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## Better Management of Excavated Soils Can Save Ontario \$1 Billion/year and Reduce Emissions

The Ontario Society of Professional Engineers (OSPE), the Greater Toronto Sewer and Watermain Construction Association (GTSWCA) and the Residential and Civil Construction Alliance of Ontario (RCCAO) have partnered to prepare a study on excess soil management so sustainable practices are considered through the design and construction of Ontario's infrastructure projects across the province.

Soil is a valuable and finite resource that is essential for life. This fact was recognized by the United Nations when it declared 2015 the International Year of Soils. Furthermore, the Ministry of the Environment and Climate Change has encouraged the adoption of best management practices (BMPs)

As environmental stewards, professional engineers and construction professionals should promote BMPs to conserve natural resources such as soil during the development of various infrastructure and construction projects.

### Key Recommendations

- Excess soils generated from projects in Ontario should be treated as a resource, not a waste
- Reducing the transport of soils that can be re-used or recycled makes economic and environmental sense
- A model by-law should be created to promote the use of BMPs on infrastructure projects
- Industry can collect data to highlight opportunities for both government and businesses to prioritize the handling of excess soil

### Primary Findings

- Surveyed 24 projects in Ontario ranging from under \$1 million to over \$50 million
- On average, handling and disposal of excess soils represents 13% of total project cost
- Excess soils were hauled long distances from source to receiving sites
- Over 70% reported more than 100 one-way trips averaging 98 kilometres to dispose of excess soils
- Combined travel distances totalled more than 300,000 km – 38 times the length of the Trans-Canada highway
- Similar total travel distance required to import virgin soil and/or granular materials
- Using emission rate calculations from the United States Environmental Protection Agency (U.S. EPA), the larger projects where more than 100 trips are required for soil disposal generated 370 kg of carbon monoxide and 1,467 kg of nitrogen oxide emissions
- Average savings would be 12% (or \$1.7 million) for each project if excavated soil had been reused, and one reported project could have saved \$5.5 million on this basis
- Projects that reported using the Excess Soils Management BMP experienced an average of 8% in cost savings
- If all 24 projects used BMPs and could achieve 8% in cost savings, more than \$26 million could have been saved

No organization currently tracks cost savings or greenhouse gas-reducing potential of BMPs for excess soils. Even if excess soils management accounts for only 5% of capital value for all infrastructure projects across the province, the total savings would be up to \$1 billion per year. These savings could be used to deliver other government programs and priorities.

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