



ONEIA

Ontario Environment Industry Association



RESPONSE TO THE PROPOSED EXCESS SOIL MANAGEMENT POLICY FRAMEWORK

EBR REGISTRY NUMBER 012-6065

Ontario Environment Industry Association

EXECUTIVE SUMMARY

The Ontario Ministry of the Environment and Climate Change (MOECC), through the EBR consultation process, released a *Proposed Excess Soil Management Policy Framework* on January 26, 2016 (Framework). The Framework is a follow-up to January 2014 *Management of Excess Soil – A Guide for Best Management Practices* (the BMP).

The Ontario Environment Industry Association (ONEIA) applauds and supports the MOECC for the initiative to establish rules and regulations that provide better governance and management of excess soils generated in Ontario.

The proposed MOECC Framework references and addresses for the most part all the previously identified excess soil handling requirements based on stakeholder inputs over the past years, and since the BMP release. The Framework is a good blueprint with all the related issues identified along with directional suggestions. In terms of content what is missing in the Framework is more reference to, and specific definitive actions, to address green-house gas (GHG) reductions as part of an Ontario climate change initiative. As identified in other jurisdictions, managing excess soils based on their beneficial reuse represents a major opportunity to significantly reduce the trucking and haulage of soils. In addition to reducing GHG production, the consumption of non-renewable fossil fuels is reduced and wear and tear on infrastructure is reduced. Further promotion of local use and interim sites could also assist in reduction of GHGs. This is a major focus both federally and provincially and should be strongly emphasized in the Framework.

While the document sets out the policy Framework, details regarding implementation need to be developed and ONEIA supports moving ahead with the expertise that can be provided in the proposed stakeholder (ESSEG) group and its subgroups, as soon as possible.

Source, Interim and Receiving Sites

The Framework has identified that additional responsibility is to be placed on the generator (source sites) to ensure better planning, tracking and management of excess soils and increase due diligence. This is a welcomed shift from the current focus of responsibility being laid upon the receiving sites.

The policy puts much emphasis on the responsibility of the source site owner, but there is no clear end or process that would allow an owner to pass on that responsibility once the material is no longer in their control. This means there is really no incentive for owners to consider the soil for reuse versus sending for landfill disposal. Landfilling is the only process that seems to allow them a means of not having lingering liabilities beyond their control. As such, liability control and transfer needs to be considered and implemented as part of the Framework.

Also, there are some concerns that possible changes to “allow municipalities to regulate site alteration and placement of fill within their municipality” will result in further off-loading of

responsibility for compliance and enforcement to under-resourced municipalities from MOECC. Enforcement activities should remain with the MOECC and clear examples of by-laws for municipalities to follow should be developed and implemented by the Ministry of Municipal Affairs and Housing (MMAH). Clear consequences for those operating outside the Framework and the policy should be established.

Technical Standards

The Technical Standards will be the most utilized tool within the proposed new Framework and Policy, and as such, may be viewed as the most important item to get right the first time.

ONEIA recommends that flow-chart method be developed that will identify the various conditions and situations that may occur with excess soils, and what regulatory body, guidelines, standards and legislation, that the situation falls into. This would create an easy to follow pathway that would allow for focused discussions at a number of junctions within the flow-chart process.

Quality standards (concentrations not to exceed) and a minimum analytical suite to be tested needs to be established, whether it is referenced to O. Reg. 153/04, a sub-set of the Table Standards for O. Reg. 153/04, or a completely new set of standards. Establishment of the Standards should include input from the technical specialists representing the contract analytical laboratories.

It cannot be stressed enough that the technical guidance tools and standards need to be clear, practical, flexible and effect based.

Reliance on QPs

As extensive reliance on QPs has been identified throughout the MOECC's BMP (encouraged) and now the Framework documentation (mandatory), the need for training and certification is now evident. The Framework document identifies the Roles and Responsibilities of QPs as to "provide accountability and credible advice consistent with provincial direction and professional practice on technical matters," and to "provide quality assurance and consistency in advice." Without training, certification and registration of appropriately experienced professionals (QPs), consistency cannot be established and maintained. Further, without the MOECC and professional body developed "guidance," consistency and enhanced public confidence on QPs work and opinions will not be attained.

Regulation

ONEIA is supportive of a new regulation; however, in doing so, the QP system will need to be overhauled. It is noted that regulation will be needed in order to support effective enforcement rules and tools. The timing for new regulation may have been under-estimated and will require

some detailed consideration. The definition of “waste” will also require careful consideration and updating with respect to excess soil and “inert fill.”

Program Implementation

Implementation must be pragmatic and as discussed in the Framework document; consideration of cost as well as environment and risk is essential. In addition, if implementation does not provide comfort to communities and the municipalities that are responsible for them, they will be reluctant to accept and re-use soils. If the implemented Framework is onerous and difficult to assign responsibility throughout the process, site owners (excess soil generators) may still be attracted to landfill disposal over reuse, as it is still an inexpensive alternative. Unless government establishes a mechanism to discourage landfill of non-contaminated soil, it will remain an attractive option. Viable and innovative non-landfill options of excess soil management need to be promoted, incentivized and available.

This process for effective enforcement is an integral part of the implementation strategy.

In the Framework document, there are two key strategies that will assist in achieving the right approach. The first Strategy includes establishing the proposed Excess Soil Stakeholder and Engagement Group (ESSEG). The formation of this group should move forward as a priority, as quickly as possible. Regulations and other such approvals take time and the sooner proposals can be agreed to, the sooner real implementation can occur. The second Strategy is implementing the Framework with an integrated approach. As set out in the Framework document, there needs to be an integration and alignment of the responsibilities and legislation of the various involved Ministries (i.e. multi-Ministry approach that has been discussed). ONEIA believes that MMAH is a key Ministry with MOECC to ensure implementation. Inclusion of excess soil considerations to the Building Code and/or the Planning Act will also assist in the overall implementation. Clearer identification of roles and responsibilities throughout the process needs to occur along with ensuring municipalities have the appropriate tools to implement this proposed approach.

Under the assistance of the ESSEG and dedicated Working Groups, it is recommended three of the Action Items be re-prioritized and be more clearly defined in terms of their exact timetable and expected deliverables. Action #4 should be released ASAP, while Action #2 and #13 should be moved from longer term to short term.

As stated previously the key to Priorities and Timelines is the creation of an accountable program within the ESSEG to further refine, co-ordinate, implement and steward the identified proposed action items on pages 29 and 30 of the Framework document.

Without the immediate establishment of the ESSEG and Working Groups with defined mandates and Terms of Reference, the time for the MOECC to promulgate regulations and standards to

support Excess Soil Management in Ontario will be delayed further creating confusion and difficulties for work that is already in the planning and execution stages for the remainder of 2016 and early 2017.

Summary

ONEIA applauds the effort and commitment shown in the MOECC led Policy Framework development for excess soils in Ontario. It is our general opinion that the MOECC has “got it right,” but there is still much work to be completed in establishing the fine details of the Policy. It is also pointed out that the Framework only outlines the process; and that the industry is still waiting for definitive actions, processes and rules. Getting this implemented in a timely manner should be the highest priority for this Policy Framework, which starts with the formation of the ESSEG and multi-ministry working group.

The implementation plan should be tied in with land use policy at the municipal level with the critical assistance of the MMAH. Industry representatives that have been working with you to date have the first-hand understanding and the expertise in the Brownfield situation, which many of the issues are similar in nature. We look forward to continuing working with you to ensure the tools that are developed are workable and enforceable, and that this initiative moves forward in an effective and pragmatic way.

1. Introduction

Background and Overview

The Ontario Ministry of the Environment and Climate Change (MOECC), through the EBR consultation process, released a *Proposed Excess Soil Management Policy Framework* on January 26, 2016 (Framework). The Framework is a follow-up to January 2014 *Management of Excess Soil – A Guide for Best Management Practices* (the BMP). Pending release of the final document, the Framework proposes to implement “a system that better provides for life-cycle excess soil management, with greater responsibility placed on the *source sites* of *excess soil*.” In addition to more upfront planning, a multi-ministry approach will be taken to encourage responsible and effective management of excess soils and ensure building of sustainable communities in Ontario.

The proposed Framework identifies the need for a new approach to soils handling utilizing harmonized regulations, policies and requirements that will support a well-managed excess soils management system. Accordingly, within a more coordinated regulatory and enforcement regime, is the need for industry and other involved stakeholders to “step up” and implement existing and any newly required soil handling best management practices and regulations.

This new regulatory model optimizing both industry and regulatory co-operation and co-ordination is referenced as “Smart Regulation.” With reference to the proposed Framework it is critical to align industry and stakeholder actions with government regulatory policies under development in order to effectively implement best management practices for excess soil in Ontario.

The Ontario Environment Industry Association (ONEIA) applauds and supports the MOECC for the initiative to establish rules and regulations that provide better governance and management of excess soils generated in Ontario. Our comments focus on three key elements of the policy Framework. MOECC has recognized the need for:

- Greater engagement of non-governmental bodies, industries, etc. to provide input and expertise in the establishment appropriate science-based policies;
- Alignment and clarity, through changes to existing regulations where necessary, to support standardization of best management practices for excess soils and property redevelopment in general; and
- A science and evidence-based approach to the establishment of regulatory standards.

ONEIA can only underscore the importance of these key elements and request greater definition, clarity and commitment to these elements by the province.

General Comments

The proposed MOECC Framework references and addresses for the most part all the previously identified excess soil handling requirements based on stakeholder inputs over the past years, and

since the BMP release. The Framework is a good blueprint with all the related issues identified along with directional suggestions. In terms of content what is missing in the Framework is more reference to, and specific definitive actions, to address green-house gas (GHG) reductions as part of an Ontario climate change initiative. As identified in other jurisdictions, managing excess soils based on their beneficial reuse represents a major opportunity to significantly reduce the trucking and haulage of soils. In addition to reducing GHG production, the consumption of non-renewable fossil fuels is reduced and wear and tear on infrastructure is reduced. Further promotion of local use and interim sites could also assist in reduction of GHGs. This is a major focus both federally and provincially and should be strongly emphasized in the Framework.

As identified in the MOECC's proposed Framework, there is a need to create a new industry standard for the management of excess soils. This includes establishing a renewed focus on effective coordination and implementation in the various soil handling practices and standards currently in place, and in a timely fashion. As described in the Framework, this would be a program approach to promote a new industry standard to encourage the effective, beneficial reuse of excess soils. This program focus would be based on implementing the existing excess soil BMP. One of the key implementation areas would be BMP outreach particularly to Municipalities and BMP training and education for Municipalities and Qualified Professionals (QPs) involved in excess soil planning at source sites and approvals at receiving locations including establishing interim sites and use of soil matching tools.

As described, this needed new program delivery focus would provide the needed focal point approach to link and work with stakeholders to further develop, within the Framework, the required new regulatory initiatives identified. It would also become the program focal point to put in place initiatives to track and ultimately reduce GHG production from the municipal, development and construction sectors in Ontario.

Proposed new program or industry standards present an opportunity to track soils information that will create a "big data." Employment of soil matching services or strategically placed interim sites have the opportunity to reduce the current reliance on hauling excess soil by trucks over long distances. This in turn will support the climate change mandate of reducing greenhouse gas (GHG) emissions in Ontario. The program focal point would provide needed metrics and be a depository of "big data" to analyze, understand and improve both soil handling activities and GHG reductions.

Critical to all of the proceeding happening is the adoption of a centralized program and coordinated way to address all stakeholder initiatives and the creation of implementation plans, tools, and training in a robust, accountable and managed format. ONEIA is prepared to support the Province in developing a workable program.

ONEIA has reviewed the new Framework Document and has provided comments on many of the aspects of the document, summarized by main topic in the following sections of this submission.

2. Source Sites

Excess soil from the source site is excavated and cannot be reused on-site in the development. The soil generally non-contaminated (or with low impacts) and as such should not be considered as a waste material (although legislative support is needed in the waste definition). Section 5.1 of the Framework has identified that additional responsibility is to be placed on the generator (source sites) to ensure better planning, tracking and management of excess soils and increase due diligence. This is a welcomed shift from the current focus of responsibility being laid upon the receiving sites. This should assist in ensuring that there is better characterization and determination of suitable reuse options through early planning as opposed to tender based decision making that promotes the current passing of the responsibility to the possessor of the soil (i.e. from the generator, to the general contractor and hauler and then the receiver).

Action #1 in the Framework identifies that the MOECC will work with other Ministries to develop a Regulation that is applicable to larger and riskier excess soil sites with QP certified excess soil management plans that are to be made available to the local authorities (municipalities, conservation authorities, etc.).

- This statement identifies further reliance on QPs, which requires more consideration to be properly implemented, as discussed later in Section 8 of this response.
- The Framework identifies that larger sites are based on a volume threshold characterized by large infrastructure and development sites (condo's, infrastructure, subdivisions) and are not meant to include small residential developments. However, it is still unknown what the volume threshold will be. Also depending on that volume, smaller development sites may be included without the preparation of a soil management plan (SMP). Secondly, receiving sites to accept the excess soils from the source site should be tied to the regulation and Framework, so smaller sites will not be able to reuse soils without SMPs and the relevant QP and characterization data. Again, due to cost and resource issues this could lead to illegal dumping.
- The Framework defines risk based sites as industrial/commercial properties that have a greater chance of having soils impacted from historical operations. Having this defined is relevant and positive as it adds a layer of due diligence. However, based on redevelopment, financing, and municipal requirements for Records of Site Condition (RSCs), Ontario Regulation 153/04, as amended, will be used for investigation and characterization. In order to satisfy the new excess soil regulation, it may become necessary to complete an entirely new investigation outside of O. Reg. 153/04 to compare to the new set of standards and testing that addresses classification of excess soil. This

may drive the like-to-like criteria specified under the BMPs, possibly limiting options for reuse.

- Identifying and documenting the minimum requirements for the contents of each SMP will provide consistency in the industry.
- Source sites will be required by law to implement SMPs and make them available to the MOECC. Non-compliance with the SMP can result in prosecution and the owner of the source site could be responsible for removal of illegally dumped soil. It is hoped that this will place additional due diligence by the owner of the source site to ensure the project trades and contractors are operating within the limits of the SMP and push those instructions on to them from tender through to execution. It is also hoped that a level playing field for tender pricing will become an industry standard since a detailed SMP will be required prior to tender.
- The Framework identifies that the new regulation will refer to BMP document, thus making them enforceable. This will be beneficial since it will provide consistency in the industry on what is required. However, it may reduce the flexibility of QPs, source sites and science for finding re-use options for soil. It is unknown whether reference to the BMP document will result in making the requirements prescriptive.
- As identified in Actions #2 and #3 of the Framework the MMAH and MOECC may include appropriate excess soil management plans (SMPs) as a requirement for Municipal Planning Act approvals and Building Permits. This is viewed as beneficial in that it will provide the early planning required to ensure soils are properly characterized and suitable re-use options are investigated. It will also provide for fair tender pricing since the SMP will define how soils will be managed and disposed prior to tender. Excess soil disposal should not be left to each tender submission to provide its own option and cost.

3. Interim Sites

The term Interim Site refers to a location for the temporary storage and management of excess soil before either returning to the generator site for re-use or to an alternate receiving site for final placement. ONEIA's observations and comments related Interim Sites (Section 5.2 of the Framework) include:

- Source site owners cannot track soil further than the point of delivery and thus cannot be responsible for what happens to their soils after they have delivered them to an "interim site" (assuming the interim site is managed by a different party). The policy puts much emphasis on the responsibility of the source site owner, but there is no clear end or process that would allow an owner to pass on that responsibility once the material is no longer in their control. This means there is really no incentive for owners to consider the soil for reuse versus sending for landfill disposal. Landfilling is the only process that seems to allow them a means of not having lingering liabilities beyond their control.

- Likewise, the policy notes that source site owners will have to “verify” that excess soil is received at an appropriate location for reuse. This is perhaps most easily done when a site has an ECA or similar form of legislated approval (e.g., landfill, transfer station) as identified in Action #5. Verification may be subjective for any other receiving site (e.g., a different construction site that wants the material as fill). Without having a clear process that allows source site owners to “verify” and thus remove their liability once the soil arrives at that receiving site, interim sites without some form of ECAs may not be considered as good option. A simplified and fast-tracked approval system for interim sites should be developed. This could be accomplished with a detailed checklist of required documentation with the application and model documents/forms to be followed.
- The haulers who actually move and deliver the soils appear to be overlooked in the policy document and the overall Framework, and yet it is the haulers that owners and receivers rely on to manage the actual movement and delivery of the soil. Further, it is the haulers that would have to be relied upon to support the tracking of the soils. This leaves the question of why is there no identified responsibility for the haulers who actually seem to have the bulk of the control over the process. Any form of enforcement activities to be enacted by the MOECC will need to account for the responsibility often laid on the haulers.
- There is some emphasis on encouraging better planning; however, the document also seems to identify many different agencies/ministries that may have to be involved in that planning. If multiple parties are required to be involved in approving or agreeing to soil management plans (which could include the use of interim sites), the logistics of soil planning may be too encumbered to support timely project delivery and owners will again choose the landfilling route as opposed to looking for alternative reuse options. The number of parties involved needs to be streamlined to effectively support project planning [reinforcing the need for a well-defined process flow-chart identifying the paths to be followed under specific conditions and situations, Regulations to be met and the Regulatory bodies having jurisdiction].
- Similarly for potential interim processing or treatment sites, if the mechanisms for getting these sites set up and approved (i.e., the ECA process or other implemented via new Regulation) cannot be done in time to meet a project delivery schedule it will not be considered a valid option by source site owners. The management/regulation of the process needs to consider how it would support the schedule of a construction project from conception to completion. If the identification and “approval” of alternate re-use or disposal options cannot be completed in a timely manner, it will not likely be done.
- The Framework document notes the regulation would specify minimum controls for the interim sites to ensure it does not result in unacceptable impacts. It is not known what these controls may be, and how much flexibility there could be in the implementation of

the controls based on the quality of the stockpiled material. If the controls do not consider the material quality and treat all stockpiled material as if it could be contaminated, the overall cost of implementing the controls could be an impediment to establishing a temporary or interim storage site. Flexibility for storage times on interim sites should be available through notification or applications to the MOECC and municipality.

- The policy indicates it will consider approaches that would encourage municipalities to potentially lead the identification of and/or establishment of excess soil storage sites. Action #6 of the Framework identifies municipally established industrial areas as promising locations for establishing interim sites and promoting local re-use of excess soils. This concept is good and it would likely make the use of an interim site less encumbered and more attractive as an option – but again, the responsibility for the stored material needs to be removed from the source site owner once accepted on-site when it goes to an interim site, ensuring proper and diligent acceptance, handling and management of the soil once accepted (much like the responsibilities on permanent receiving sites).
- Note that it will be critical to address how to avoid having interim sites become indefinite or permanent sites. For example, what if conditions change such that the receiving site identified in the soil management plan is no longer able to receive the materials or is not able to do so within the prescribed time period?

4. Receiving Sites

Receiving sites are considered as the permanent location for soils, as opposed to interim sites, where the excess soil is only stored for a defined period of time before being relocated to a permanent final site for re-use/placement. Section 5.3 of the Framework document deals with Receiving Sites.

Action #7 identifies MMAH and MNRF to consider amendments to legislation to remove restrictions on site alteration bylaws in conservation authority regulated areas. ONEIA supports removing these restrictions as an important step to help remove inconsistencies with the Conservation Authorities Act that often paralyzes action; however, protection of sensitive areas, wetland and floodplains must be considered in removing restrictions.

There are some concerns that possible changes to “allow municipalities to regulate site alteration and placement of fill within their municipality” will result in further off-loading of responsibility for compliance and enforcement to under-resourced municipalities from MOECC. Enforcement activities should remain with the MOECC and clear examples of by-laws for municipalities to follow should be developed and implemented by MMAH. Clear consequences for those operating outside the Framework and the policy should be established.

Action #8 is based on the development of educational materials by MMAH and MOECC in receiving sites and municipalities for developing and updating by-laws. ONEIA is supportive of increased education and educational materials with improved municipal legislation to guide the proper, environmentally responsible operation of receiving sites.

- In particular, we believe it important that receiving sites operate with considerations for environmental and societal risks/impacts that could be created by the operations. A method to test, review, track and document these considerations need to be established (such as a stream-lined and simplified Environmental Assessment process).
- In addition to the issues highlighted to be included in educational materials, details regarding compliance and enforcement should also be included. Receiving sites should clearly understand what they are legally able to receive and what they are not, as well as the penalties associated with improper receiving practices and the receipt of materials which they are not permitted to receive.

The idea of the MMAH and MNRF exploring legislative and non-legislative ways to improve enforcement within their respective Acts is strongly supported by ONEIA provided the improvements are implemented in concert with and to enhance what is covered in the Environmental Protection Act [this supports the need for a detailed flow-chart to be established outlining regulations to be followed and regulatory bodies to be consulted].

Action #10 is based on MNRF to consider requiring record keeping for fill being brought to licensed and permitted aggregate sites. Beyond record-keeping and reporting, inclusion of increased awareness of compliance and enforcement is encouraged to ensure aggregate sites clearly understand what they are legally able to receive and what they are not, as well as the penalties associated with improper receiving practices and the receipt of materials which they are not permitted to receive. Record keeping could be enforced through sector compliance audits. Further, exemptions should be considered and developed for the use of active aggregate sites be used for interim soil storage sites, if desired.

With respect to Action #11 for OMAFRA and MOECC to develop best practice guidance for importation of fill onto farmlands, ONEIA supports increased education and documentation to help farmers make proper decisions on importing excess soil. In addition to the information noted to be included in guidance documentation, we encourage the inclusion of guidelines on how to review and understand soil testing results to ensure those tests (1) meet MOECC guidelines for analysis; and (2) indicate that soils are acceptable for receipt on the owner's property.

Further, it is recommended to add *“including what is acceptable for receipt and what is not, as well as the penalties associated with improper receiving practices and the receipt of materials*

which they are not permitted to receive” to the current first sentence in the last paragraph of the detailed explanations of Action #11.

5. Technical Standards

The Technical Standards will be the most utilized tool within the proposed new Framework and Policy, and as such, **may be viewed as the most important item to get right the first time**. Elements of an overall Technical Standard are provided with the original BMP document; however, fine details need to be established.

ONEIA recommends that flow-chart method be developed that will identify the various conditions and situations that may occur with excess soils, and what regulatory body, guidelines, standards and legislation, that the situation falls into. This would create an easy to follow pathway that would allow for focused discussions at a number of junctions within the flow-chart process. It may also prevent lengthy and costly regulatory reform. It is anticipated that this could be one of the multi-ministry tasks and reviewed by the ESSEG, once formed.

ONEIA agrees and fully supports the Policy Needs and Actions #12, #13 and #14 within the Framework document.

Quality standards (concentrations not to exceed) and a minimum analytical suite to be tested needs to be established, whether it is referenced to O. Reg. 153/04, a sub-set of the Table Standards for O. Reg. 153/04, or a completely new set of standards. Comparison tables are the easiest method for the industry to utilize; however, the Standards within the Tables need to consider various situations that soil may be considered within the Province, as well as being derived from sound science, risk-based and protective of human health and the environment.

Detailed discussions with the technical specialists representing the contract analytical laboratories should be part of the formulation of the Standards and analytical suites/packages, detection limits etc.

When understanding what standards/criteria should be applicable in evaluating soil quality for any site (at the source, interim site or receiving site), it will also be important to understand how those standards can be applied across a volume of soil – especially if this will be linked to a “verification” process the generators (source sites) must complete. Also it will be critically important to define the thresholds and analysis protocols to determine that there are “no putrescible materials or soluble or decomposable chemical substances” in inert fill so there is no margin for error or confusion. Further issues/questions that come to mind include:

- What frequency of sampling is appropriate for assessing soil quality?
- Can composite sampling be used?

- Can statistical analysis be applied to assess soil quality as a whole as opposed to the usual per sample pass/fail method?
- Can naturally occurring parameters such as metals and PHCs (i.e., F3a/F3b ratios by Kelly-Hooper methodology) be assessed via additional means?, and
- Are there differences between pile samples versus in-situ samples?

Monitoring requirements (analytical suites, frequency, QA/QC) for receiving sites as well as interim sites should be established and harmonized so that comparisons between sites can be made, and the requirements are easily understood for the QPs and others within the industry. Having said this, the requirements should have some inherent flexibilities to account for varied situations. Flexibilities could be identified within the flow-chart pathway to be established (i.e. Greenfield versus formerly developed industrial property within the Niagara escarpment protection area). There is also an identified need for further consideration of how to develop guidance for smaller, low risk sites as opposed to the larger more complex ones.

The above is also tied into the MOECC and the PEO/APGO providing some information more broadly on what they have reportedly been working on for “technical guidance” the last couple of years. This has yet to be shared and vetted publicly by the QPs and various stakeholder groups. However, integrating the previously prepared and not yet released guidance tools with the new requirements of the Framework should be carefully considered to prevent any confusion within the industry. Again, we cannot stress enough that the technical guidance tools and standards need to be clear, practical, flexible and effect based.

6. Planning for Re-Use

ONEIA agrees with Action #15 of the Framework which identifies encouraging Municipalities to develop soil re-use strategies; however, questions around how this encouragement would take place are raised, and whether a prescriptive Framework or model will be created to promote consistencies across the province with considerations for the varying situations that may occur between different areas (i.e., GTA versus smaller centres). ONEIA believes that MMAH has a significant role in assisting municipalities to relate excess soil considerations to official plans and planning.

Extensive identification of management of excess soils for large scale developments subject to the EA process and the definition of “large” scale (Action #16) needs to be further defined along with the concept of scalability for the size of projects so that consistent application of the Framework can be realized. This concept will also assist in the application of many smaller scale sites.

ONEIA is of the opinion that incentives for local reuse of excess soils through matching services and interim sites should be established. Municipally owned and operated facilities (or contracts

with privately owned/operated facilities) could be established for infrastructure projects, and for other exercises such as clean-out of stormwater management ponds etc.

Industry wide uniform standards for application of the Framework across infrastructure projects, generally initiated by municipalities need to be established. Uniform standards will become the “normal” and adopted within the industry preventing implementation of patch-work standards that will be applied differently between municipalities.

The MOECC support for pilot-scale projects, identified in Action #17 of the Framework, will be well received and will need to be a focal point for program improvements and within the Framework. Publically accessible details, finding and recommended improvements from the pilot scale projects should be established.

7. Integration and Implementation

How this policy is implemented is key to its success. Alignment and harmonization of standards for the various types of sites is also key. As noted in the proposed Policy Framework document, requirements by receiving sites may be governed by a variety of guidelines, regulations and legislative bodies. It should be a priority for the province and the stakeholder working groups to ensure alignment of standards between source, interim and receiving sites. Further, a challenge experienced in the enforcement of other regulations has been the consistent application of the policy as it currently stands. It is therefore important to include, as part of the proposed policy Framework, mechanisms to ensure standard, clear and consistent communication of the regulation, guidelines and associated standards established and enforced by MOECC.

While the proposed policy and the general approach are most promising and reflect the consultations to date, the specific details have yet to be determined. It is necessary to be protective of the environment but in a pragmatic and achievable way and the details of implementation will make the difference. It is well known that the policy review group at the MOECC heard the need for stronger direction and clear enforceable rules, but the details of how this should be accomplished still need to be determined.

This is necessary for a sustainable approach to soil management and in the context of achieving climate change objectives to reduce CO₂ emissions leading to GHGs. Implementation must be pragmatic and as discussed in the Framework document, consideration of cost as well as environment and risk is essential. In addition, if implementation does not provide comfort to communities and the municipalities that are responsible for them, they will be reluctant to accept and re-use soils. If the implemented Framework is onerous and difficult to assign responsibility throughout the process, site owners (excess soil generators) may still be attracted to landfill disposal over reuse, as it is still an inexpensive alternative. Unless government establishes a mechanism to discourage landfill of non-contaminated soil, it will remain an attractive option.

Viable non-landfill options of excess soil management need to be promoted, incentivized and available.

Affected communities, particularly when the receiving sites are in a different jurisdiction from the source site must have a high level of confidence that would be provided by a clear and transparent process with solid quality assurance and with a strong mechanism for enforcement where necessary. This process for **effective enforcement is an integral part of the implementation strategy.**

Implementation Considerations/ Requirements

In the Integration and Implementation Section of the Framework document, there are several key recommendations. However, the actual implementation goes beyond these recommendations as presented in the following discussion.

The policy document notes the need for an integrated multi-Ministry Framework for soil management. This also requires municipalities, Conservation Authorities and others to be subject to the integrated approach. The document also notes several ways to achieve this including through regulations, guidelines and standards. In all cases, there is a need for a consistent, integrated approach to work properly and to create the necessary level playing field. There is a list of those potential changes to Municipal Act, Regulation 347, the Planning Act, the Aggregate Act to name a few. The next step is determining which changes and implementation details should proceed.

For example, the Framework document refers to regulation particularly around the source site but it is not yet known what kind of regulation would be the most effective and implementable, and what it will address. Unfortunately even with best intentions, regulations and standards can create unintended consequences that undermine the opportunity for improvement and may and likely will discourage uptake within the industry. A list of existing legislation is provided that may need to be amended for consistency and to have an integrated approach. The details around this need to be carefully considered.

It is commonly known that within the industry there has been frustration over many years about the definition of waste and inert fill and it is promising to hear that reviewing the definitions within the overall concept of excess soils management is being considered (refer to further discussion in Section 9, of this document).

It is generally agreed that the guidelines as set out in the BMP were not sufficient to affect change. While MOECC must develop clear direction for testing and sampling, these must be pragmatic (refer to Section 5, of this document). Guidelines are easier to implement than regulations and other legislative instruments but have no teeth unless "adverse effect" has been demonstrated. As such, guidelines may not address many problematic situations and those

where the quickest, easiest and/or cheapest alternative for management of excess soils is not always within the intent of the Framework and BMP. All implementation measures need to address this possibility, as well as consider unintended consequences.

Further, implementation measures must be practically achievable with standards and testing requirements that are both time and cost sensitive, as well as being reasonable from a technical perspective [again refer to Section 5 of this document]. For example, what level of testing would be required and how would this be enforced with receiving sites? Also, how would the responsibility for finding a suitable receiving site and tracking to make sure it is suitably sent and received be assured? While guidelines would make this easier, it also leads back to the questions behind this policy review with assurances to the public that soil is being properly managed. How can this be achieved to ensure that the public confidence is restored?

Similarly with tracking, the system has to provide for tracking materials from the source site and verify that it reaches the receiving site (whether it is the final destination or an interim site).

And lastly, municipal site alteration bylaws and municipal permits must be consistent with the Province's approach and reflect provincial guidance, guidelines and regulatory framework.

In the Framework document, there are two key strategies that will assist in achieving the right approach. The first Strategy includes establishing the proposed Soil Stakeholder and Engagement Group (as set out in Action #20). This Group and possible sub-groups are key to making sure questions and details around policies, technical guidance etc. are properly addressed and answered. This group needs to consist of very knowledgeable industry people and professionals both from technical and business perspectives (and relevant others as discussed in the document) as well as representatives of the affected Ministries and Municipalities, Conservation Authorities and related Agencies. The formation of this group should move forward as a priority, as quickly as possible. Regulations and other such approvals take time and the sooner proposals can be agreed to, the sooner real implementation can occur.

The second Strategy is implementing the Framework with an integrated approach. An integrated approach is necessary in the following areas:

- The entire process from considerations at the source site (testing, characterizations, etc.), planning for the soils re-use and/or placement, tracking and then verifying ultimate placement location has to be an integrated one to work properly. Strong mechanisms for enforcement, as required, need to be built in.
- As set out in the Framework document, there needs to be an integration and alignment of the responsibilities and legislation of the various involved Ministries (i.e. multi-Ministry approach that has been discussed); i.e., existing and new proposed regulations from differing Ministries need to be integrated with cross-referencing where possible. New and

existing guidelines needs to be consistent within MOECC and other Ministries and Agencies in the province [the creation of a directional flow chart for assessing various situations will assist here]. There must be consistency throughout the provincial government and various Ministries. ONEIA believes that the Ministry of Municipal Affairs and Housing (MMAH) is a key Ministry to ensure implementation. However, questions such as what role MMAH will play in terms of legislation changes, use of building code to ensure soil plans, level of guidance to their municipalities, etc. come to mind. Inclusion of excess soil considerations to the Building Code and/or the Planning Act will also assist in the overall implementation. Clearer identification of roles and responsibilities throughout the process needs to occur along with ensuring municipalities have the appropriate tools to implement this proposed approach.

- Integration should also be a fundamental consideration around planning and development with the infrastructure plans in the upcoming years. With the plans for growth and new development in urban areas with the intensification pressures, finding strategic sites where planning objectives can be accommodated to place the excess soils to achieve the greatest benefit should be considered paramount.

8. Reliance on QPs and Qualifications

The term “Qualified Person” (QP) without specific and defined qualifications and training based certification can be considered as subjective. The current regime in Ontario does not have a robust certification system to recognize, identify and discipline those identifying themselves as QPs. The current system of QPs stems from Ontario Regulation 153/04 as amended, respecting Brownfields and Records of Site Condition (RSCs). In order to be considered as a QP, a number of criteria need to be met, such as years of appropriate and related experience and professional status (i.e. P.Eng., P.Geo.). Further, to file an RSC, a distinct password is issued for use in accessing the filing process with the MOECC. The education and experience of the practitioner needs to be supplied to the MOECC prior to receiving the password. For the preparation and submission of Risk Assessments (RAs), further qualifications must be provided to the MOECC for recognition.

The issue of excess soil management is distinctly different from brownfield redevelopment, remediation and risk assessment; however, the reference to QPs by the MOECC has appeared casual without any direct input from the QP community. The BMP document defines a QP as per Section 5 of the O. Reg. 153/04; however, the use of a QP is only “encouraged.” In the Framework document, QP is not defined, and the Framework is based upon the mandatory use, certification and sign-off by QPs in many of the components of the Framework.

The current QP regime in Ontario has been subject to scrutiny within the industry and there appears to be a lack of confidence shown on the professionals who classify themselves as QPs. There is still debate within the O. Reg. 153/04 definition on whether this nomenclature is

sufficient or needs to be adjusted to better reflect properly qualified practitioners. Further, it has been identified as a priority for the MOECC to return the public confidence of the excess soil management in Ontario. Like any profession and vocation, there are good and ethical individuals, and then there are those who can be easily swayed to take short cuts and not follow the established rules to the full extent, especially where a competitive advantage can be gained or where financial pressure can be applied. One can become a QP for O. Reg. 153/04 without any specific training or experience with management of excess soils. Without ensuring that qualifications are screened and those acting under the title of QP are registered and held accountable for ensuring the highest standards are maintained and the responsibilities of the QP are ethically followed, the reliance on the QP system and the confidence desired by the MOECC and the public will be at risk of failure.

The Framework document identifies that the new Regulation will define what a QP is and may draw upon the definition of QP in O. Reg. 153/04. It is promising to hear that the MOECC intends to reach out to the professional bodies (PEO and APGO) that govern QPs to further formalize this process with an intention to strengthen public confidence in this system.

The issue of training and certification of QPs for operating within the excess soils management Framework and Policy is only a part of the overall QP needs for Ontario (also within O. Reg. 153/04, where the QP stems from). However, MOECC derived and approved training work-shops with certification and registration upon completion will be a must and could be implemented with relative ease. The work-shops could provide detailed expectations on requirements of supplying QP services for excess soil management. The training sessions could be delivered periodically (more frequent for the first two years and then semi-annually thereafter, or as demand is identified).

Cost for the developing and delivering the training and certification could be recovered through the registration, while maintenance of a master list of approved QPs could easily be achieved through a web-site and annual registration. There are industry established training operations that could be approved to arrange and deliver the training, similar to MOECC approved wastewater operator training, as an example.

Further development of a certification and registration body for QPs in Ontario (ESAs, RAs, RSCs, and excess soil) could follow a model similar to that established in British Columbia with the Society of Contaminated Sites Approved Professionals (CSAP) [<http://csapsociety.bc.ca/>]. CSAP is an independent organization mandated by the Provincial Government through the BC Ministry of Environment that credentials professionals to review environmental certification applications and represent the best interests of government, industry and citizens within the Province of British Columbia. The Society credentials its members and recommends they be appointed to the Ministry of Environment Roster of Approved Professionals (APs).

It is understood that the start-up costs for the association were supplied from government supplied seed money, and has become self-sustaining through member annual registration fees and training opportunities. Discipline within this system is derived from complaint based information and compiled before being sent to the governing professional body (i.e. Engineers/Geologists) for appropriate enforcement. This is similar to successful models established in other jurisdictions.

As extensive reliance on QPs has been identified throughout the MOECC's BMP (encouraged) and now the Framework documentation (mandatory), the need for training and certification is now evident. The Framework document identifies the Roles and Responsibilities of QPs as to "provide accountability and credible advice consistent with provincial direction and professional practice on technical matters," and to "provide quality assurance and consistency in advice." **Without training, certification and registration of appropriately experienced professionals (QPs), consistency cannot be established and maintained. Further, without the MOECC and professional body developed "guidance," consistency and enhanced public confidence on QPs work and opinions will not be attained.**

9. Definitions and Regulation

With respect to definitions in the Framework document, Qualified Person was not specifically defined, although the reference to the BMP and O. Reg. 153/04 were made where QP was defined.

Clear definitions of the types of material that will be covered by the policy and/or planned new regulation are important, as well as the definition of what a "source site" can be considered (e.g., whole project area vs one property boundary, etc.).

The definition of soil needs to be refined to cover other materials that could also be managed under this policy and currently fall outside any clear process (e.g., excavated sediment, lake-fill material, tunnel spoils, and "inert fill"). The definitions for the policy also need to consider how "contaminated soil" is defined since material that may not be appropriate for one location, may still be acceptable for another.

Need to clearly define what a "larger" and/or "riskier" source site is, as mentioned on pages 16 and 25 of the Framework document.

While there is reference to the need to "help define when excess soil is a "waste", including following treatment at a processing site", this aspect is not included under 4.2 Actions to be Taken. We believe clear guidance around the definition of "waste" is a critical component of any new policy Framework.

While Proposed Action 1 on page 29 of the Framework document identifies development of a new Regulation under the EPA requiring SMPs being certified by a QP will be developed with the Short Term (2016). ONEIA is supportive of a new regulation; however, in doing so, the QP system will need to be overhauled. It is noted that regulation will be needed in order to support effective enforcement rules and tools. As mentioned previously, ONEIA feels that effective enforcement is an integral part of the implementation strategy.

10. Framework Implementation – General Priorities and Timelines

The MOECC Framework points to establishing a new industry standard and approach although the exact details will be shaped by a new *Excess Soil* Stakeholder and Engagement Group (ESSEG). As proposed, this group will be comprised of a cross-section of representatives. To support implementation and policy development, the proposed Framework recommends utilizing relevant organizations to help ensure that education and outreach is undertaken.

What is needed within the ESSEG is the formal creation of dedicated Working Groups that would report back to the ESSEG. The Working Groups would be tasked with specific roles and deliverables such as taking the Priorities and Timeline Proposed Actions described in Section 6.0 of the Framework and create the needed implementation plan and timetable. With this focus, resources could be determined, assigned, coordinated and a detailed work plan put in place, communicated and stewarded to. Accountability aspects and follow-up will be critical in the formulation of working groups and the ESSEG.

Consistent with good engineering project management and business approaches, it is recommended that the ESSEG and dedicated working group create and oversee for the program a detailed Gantt chart model based on the Proposed Action general timetable as outlined on page 29-30 of the Framework document. It is noted that “longer term” in the timeline chart on page 29 of the Framework document need to be defined, and where possible, definitive timelines should be identified. This will be a primary mandate of the ESSEG and working groups.

The proposed Gantt model would include currently underway items, possibly re-prioritized based on urgency experienced within the industry as well as co-ordination with the other more regulatory related actions programs in other jurisdictions both in the short and longer term. More specifically:

- Provide coordination and oversight of required implementation plan and timetable for excess soil policy Framework implementation;
- Develop required new industry Code of Practice (COP) based on MOECC best management practices, to be confirmed through finalization of EBR review;

- Promote new technical standards and training elements to support COP objectives, in conjunction with MOECC approval, and fit with emerging regulatory changes, particularly for source sites;
- Examine and recommend tools to assist the training and possible certification of QP (Soils);
- Where necessary, assist in the development of required municipal tools to facilitate approvals for interim soil depots and the adoption of municipal soil by-laws which are consistent with the Excess Soil Best Management Practices Guide;
- Put in place conditions to encourage pilot testing of new protocols, innovative technology and data capture techniques (i.e. truck tracking); and
- Pursue the needed innovation tools to create and sustain a “Smart Regulation,” and establish a new industry standard to beneficially reusing excess soils effectively and sustainably.

Framework Implementation – Specific Priorities and Timelines Comments

With specific reference to the preceding general comments and the proposed Actions #1 to #21 on pages 29 and 30, the following comments are presented as constructive, direct feedback.

Again with the assistance of the ESSEG and dedicated Working Groups, it is recommended that the following action items be re-prioritized and be more clearly defined in terms of their exact timetable and expected deliverables:

- 1) Action #4 – Proposed QP draft Guidance documentation and testing requirements be released ASAP to properly integrate with Action #1;
- 2) Action #13 – Excess soil testing requirements should be moved from longer term to a short term 2016 priority (tied to preceding short term point);
- 3) Action #2 – MMAH and MOECC linkage to building permit issuance should be moved from longer-term to shorter term and more broadly referenced through standardization of municipal site alteration by-laws that would naturally fit with permits and fees involved locally with moving excess soils within and between municipalities. A model excess soil management by-law (similar to sewer-use) may be considered.

As stated previously the key to Priorities and Timelines is the creation of an accountable program within the ESSEG to further refine, co-ordinate, implement and steward the identified proposed action items on pages 29 and 30 of the Framework document.

Without the immediate establishment of the ESSEG and Working Groups with defined mandates and Terms of Reference, the time for the MOECC to promulgate regulations and standards to support Excess Soil Management in Ontario will be delayed further creating confusion and difficulties for work that is already in the planning and execution stages for the remainder of 2016 and early 2017.

11. Response to Questions Posed

As part of the proposed policy framework document, the MOECC invited additional opinions and comments through seven (7) general questions. Answers to the specific questions are as follows:

Question 1): *Does the proposed policy framework include adequate policy tools and actions to improve the management of excess soil in Ontario? If not, what additional tools or actions would you suggest?*

The tools highlighted in the proposed policy framework appear to meet the needs and intent of a comprehensive excess soil management regime. However, the need for qualified industry input and expertise in the development of sampling and testing standards cannot be overstated. To this end, the province should provide greater definition in the identification of stakeholders who would be engaged in the various working groups to ensure adherence to the guiding principles for decision making with respect to the excess soil framework, specifically to ensure that:

- *“Approaches should consider and integrate with existing business practices of the public and private sectors, and should support development of industry-led programs for sustainable re-use of excess soil.”; and*
- *“Approaches should be science and evidence-based”*

Question 2): *Are you aware of examples of existing best practices from other jurisdictions that may be helpful to Ontario that you would like to share?*

The ONEIA members have observed a number of practices from other jurisdictions, such as:

- British Columbia for the system of QPs (APs in that area, and touched upon in Section 8 of our response);
- CL:AIRE from the U.K. for classifications and definitions and use of an industry/government partnership and their Code of Practice;
- the Dutch model for systematic, transparent and integrated processes that limit liability and provide for effective operation of interim sites; and
- Quebec for an integrated approach that prevents landfilling.

It is understood that jurisdictional reviews were completed during the contracted informational study that has most likely identified these concepts. It is respectfully requested that the contents of this study be made available to the stakeholders group, possibly through the ESSEG.

Question 3): *Which proposed actions do you see as a priority?*

Of the proposed action listed in the draft policy framework document, there should also be a set of concurrent priorities that focus on improving the management of excess soils currently being generated in Ontario, while a more robust and comprehensive excess soils management regime is established and promulgated, e.g., Proposed Action 4) MOECC to work with Qualified Persons and other stakeholders as appropriate on existing excess soils management guidance.

Question 4): *What role do you see for you and your organization in implementing the proposed framework?*

As the voice of the Ontario environmental industry for nearly 25 years, we feel that our comments represent the interests of the industry. Having always advocated for public policy based on sound science that benefits and protects the environment as well as the public, it is important to ensure the involvement of qualified individuals to participate in the establishment of a realistic, reliable and workable framework. Examples involve chemists in matters pertaining to chemistry and chemical principles, engineers in matters pertaining to engineering, and planners and lawyers dealing with their areas of expertise etc.

Question 5): *What role do you see for industry and non-governmental organizations in supporting delivery of excess soil programs for soil matching, tracking and promoting innovation, etc.?*

Private sector stakeholders, with appropriate qualifications, play an important role in the development of appropriate policies and standards governing excess soils management. For example, it is essential that the MOECC engage private sector laboratories and chemists to establish sampling, analysis, reporting and quality assurance protocols to ensure the integrity, validity and scientific defensibility of soil data generated in to support the standards. Conversely, QPs, lawyers, and contractors need to be included in the program support where appropriate. ONEIA is one of the few groups that have a wide range of diversity of expertise and perspectives that would be valuable to assisting the supporting various programs.

Question 6): *How can the province best continue to engage you or your organization and the public as it moves forward?*

The provincial government needs to identify an inclusive list of appropriate stakeholders (ESSEG) in the industry, who are qualified to speak to the various elements that make up a robust and comprehensive excess soils management plan. ONEIA has many knowledgeable and committed professionals available to be called upon. It is the general consensus in the industry that this stakeholder group needs to be established as soon as possible and tasked with undertaking consultation activities in order to get the process moving.

Question 7): *Do you have any other comments or feedback?*

It has been highlighted throughout the proposed policy framework document that the province intends to engage industry and non-government organizations in the development of science and evidence-based policies and standards to support a comprehensive excess soils management program in Ontario that ensures the protection of the public and the environment, and enhances opportunities for the beneficial reuse of excess soil. It is important that input be provided by individuals or groups who are ***qualified*** to do so. A major part of the work in the environmental field requires professionals who are experienced with chemistry and chemical principles. It is important to engage professional chemists¹, whose competencies and Scope of Practice includes the application of chemical principles to environmental work. This argument also applies to Geoscientists and Geological Engineers, Lawyers and Planners, Contractors etc. The scope of the issues with excess soil management requires an integrated team approach in order to overcome the problems we have seen in Ontario.

¹ A professional chemist in Ontario is defined by membership in the Association of the Chemical Profession of Ontario (ACPO) which binds the individual by a Code of Ethic and entitles them, through an Act of Parliament to use the title Chartered Chemist (C.Chem.)

12. Priorities Moving Forward

Based on the detailed review of the proposed Framework, ONEIA offers the following summary of our view of Priorities moving towards establishing a new industry standard:

- Priority 1A** – Establish the ESSEG, as quickly as possible with a mandate and Terms of Reference for the group.
- Priority 1B** – Bring the managing structure for the multi-ministry excess soils stakeholder group together as soon as possible and quickly put in place a prioritized initial work plan to get started.
- Priority 2A** – Establish the Technical Standards for use with the Policy and associated Guidelines Framework.
- Priority 2B** – Commence with the process of redefining the definition of waste, and related terms within O. Reg. 347, as amended and the Environmental Protection Act.
- Priority 3** – Review the present process for determining QPs and develop the Technical Guidance including the QP training/certification and explore the possibility of establishing a third party oversight body (i.e. such as CSAP in B.C.)
- Priority 4** – Engage MMAH for implementation of the Policy and the municipal tools (model by-laws, example documents, Building Code, Planning Act, etc.).
- Priority 5** – Develop and deliver municipal and industry outreach education programs on the currently released MOECC Best Management Practices.

13. Closing Statement

ONEIA applauds the effort and commitment shown in the MOECC led Policy Framework development for excess soils in Ontario. It is our general opinion that the MOECC has “got it right,” but there is still much work to be completed in establishing the fine details of the Policy. It is also pointed out that the Framework only outlines the process; and that the industry is still waiting for definitive actions, processes and rules. Getting this implemented in a timely manner should be the highest priority for this Policy Framework, which starts with the formation of the ESSEG and multi-ministry working group.

The implementation plan should be tied in with land use policy at the municipal level with the critical assistance of the MMAH. Industry representatives that have been working with you to date have the first-hand understanding and the expertise in the Brownfield situation, which many of the issues are similar in nature. We look forward to continuing working with you to ensure the tools that are developed are workable and enforceable, and that this initiative moves forward in an effective and pragmatic way.

14. Acknowledgements

This response was proudly prepared through the volunteer efforts of the following members of the Excess Soils Working Group of the ONEIA Brownfield Advocacy Sub-committee. We would like to acknowledge the dedicated contributions of the following individuals in the preparation of this document:

Krista L. Barfoot, PhD, C.Chem	Brownfield Redevelopment Specialist, CH2M
Alan J. Durand	AJ Durand Consulting Soiil Residential and Civil Construction Alliance of Ontario
Ellen Greenwood, M.U.P.	President, Greenwood and Associates
Greg Jones	Managing Director, Communications and Public Affairs Terrapure Environmental
J.P. Marini	Terra Nova Environmental Services Inc. ONEIA – Co-Chair of Excess Soils Working Group
Taras (Terry) Obal, PhD, MCIC, C.Chem	Director, Scientific Services and Development Maxxam Analytics
Steven Rose, P.Eng., P.Geo.	Malroz Engineering Ontario Society for Professional Engineers
D. Grant Walsom, B.A.Sc., P.Eng.	Partner - XCG Consulting Ltd. ONEIA – Vice-Chair Board of Directors – Co-Chair of Excess Soils Working Group Canadian Brownfield Network – Vice-President