**TECHNICAL SPECIALIST'S REPORT – BURNED AREA EMERGENCY REHABILITATION**

Resource: Geology
Fire Name: Angora Fire Month/Year: July, 2007

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## I. Resource Condition Assessment

A. Initial Concerns

Concerned that aquatic habitat and water quality, structures and human lives in the burn area will be affected by debris flows or rolling rocks from rockfall.

B. Findings of the on-the-ground survey

1. Summary of findings

For a full description of the geologic hazards and risks within the Angora Fire area please refer to the **Angora Burn Area Emergency Response Geologic Report (Koler, 2007)**.

A transect was measured from the Angora Lookout to Angora Creek on an azimuth with a bearing of 130 degrees to gather soil, rock and ground water data. This information was entered into the Colorado Rockfall Simulation Program to evaluate rockfall initiation and delivery potential. Two additional transects were entered into the program using information collected from the topographic map. The additional transects included one from DP-2 to the nearest structure and from Angora Ridge Road to the high school and adjacent neighborhood. After running the simulation it was determined that the likelihood of rolling rocks causing resources damage is very low. **Therefore the resources at risk from the rockfall geologic hazard were assigned a very low risk rating.**

Slope stability analyses for debris flows were completed using field data as well as data from the NRCS soil inventory. The four potential resources at risk from debris flows include (1) the residential area within the lower valley wall and valley floor of Angora Creek; (2) the water tower and Elk Lookout Circle area; (3) the South Lake Tahoe High School and adjacent residential area; and (4) the aquatic habitat and water quality of Angora Creek. The computer models for the analyses were the Deterministic Level I Stability Analysis and the stochastic Level I Stability Analysis. The BAER team agreed to complete analysis within three slope classes delineated by gradient ranges of 0-30%, 30-60%, and 60% plus gradients. The third slope class of 60% and greater was found to not be within the risk analysis area after the completion of the field work and production of a slope map from the LTBMU GIS shop. Therefore only the first two slope classes pertain to this risk analysis. **Results from the hazard/risk analysis are: for resources at risk #1, #3 and #4 the risk is very low to low; and low to moderate for resources at risk #2.**

## II. Emergency Determination

There are no BAER emergencies from the potential geologic hazards. However, it will be prudent to re-seed the slope above the water tank and Elk Lookout Circle area (resource at risk #2) and to advise the Elk Lookout Circle residents that there is a remote possibility of slope movement in this area within the first year due to unseasonably high rainfall from torrential rainstorms and a sudden melt of the snow pack from rain-on-storm events.

## III. Treatments to mitigate the emergency (briefly describe the following)

A. Treatment Type

None needed.

B. Treatment Objective

N/A

C. Treatment Description

N/A

D. Treatment Cost – Unit Cost

N/A

## IV. Discussion/Summary/Recommendations

Storm patrol is recommended to monitor slope conditions along the top of Angora Ridge where the debris flow initiation sites may occur.