

SEMINAR TITLE: Seismic Performance and Post-Earthquake Resilience of Highway Systems

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ABSTRACT:

Protection of life safety is no longer the sole requirement for the successful seismic design of bridges and other highway structures. Design to maintain acceptable highway-system performance and resilience that reduces post-earthquake traffic disruptions and ensures rapid restoration of system-wide traffic flows is also vital for facilitating emergency response, reducing economic losses, and reducing societal impacts of earthquake damage.

To address this issue, the FHWA has sponsored multi-year research to develop a new methodology (named REDARS) for deterministic or probabilistic seismic risk analysis of highway systems nationwide. This seminar will describe this methodology, provide a demonstration application of the methodology to the Los Angeles highway system, summarize new improvements to the methodology that are now being developed, and discuss directions for its continued development in the future.

BIOGRAPHICAL SKETCH

Stu Werner, president of Seismic Systems & Engineering Consultants in Oakland CA, has over 40 years of experience in earthquake engineering and risk reduction projects. Since the mid-1990s, Stu has led the development of the REDARS methodology for seismic risk analysis of highway systems for the Federal Highway Administration. He has also worked on a wide variety of other projects for such clients as the California Department of Transportation, the Network for Earthquake Engineering Simulation (NEES) research program, the Ports of Oakland and Los Angeles, the Bay Area Rapid Transit (BART) system, and the San Francisco International Airport. Stu has published over 140 technical papers and is active in numerous professional organizations.