



**Vancouver
Geotechnical Society**
A Local Section of the
Canadian Geotechnical
Society

www.v-g-s.ca

2015-2016 Executive Committee:

Chair	-	Ali Amini, NAGL	604-984-0759
Past-Chair	-	(Kumar) S. Sriskandakumar, BGC	604-684-5900
Program Director	-	Robyn Barnett, Tetra Tech EBA	604-685-0275
Treasurer	-	Chris Longley, Stantec	604-340-5123
Secretary	-	Yoshi Tanaka, Levelton	604-278-1411
Registrar	-	Shane Magnusson, Amec Foster Wheeler	604-294-3811
Web Manager	-	Marc Bossé, Thurber	604-684-4384
CGS Director	-	Jason Pellett, Tetra Tech EBA	604-685-0275

NOTICE OF UPCOMING TECHNICAL PRESENTATION

Wednesday, November 25, 2015

SUBJECT: Canada's 5th Generation Seismic Hazard Model for the 2015 National Building Code of Canada

SPEAKER: Trevor Allen, Seismologist – *Natural Resources Canada*

Trevor completed his postgraduate studies at Monash University in Melbourne Australia in 2004. Since then he has worked as an earthquake seismologist in Australia, the United States and most recently, Canada. Through his work with Geoscience Australia, Trevor was involved in several aspects of the Australian earthquake research program. He has a special interest in earthquake hazard for stable continental regions and also led regional disaster risk reduction initiatives, working in partnership with technical agencies in Indonesia and the Philippines. Trevor currently works as an earthquake hazard specialist with Natural Resources Canada. He is focused on research that will improve knowledge on the likely ground-shaking hazard throughout Canada.

CONTENT: Canada's 5th Generation seismic hazard model has been developed to generate seismic design values for the 2015 National Building Code of Canada (NBCC2015). The model updates the earthquake catalogue, consistently expresses earthquake magnitudes in terms of moment magnitude, revises earthquake source zones, and includes probabilistic treatment of Cascadia and other fault sources, so as to estimate mean ground shaking at the 2%/50-year probability level. Hence it takes advantage of newer knowledge and replaces the 4th Generation 'robust' combination of alternative models used for NBCC2010 by a fully probabilistic model. The ground-motion models (Atkinson and Adams, 2013, Can. J. Civil Eng.) use a "reference suite" approach and represent a major advance over those used for the 4th Generation model. Seismic design values (mean-hazard on Soil Class C at $V_{S30}=450$ m/s) for PGA, PGV and for $S_a(T)$ for $T = 0.2, 0.5, 1.0, 2.0, 5.0,$ and 10.0 s will be used in NBCC2015. The NBCC2015 specifies new period-dependent soil factors $F(T)$ (replacing amplification factors F_a and F_v) related to a region-dependent PGA on reference rock.

For locations in western Canada, the seismic hazard at long periods has increased significantly for areas affected by the probabilistic Cascadia interface. In Haida Gwaii and the Yukon, the explicit inclusion of fault sources has also affected the estimated hazard. At locations in eastern Canada, the estimated seismic hazard at long periods has generally increased while it has decreased at short periods—in some places significantly. The NBCC2015 hazard model is generally comparable to the 2014 United States National Seismic Hazard Maps (U.S. Geological Survey Open-File Report 2014-1091) at border locations. Significant differences between the hazard estimates can often be explained in terms of model implementation or judgement on the model inputs, reflecting a different interpretation of the hazard.

DETAILS: **Location:** Executive Inn, 4201 Lougheed Highway, Burnaby, BC V5C 3Y6 (Phone: 604-298-2010)

Social Hour: 5:30 to 6:30 pm (drinks available at the hotel bar)

Technical Presentation: 6:30 to 7:30 pm (No need to RSVP)

Dinner: 7:45 pm (\$30 will be charged for dinner).

If you would like to stay for dinner, please RSVP to Shane Magnusson via email or at the door
shane.magnusson@amecfw.com