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**April 2021 CGS-SOS Webinar  
Physical and Mechanical Properties of Soils  
in the Greater Toronto Area**

**By: Mr. Dmitry Olshansky, P.Eng. and Mr. Geoffrey Creer, P.Eng.**

**Date:** April 22, 2021  
**Time:** 12:00 – 1:30 PM

**Registration Link:** <https://www.eventbrite.ca/e/april-2021-cgs-sos-webinar-physical-and-mechanical-properties-of-soils-tickets-149566761209>

The link to access the webinar will be provided to the registrants in advance of the event.

**Abstract:**

Extensive geotechnical investigation and laboratory testing programs were carried out for recent transit expansion projects in the Toronto area. The testing included routine characterization index testing - water content, grain size distribution, Atterberg Limits and unit weights - and a suite of advanced testing consisting of approximately 181 triaxial compression test sets (in the order of about 540 specimens) to define the strength properties (friction angle,  $\phi'$ , and the cohesion,  $c'$ ) of the soils for use in design. In this webinar, we present a summary of the characterization and triaxial compression results, classified using the physical properties of the TTC Soil Groups.

Two different sampling methods were used to obtain triaxial test samples conventional PQ coring and the faster Sonic coring method. A comparison of the results indicates that the sampling method (PQ or Sonic) had minimal impact on the friction angle results, with the Sonic soil samples generally indicating a slightly lower friction angle when compared to those soil samples obtained using PQ methods.

Based on the review of soil strength parameters recommended for various new developments and transit infrastructure improvement projects compared to the results various triaxial compression testing, it appears that geotechnical design engineers may be underestimating the strength of the soils in the Greater Toronto Area favouring to use more conservative values for the friction angle and cohesion of soils.

**Speakers:**

**Dmitry Olshansky P.Eng. and Geoffrey Creer P.Eng., Senior Geotechnical Engineers, Toronto Transit Commission, Toronto, Canada**



*Mr. Olshansky is a senior geotechnical engineer with the Toronto Transit Commission (TTC). He worked in the consulting industry for 20 years before joining TTC in 2008, where he has been involved in a number of major infrastructure expansion projects including the investigations and design for the Scarborough Subway Extension, Wilson Yard Expansion, the Waterfront Toronto Light Rail Transit expansion and modifications, Leslie Barns Streetcar House, Downtown Relief Line Subway preliminary design, as well as many capital improvement projects.*

*Mr. Olshansky holds a Master of Engineering in Civil Engineering from the University of Waterloo and a Master of Science in Geotechnical and Hydrogeology from Moscow University. He has international experience in a wide variety of geotechnical and geoenvironmental engineering work including, site investigations, geotechnical mapping,*

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Southern Ontario Section**



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*slope stability assessments, shallow and deep foundation design, including micropiles and helical pier design and testing, pavement investigations and design, shoring design, seismic analysis, groundwater control and dewatering.*



*Mr. Creer is a senior geotechnical engineer with the Toronto Transit Commission (TTC). He worked in the consulting industry for 12 years before joining TTC in 2009, where he has been involved in a number of major infrastructure expansion projects including the investigations and design for the Scarborough Subway Extension, Wilson Yard Expansion, Bloor-Yonge Station Capacity Improvements, the Waterfront Toronto Light Rail Transit expansion and modifications, Yonge North Subway Extension, Downtown Relief Line Subway preliminary design, as well as many capital improvement projects.*

*Mr. Creer holds a degree in Civil Engineering from the University of Toronto and has experience in a wide variety of geotechnical and geoenvironmental engineering work including, site investigations, slope stability assessments, shallow and deep foundation design, including micropiles and helical pier design and testing, pavement investigations and design, shoring design, seismic analysis, groundwater control and dewatering.*

<b>General Admission to Webinar</b>	<b>Free</b>
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