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Ministry of the Environment and Climate Change
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135 St. Clair Avenue West
Toronto, ON M4V 1P5

RE: EBR 012 – 6065 Excess Soil Management Policy Framework

Dear Mr. Durrani,

The Ontario Society of Professional Engineers (OSPE) is pleased to present the following submission concerning the proposed *Excess Soil Management Policy Framework*, published on January 26, 2016.

OSPE is the voice of the engineering profession in Ontario. As an organization, we advance the professional and economic interests of our members, many of whom work in the environmental sectors. OSPE is pleased to respond to this Notice for public comments to provide guiding principle for the development of policy related to the management of excess soil.

It is important for your office to note, before commenting on the Framework, that OSPE, the Greater Toronto Sewer and Watermain Construction Association (GTSWCA) and the Residential and Civil Construction Alliance of Ontario (RCCAO) partnered to prepare a study on excess soil management so that sustainable practices are considered during the design and construction of Ontario's infrastructure projects. The following are preliminary findings from the study based on a survey distributed to the industry professionals. Specific comments about the Framework then follow.

Preliminary Survey Findings

As environmental stewards, professional engineers and construction professionals should promote best management practices (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 km to dispose 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 approximately 400 kg of carbon monoxide and 1,500 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 (GHG) -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 represent in the order of \$1 billion per year. These savings could be used to deliver other government programs and priorities.

OSPE Comments on the Proposed Excess Soil Management Policy Framework

Introduction:

The proposed Framework seeks to protect human health and the environment from inappropriate relocation of excess soil and to enhance opportunities for the beneficial reuse of excess soil. As such, soil must be managed as a resource, not as waste. This change in approach is fundamentally important to move beyond the mindset of transporting soils which now defaults in soils being transported to landfills for disposal. OSPE considers this as the foundational principle behind the Framework and a message that must become ingrained in, and followed by, all stakeholders involved with excavating and transporting soil.

OSPE commends MOECC for thoroughly researching the issues and listening to industry, municipalities, and other ministries to determine the need for a new Framework. As outlined in the proposed document, it is clear from the engagement of these stakeholders that there is widespread support for the proposed approach.

OSPE strongly supports instituting the Framework as outlined. We do, indeed, have several comments that could strengthen the initiative and lead to its effective implementation.

Need for a Revised Policy Framework:

Our own research, and especially the aforementioned survey results, support the observations gleaned from MOECC's public engagement and research. A few examples are worth expanding upon.

Historically, the "decision maker" with respect to the disposition of excess soil generated from construction activities has been the contractor/subcontractor. This is borne out in the OSPE/GTSWCA/RCCAO survey (henceforth, the Survey) results with 75% of respondents indicating the general or sub-contractor makes the decision on soil disposal. The Framework correctly puts more onus on the source site or property owners (including municipalities), meaning there should be more front end soil reuse planning by developers. This better manages the soil generators' responsibilities for treating soil as a resource and makes the results/efficiencies identified in the BMP project even more meaningful.

OSPE concurs that better tracking and record keeping is necessary to properly manage excess soil. Indeed, in reality there is no centralized repository of soil movement and disposal, let alone quantitative data on volume, disposal, destination and other characteristics of excess soil movement. The Survey provides some quantitative data by providing a snapshot into the industry and current practices. Respondents demonstrate, for example, that over half of the projects managed soil a waste material. Furthermore, many of those projects necessitated needing over 100 trips to dispose of said soil. Taken further, indications are that between 5,000 and 20,000 kilometres per

project were potentially driven to dispose of soil as waste material rather than a resource.

Industry experts have informed OSPE that one way to institute BMPs for excess soil management is for municipalities to adopt a consistent set of bylaws to assist in the management of excess soil. OSPE is pleased that the Framework acknowledges this and recognizes that municipal site alteration bylaws could benefit from additional guidance to promote better oversight. The intent of the Survey is to provide relevant government ministries with this information based on solid evidence. Municipalities then need to widely adopt model bylaws from other jurisdictions. In our view, Ontario needs to guide and ensure bylaws that are consistent throughout the province as well as being transparent and enforceable.

The general lack of data is the most important reason that the Survey was developed. If the volume expressed in the Framework is based on broad assumptions, the Survey provides practical evidence, albeit from a small sample size. Based on the sample, the 24 projects described moved almost 300 cubic metres or 600 metric tonnes of excess soil. If multiplied by all excess soil transport actions which occur annually within the province, the numbers reach into the millions of tonnes.

Policy Framework Approach

OSPE agrees and supports that BMPs for excess soil should include increased responsibility on the part of the source site to address re-use planning, tracking, overall responsibility, and matching soil with appropriate receiving sites. Furthermore, mechanisms need to be in place to ensure compliance is enforced for the proper disposal of soil that cannot be reused. Industry observers continue to report that soil is still dumped illegally from time to time.

Clarifying roles and responsibilities for oversight and implementation of BMPs for soil management is indeed a multi-ministry responsibility and OSPE is pleased this is recognized in the Framework. OSPE would also ask that we, as the advocacy body for Ontario's engineering profession be included as one of the non-governmental organizations to help develop programs to facilitate innovative approaches to the reuse of soil, use of best practices, compliance and raising awareness.

OSPE's role is especially important to provide insight and quality assurance in terms of establishing and defining the competencies of Qualified Persons (QPs). Indeed, OSPE represents individual engineers acting as QPs, while PEO (and APGO) oversee regulations governing QPs. As such, OSPE will promote accountability and credible advice consistent with provincial direction and professional practice on technical matters. The new Framework must ensure that QPs are indeed qualified.

In summary:

- Work must be undertaken by qualified **and** licenced individuals.

- Licensing bodies should be held to account for their respective members being fully qualified to conduct this work and develop transparent methods for demonstrating these qualifications to the public.
- Government and the public should be able to rely on this work being completed competently.

Goals and Principles

Framework principles are sound and realistic as listed in MOECC's proposed document. OSPE especially supports the concept of treating excess soil as a resource and not a waste. As well, we strongly urge that approaches should be based on science and evidence-based. The Survey provides such evidence.

Based on the Survey, it is insightful to look more closely at one project as a case study. This project utilized truck/trailers to move soil, meaning each load would be around 15 cubic metres in volume, and required over 100 trips to transport the soil to a landfill. Total distance of transport was between 50 and 100 kilometres one way. The project was valued at over \$50 million, with soil disposal representing between 2.5 to 5% of total project value. This means that up to \$2.5 million was spent hauling soil to a landfill to be disposed of as waste and potentially 10,000 kilometres driven to do so for this one particular project.

Policy Needs and Actions

As illustrated, the proposed provincial framework successfully demonstrates the policy needs and actions for effective implementation of excess soil management practices. OSPE has a strong interest in participating in the development and elaboration of guidance for QPs. Key to successful implementation will be conducting pilot projects. OSPE would be an appropriate observer to evaluate such activities.

Policy needs of source sites are critical for the effective management of soil. While it is sound to create such policies, there is concern over how verification will be established that excess soil is actually received at an appropriate location for reuse. New standard practices must engage contractors on how to achieve the recording of excess soil movement.

OSPE supports MOECC working with partner ministries to develop new regulations under the *Environmental Protection Act*. OSPE would be available to provide more input on details concerning how QPs will certify larger and/or riskier source sites. Requirements may be scalable depending on the size or risk.

Regarding requirements for testing excess soil based on past land use and potential contamination, OSPE suggests that another requirement be added based on industry standards and professional judgement as a QP will be required to prepare and certify a soil management plan. OSPE should be consulted along with PEO and APGO to define what a QP is and recommends that the definition be more detailed than the definition as

outlined in O. Reg. 153/04. OSPE maintains that a professional licence to practise engineering (or geoscience) forms only part of the requirements needed to be considered a QP for the purposes intended in this policy framework document.

As for policy needs for interim sites, OSPE recommends that the requirements of these sites be carefully and clearly articulated in the policy framework. OSPE suggests the minimum requirements for interim sites be approved prior to any soil movement onto an interim site, if that is what is meant in the Framework. In actions to be taken, it certainly indicates MOECC will clarify these requirements, so it is likely under policy needs, the bullet stating minimal requirements merely needs to be re-worded.

The Survey certainly documents the significant amount of soil being taken to receiving sites as waste. Minimizing this activity will save money and indeed lower GHG emissions. Municipalities need more control over the establishment and operations of commercial fill sites within municipal boundaries if excess soil management practices are to effectively change for the better. Portions of the *Municipal Act, 2001* will need to be reconciled to reflect this.

Concerning technical standards, OSPE agrees that local background conditions should be used for excess soil. However, some background standards are too restrictive to be used as the standard for re-using soils. This would mean most soils would continue to go to waste. Many projects, especially infrastructure near roadways, yield excess soils with typical exceedances due to de-icing chemicals (“salt” expressed analytically as EC/SAR). Relaxing the requirements for these parameters where soils are imported onto roadway projects would create a substantial value in terms of beneficial re-use of soils. (Why import clean soil if a road project will just add de-icing salt on top of new soils starting the first winter season after placement?)

We ask if there is a mechanism for creating a database for this information? MOECC could start now on compiling this mechanism.

While it is understandable to use generic risk-based approaches, the description as stated in the Framework could be re-stated to define this approach more clearly. For specific risk-based approaches, we recommend mapping out the process to allow (industry) to manage a moving regulatory target which advances over time in step with improving science. Such planning in the regulatory and policy framework now will create a robust basis for managing BMPs as they evolve in the future.

OSPE applauds MOECC in their stated plan to develop clear guidance to inform requirements for testing excess soil. We recommend a clear and distinct interface with O. Reg. 153/04 requirements to afford consistency in approach between “RSC” sites and “other sites” which generate excess soils.

The planning for re-use opportunities is essential for effective and beneficial changes to excess soil management. OSPE supports this plan of action. Questions arise as to how to incent municipalities to implement these much needed changes. Will MMAH and MOECC provide workable models to guide municipalities? Encourage or demand new

bylaws? Exactly how will municipalities help ensure that future growth and planning includes an assessment of excess soil? Furthermore, the solutions should be scalable. It is true that guidance is needed for large-scale projects, but small scale projects should also be held to account for good practices for proper management of excess soil, albeit on a smaller scale. If a project, no matter what size, is required to have an Environmental Assessment, then it should be possible to develop an excess soil management plan as well.

In terms of integration and implementation, OSPE urges that Regulation 347 (General – Waste Management) be updated in a timely manner. As well, working communities of experts should indeed be consulted when integrating and aligning provincial legislation, regulations, guidelines, processes and other policy related to excess soil management.

It is prudent and commendable that MOECC, MTO, and MEDEI will work together to review and update existing guidance for provincial projects. Policies and regulations will need to be aligned between ministries to reduce commercial gaps and ensure greater consistency in the management of excess soil. For procurement practices, OSPE strongly recommends that the focus should be on best value versus least cost and implement, wherever appropriate, a Qualifications Based Selection for engineering work. OSPE requests to be included in the Excess Soil Stakeholder and Engagement Group. For example, we are already referencing and very familiar with the UK CL:AIRE model and will be using it for recommendations derived from the Survey. OSPE will bring insight and expertise to this stakeholder group.

Priorities and Timeline

Overall, OSPE is satisfied with proposed actions and timelines for implementing an excess soil management framework. We are concerned, however, that it indicates that MOECC work with QPs is already underway. As the Ontario voice for engineering professionals, we represent the precise QPs that MOECC is interested in talking to but have yet to be asked to participate. Given the preliminary findings of the Survey, OSPE should be viewed as essential to discussions about excess soil management.

As mentioned in a March 9, 2016 letter to Minister Murray from House Speaker Levac, OSPE is well placed to advise MOECC and should be sought for trusted insight and expertise.

Questions for Consideration

1. The Framework adequately outlines policy tools and actions to improve the management of excess soil in Ontario. Beneficial changes to these management practices will depend on how they are implemented and the incentives given to major players to change. These must be carefully planned and involve consultation with those who will be affected.

2. CL:AIRE out of the United Kingdom can be used as a model to adapt in other jurisdictions. Historically, the low countries (particularly Netherlands and Belgium) have

led soil conservation measures due to the extreme value of this resource in those areas. In Canada, British Columbia has adopted practices towards certifying licensed professionals working on contaminated sites. It would behoove all parties to carefully research other jurisdictional materials (both domestically and internationally) for current science and policy adaptations for the smart use of excess soils as a resource.

We find that in terms of written material on excess soil, Ontario has generated a great deal of information and OSPE commends the government for its attention to the issue. It is very timely and the Framework now proposes implementation of excess soil management policy to take the province to the next level of best practices.

3. OSPE sees the establishment of regulations to clearly define QPs and their competencies as a priority action.

4. OSPE sees a role as advisor to Ontario ministries on best practices of excess soil management. We see a role to participate on the aforementioned Excess Soil Stakeholder and Engagement Group. OSPE will also work with PEO as the voice of Ontario engineering professionals to ensure legislation regarding QPs and regulations governing excess soil management are effectively communicated to professional engineers.

5. OSPE and organizations such as the Ontario Environmental Industry Association (ONEIA) represent the practitioners of soil management. As such, both OSPE and ONEIA can advise all levels of government, as well as educate stakeholders and the general public, about excess soil management practices.

6. MOECC and other ministries can best engage OSPE by inviting us to stakeholder advisory groups and by meeting with our experts to discuss excess soil management.

7. OSPE looks forward to continued dialogue with the ministries involved with excess soil management, and improved excess soil management practices as a result of the government's current initiative to advance the state of practice across the province.