

DECEMBER 9, 2020

Wednesday, December 9, 2020
4:00 PM (1.0 PDH)



WORKSHOP

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Title : **Geoforensic Study of Voss Road**

Speaker : [Dr. Harry Nguyen, M.ASCE](#) w/ [Geotech Engineering and Testing](#)

Dr. Nguyen is a project manager at Geotech Engineering and Testing (GET) with the responsibility for the daily operations of geoforensic, materials and geotechnical engineering services. He has several years of experience in fields of geoforensic, geotechnical, environmental, and materials engineering. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, sewer leaks, plumbing leaks, etc. His other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, community centers, office buildings, and subdivisions. He has also conducted studies in slope stability, retaining walls, groundwater and contamination modeling. His other experience includes research and development in the field of unsaturated soil mechanics (expansive soils). Dr. Nguyen is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.

ABSTRACT : The existing concrete pavement at Voss Road within the City of Houston has experienced distress. Voss Road is a four-lane boulevard. The west two lanes, located on the slope at the Buffalo Bayou Tributary, have experienced distress. The distressed pavement area is about 400± feet long. The existing slope at the Buffalo Bayou Tributary area is about 1(h):1(v). The Buffalo Bayou Tributary is about 25-ft deep. A Geoforensic Study of the project was conducted to evaluate the causation for distress. The study consisted of site visits, two 75-ft depth soil borings, Ground Penetrating Radar survey, coring, laboratory testing, and engineering analysis. The engineering analysis indicated that the causes of the pavement distress could be attributed to (a) the differential consolidation settlements of soil under embankment loading, (b) soil desiccation by the trees, and (c) surface erosion of subgrade soils and slope by infiltration via the unsealed cracks on pavement and sidewalk area.