

## TRANSPORTATION SEMINAR

**Rural Roads: The Good, the Bad, and the Ugly**

Friday, April 21, 2017  
3:00pm to 4:30pm

Please join us in Schwada Building (SCOB) room 101 📍

**Gordon Keller, P.E., G.E.**

Geotechnical Engineer



Rural roads are a lifeline for rural economies, forest management, dispersed recreation, and for quality of life in rural areas and countries. Sixty to seventy percent of the world's roads are rural, low-volume roads, particularly in developing countries and including in the United States. There are 20 million miles of these roads worldwide. The US Forest Service has 370,000 miles of low-volume forest roads across the U.S. Current climate and storm damage issues put a large strain on existing road systems and demand major investment in repairs and reconstruction. Political, social, environmental, and economic constraints make design and management of rural roads a great challenge. Many of these issues can be addressed and resolved by the application of "Roads Engineering Best Management Practices":

- Application of basic engineering and design concepts, including planning and locating, drainage analysis, material selection, and use of biotechnical and conventional erosion control measures;
- Environmental awareness and application of practical environmental mitigation measures, such as water quality protection, erosion and sediment control, fish passage and wildlife crossings, and invasive species control; and
- Appropriate use of innovative technologies such as GIS mapping, geosynthetics, trenchless technology, mechanically stabilized earth structures, and simple in-situ characterization tools to facilitate the work and make it more cost-effective,

We will discuss the many joys, frustrations, and some interesting moments dealing with rural roads training in many countries.

Mr. Keller is a licensed Civil and Geotechnical Engineer in California. He received a BS in Civil Engineering from UCLA in 1968, and then a MS in Geotechnical Engineering from the University of California, Berkeley in 1972. He worked with the U.S. Forest Service for over 40 years and is currently retired, but continues working as a private engineering consultant. Professional experience has included extensive work with low-volume roads, slope stability, retaining structures, drainage, materials source development, and bridges and dams. He has conducted over 40 Low-Volume Roads Engineering Best Practices lectures and training courses worldwide over the past 10 years. He is involved in activities with the Transportation Research Board Low-Volume Roads Committee, International Erosion Control Association (IECA), American Society of Civil Engineers (ASCE), International Roads Federation, US Forest Service Office of International Programs, and a variety of other agencies and Universities. He has published numerous papers on various aspects of Geotechnical and Geologic Engineering, as well as manuals on Minimum Impact Low-Volume Roads Engineering Best Practices and Storm Damage Risk Reduction.



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