

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Geological Studies on the North Entrance Road, **Yellowstone NP**

Discipline: Natural Resources
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: University of Wyoming
Effective Dates: 7/15/2012 - 12/31/2014
Funding Amount: \$50,000 [FY13: \$25,000; FY12: \$25,000]

Investigators and Agency Representative:

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Project Abstract: The North Entrance Road, listed on the National Register as nationally significant, is currently on the third alignment but still experiencing landslide and rockslide problems that have throughout the past and in the recent past completely closed the road. The previous two alignments, one on the other side of the Gardner River and the other on a higher elevation above the Gardner River have also experienced rock and land slides that have closed the road. Many areas of the landform through which the road traverses are unstable landslide debris that move at a measurable rate. Located in the landslide hills above the road is Slide Lake, which is poorly drained and contributes to the movement of the unstable landslide debris. The road runs through the narrow Gardner River Canyon bounded on one side by the river and the hills created by past landslide debris and on the other side by the 3000 foot Cretaceous and fossil bearing uplift of Mount Everts that is also subject to regular rock fall. There is no good place to put the road but there are some places that may be better suited than the present corridor; thus is the need for the geotechnical study.

In addition to being a significant historic property, the North Entrance road is the major artery for visitors, YNP, and concessions staff to access Mammoth and the north areas of the park. It is a significant supply corridor for visitor services coming from Montana suppliers. Many NPS and concessions staff living north of the park due to the limited employee housing available in the park. The North Entrance road is also the only corridor for residents of Cooke City to reach essential services in the winter. When the North Entrance road goes out of service due to rock and landslides, the two available alternate routes involve a minimum of 5 hours to traverse. It is imperative that the park use available expertise to study geotechnical engineered solutions to stabilize the North Entrance Road.

Outcomes with Completion Dates:

Draft final Report or Preliminary Report Due to YNP Contacts: December 31, 2013
Final Report - July 30, 2014

Keywords: North Entrance Road, geology, stability, geotechnical engineered solutions, Yellowstone National Park, University of Wyoming