project Area		Land Status		Transportation System	
	Angora Fire Restoration Project Area		National Forest - LTBMU		Highway
	Meadow Restoration		National Forest Wilderness		Arterial Local
	Stream		State		USFS System Road
	Waterbody		County		Local Road
			Other Governmental Entity		USFS System Trail
			Private		



For more information, contact: Lake Tahoe Basin Management Unit
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 (530) 543-2600 (530) 541-4036 TTY



Map by LTBMU GIS Staff 11/2008