



NOTICE OF TECHNICAL PRESENTATION

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**AMERICAN SOCIETY OF CIVIL ENGINEERS
KANSAS CITY SECTION, GEOTECHNICAL COMMITTEE**

In cooperation with

**ASSOCIATION OF ENGINEERING GEOLOGISTS
KANSAS CITY – OMAHA SECTION**

And

THE UNIVERSITY OF MISSOURI AT KANSAS CITY (UMKC)

(Department of Geosciences and Civil Engineering) will hold a Technical Meeting on

THURSDAY, DECEMBER 8, 2011

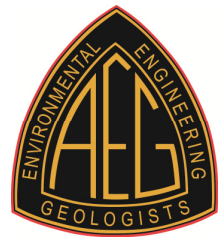
PLACE: UMKC , Room 402 New Student Union, 50th and Cherry, KCMO
PARKING: Metered Lots are available.
TIME: 5:30 – 6:30 p.m. – Social / hors d'oeuvres – beverages
6:30 – 7:30 p.m. – Presentation
COST: \$10.00, \$3.00 – for students
RESERVATIONS: Contact Mike Schmidt w/ TSi, at mschmitz@tsi-engineering.com or 913-749-4010 by Monday, Dember 5, 2011. (Should you want to come and forget to confirm, please come anyway)

PROGRAM: LANDSLIDES AND THE DEVELOPMENT OF HAZARD MAPS FOR NORTHEAST KANSAS

Even the gently rolling hills of the Kansas City Metro Area have areas prone to landslides. In 1995, a landslide in Overland Park made news when someone captured the failure as it destroyed two houses. In 1997, the Kansas Geological Survey began an effort to map the landslide hazards of northeastern Kansas. The pilot area was Atchison, because of the steep bluffs along the Missouri River. A meeting with the city engineer provided information on the locations of several failures and dates of occurrence. For the Atchison pilot project, aerial photographs of several dates were combined with the data from the civil engineer's office, and a field reconnaissance to produce a map of landslide features. The map included recent landslides and slope areas that have features related to dormant landslides. This data was digitized into an ArcGIS shapefile, along with a geologic map of the pilot area, and a digital elevation model (DEM). The DEM was used to produce maps of the slope angle and slope aspect. The next step was to produce quantitative landslide susceptibility map (landslide hazard map). Because of the size of the area (two 7½ minute quadrangles) and a lack of knowledge of the distribution of soil properties, deterministic approaches based on soils mechanics could not be used in this area. Thus, a probabilistic approach was used. Although many researchers in this field use large numbers of data sets, the KGS approach selected datasets based on the key elements of the deterministic approach: material properties and slope angle. Geologic data was used as a substitute for material properties that weren't available. The regression equation was solved using a statistical package producing an equation that could be used to determine the landslide hazard probability for each cell in the raster. The pilot project produced four products: a new geologic map, a map showing the landslide features, landslide hazard map, and a report on the landslides. Landslide feature and landslide hazard maps were produced for several other areas including the City of Leavenworth.

Presented by: Gregory Ohlmacher, PhD, P.G. - Greg is a Geologist with Black & Veatch Corporation in Overland Park, Kansas. Greg has been with Black & Veatch for over 4 years and works in the Geotechnical Engineering Section on engineering geology, subsurface investigations, and construction inspection for power generation and power delivery projects. Greg has a BS in Geology from the University of Maryland and PhD from Purdue University. Prior to Black & Veatch, Greg worked for 10 years as an Engineering Geologist with the Kansas Geological Survey, for 4 years as an Assistant Professor of Geology at the University of Texas, El Paso, and 2 years at the University of Mary Washington as a Senior Lecturer in Geology. Greg began his career with the United States Geological Survey in Reston, Virginia where he worked for 10 years.

Eligible for 1.0 Professional Development Hour (PDH) for attending



Kansas City Geotechnical Committee Members:

James Landrum, Olsson Associates (Chair)
Craig Buhr, Burns & McDonnell
Axel Novion, GeoSource
Aaron Gaul, Geopier Foundation Company
Brett Odgers, Mirafi Construction Products
Bill Powers, Nicholson Const.
James Liljegren, Black and Veatch
Lok Sharma, Terracon

Scott Mackiewicz, Kleinfelder
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