

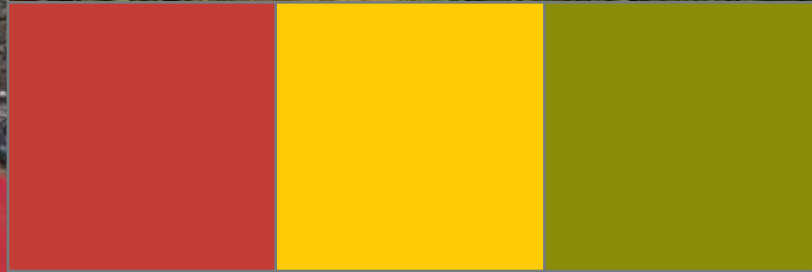


RESIDENTIAL AND  
CIVIL  
CONSTRUCTION  
ALLIANCE OF  
ONTARIO

An Independent Study Commissioned by



**Constructing Ontario's Future**



# Best Management Practices for Handling Excess Construction Soils in Ontario

Version 1



## RCCAO

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The Residential and Civil Construction Alliance of Ontario (RCCAO) is composed of management and labour groups that represents a wide spectrum of the Ontario construction industry. The RCCAO's goal is to work in cooperation with governments and related stakeholders to offer realistic solutions to a variety of challenges facing the construction industry and which also have wider societal benefits. For more information on the RCCAO or to view copies of other studies and submissions, please visit the RCCAO website at [www.rccao.com](http://www.rccao.com)

RCCAO members include: Carpenters' Union • Greater Toronto Sewer and Watermain Contractors Association • Heavy Construction Association of Toronto • International Union of Operating Engineers, Local 793 • International Union of Painters and Allied Trades, District Council 46 • Joint Residential Construction Council • LIUNA Local 183 • Residential Carpentry Contractors Association • Toronto and Area Road Builders Association

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November 2012

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## Executive Summary

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Over the last three years, the Residential and Civil Construction Alliance of Ontario (RCCAO) has worked with government and industry stakeholders to encourage the beneficial reuse of “clean” excess construction soils, generally referred to as “fill” in Ontario. Ongoing stakeholder consultation identified the need for RCCAO to clearly communicate and quantify all of the issues involved in improving the handling and management of excess construction soils and materials in Ontario as well as the need to provide pragmatic direction and solutions. A key consideration involved was the reduction in unsustainable landfilling commonly referred to as “dig and dump.”

In April 2012, RCCAO formed a joint industry and government steering committee to develop a recommended Best Management Practices (BMP) for Handling Excess Construction Soils in Ontario. This initiative was intended to provide a workable interim process to clarify and address recent regulatory change issues put forward by the Ministry of the Environment (MOE), which focused on larger, commercial, brownfield sites under O.Reg. 153/04 legislative amendments.

An unintended consequence of the regulatory changes made in 2009 was confusion and negative project impacts regarding the movement and handling of “clean” excess construction soils, particularly from smaller municipal, residential, and commercial projects.

The industry BMP process was developed in consultation with the MOE, and is intended to complement the current MOE draft *Soil Management – A Guide for Best Management Practices* document. RCCAO’s efforts to develop a BMP have drawn heavily from a very successful joint government/industry voluntary Code of Practice (COP) approach recently developed in

the United Kingdom by an organization called CL:AIRE (Contaminated Lands: Applications in Real Environments).

Fundamentally, the BMP follows currently acceptable site and environmental assessment approaches in Ontario and is in compliance with local regulatory requirements. The main objective is to responsibly identify excess soils at a source site or project that are a “non-waste” and handle these soils accordingly, based on future beneficial reuse either at the Site of Origin (SO) or at other acceptable receiving locations. The approach is risk based and is consistent with regulatory requirements of producing no adverse effects to the environment.

The BMP is based on a transparent process that produces a Materials Management Plan (MMP) for the handling of non-waste excess soils tied to the remediation and/or development plans for the site involved. The MMP includes a formal excess soils tracking system, a Verification Plan (VP) and any required contingency plan components. An independent Qualified Person (QP) reviews the MMP and, if satisfied, signs a Declaration confirming excess soils are not waste based. This approach encourages the beneficial reuse of excess “clean” soils and facilitates the further development of Soil Recycling Centres (SRCs), soil matching capability at excess soil donor/receiver sites, and other progressive environmental initiatives in Ontario. This in turn leads to a more timely and cost-effective infrastructure development and renewal process while saving limited and dwindling landfill capacity in an environmentally responsible manner.

Further details on the BMP and the supporting reports and studies on the issues and challenges in responsibly handling excess construction soils in Ontario are available online at [rccao.ca](http://rccao.ca).

## Foreword by RCCAO / Disclaimer

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### Foreword by RCCAO

The Residential and Civil Construction Alliance of Ontario (RCCAO) has identified the complex issue of dealing with excess construction soils and materials as a major challenge in dealing with new developments and infrastructure projects in Ontario. Continuing uncertainties with regard to applicable regulations and practices have resulted in confusion that either slows down construction projects or results in large volumes of excess construction soils being unnecessarily and expensively disposed of in landfills by default.

The unnecessary disposal of “clean” excess construction soils not only leads to additional project costs at the expense of real infrastructure capital investment, it also removes limited and dwindling landfill capacity in Ontario.

Beyond these financial considerations, in environmental terms, the disposal of excess construction soils is not a sustainable practice. Environmental issues range from truck-related health concerns to safety and greenhouse gas emission concerns.

This current overreliance on “dig and dump” practices also inhibits the adoption of risk-based approaches and development of new technology applications for the clean up and beneficial reuse of excess construction soil at infrastructure development projects and brownfield properties.

RCCAO continues to examine the issue, working with parties in jurisdictions outside of Ontario to identify policy and fundamental changes to the current work process that can be applied to encourage the beneficial reuse of excess construction soils and materials both on- and off-site in a cost effective manner.

RCCAO and other parties continue to work with the Province of Ontario to address the proper handling of excess construction soils through a sustainability lens. This Best Management Practice (BMP) is part of that process.

### **DISCLAIMER:**

Interpretation and opinions of regulations and policies expressed in this report are not to be construed as legal advice. Any references to legal requirements are the responsibility of the reader and must be investigated by legal counsel and other experts in conjunction with the relevant Ontario government authorities.

## Acknowledgements and Background

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The basis of this BMP document was the escalating concern in Ontario over the handling of excess “clean” construction soils in Ontario. Over the years, various stakeholder groups dealing with this issue have been working with the different levels of government on appropriate and effective solutions to this concern.

In Ontario there are regulatory requirements for soils brought to Record of Site Condition (RSC) sites. As government policy and regulations evolve in this area the Ontario Ministry of the Environment (MOE), in consultation with several stakeholder groups, developed a draft document entitled *Soil Management—A Guide for Best Management Practices* (MOE BMP) dated April 19, 2012.

The MOE BMP focuses on providing guidance on how to manage excess soils at large scale construction projects and commercial fill sites. While the document provides some oversight in this regard, it does not provide guidance on how to manage these soils at smaller municipal and commercial construction projects. RCCAO’s draft BMP for Handling Excess Construction Soils in Ontario is intended to address these concerns. There is also further recognition that the fundamental approach in this BMP may be also applied with the consent of all parties involved at RSC sites where applicable and where all parties contractually agree, through reliance letters or other acceptable contractual mechanisms, to follow agreed upon BMP protocols as stated in the Material Management Plans (MMP) in the BMP.

Additionally, this BMP model approach focusses on beneficial reuse of excavated soils as a non-waste, both at the Site of Origin (SO) for reuse and for appropriate reuse at other locations and sites, including Soil Recycling Centres (SRCs), as they are brought on-stream in Ontario.

This BMP was developed based on stakeholder consultation and an ongoing jurisdictional review of regulations and best practices in other provinces and countries. The BMP draws heavily from the approach and practices developed recently in the United Kingdom by an organization called CL:AIRE (Contaminated Land: Applications in Real Environments). CL:AIRE is a respected independent not-for-profit organization in the United Kingdom that links government and industry with the intention of promoting a more sustainable and progressive future.

In 2011, CL:AIRE released their *Definition of Waste: Development Industry Code of Practice* (COP). This COP document includes the principles that through a voluntary process, excavated excess soils and materials can be responsibly categorized at their source as a non-waste and handled in an effective manner for beneficial reuse, either on the SO or at other approved locations. The culmination of this stakeholder consultation process was an excess construction soils workshop held September 21, 2012 in Vaughan, Ontario where a representative from CL:AIRE, Nick Willenbrock, provided an overview of the CL:AIRE model approach.



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Particular acknowledgement is made to the industry and government representatives who participated on the RCCAO Excess Construction Soils Best Management Practices Steering Committee and provided leadership and comment on the direction and initial draft versions of the BMP. The following Steering Committee members and organizations are recognized:

- Al Durand, Consultant and Lead Author
- Scott Butler, Ontario Good Roads Association
- Carlo De Gasperis, TACC Construction Ltd.
- Anthony Di Battista, Clearway Group
- Jonathan Fernandes, Ontario Ministry of the Environment
- Andy Manahan, RCCAO
- Craig Moore, Ontario Association of Demolition Contractors
- Karen Renkema, Marlene Yakabuski, Ontario Road Builders Association (ORBA)
- Phil Rubinoff, RCCAO, Laurier Homes



“Those who attended the RCCAO workshop were very impressed with the CL:AIRE approach. Now the hard work begins to put a practical system in place here in Ontario.”


—Andy Manahan, RCCAO



### Excess Construction Soils Workshop September 21, 2012 Toronto


The session featured Nicholas Willenbrock of British non-profit CL:AIRE, creator of an industry code of practice for excess soils. Pictured (from top left) is Al Durand (author of this report), Willenbrock, and Andy Manahan (RCCAO) addressing the participants and conferring with Ron Kanter of Macdonald Sager Manis LLP.

## Use on Site of Origin – Case Study 2



- **Financial benefits:**
  - £ 10.5m saved in disposal
  - £ 650k saved in material import
  - £ 300k prelims saving
- **Environmental benefits:**
  - 8,500 wagon movements disposal
  - 850,000 vehicle miles
  - 8,500 wagon movements import
  - 850,000 vehicles miles
- **Programme benefits:**
  - Additional 2 wks to export material
  - Additional 2 wks to import material

*Acknowledgements:*  
**United Utilities** – Site owner and operator  
**MWH** – Designer and environmental consultant  
**KMI** – Principal contractor



APPLYING BEST MANAGEMENT PRACTICES TO EXCESS CONSTRUCTION SOILS: APPLICATIONS IN REAL ENVIRONMENTS

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## Direct Transfer – Lines of Evidence

In the Direct Transfer scenario there is a strong emphasis on lines of evidence concerning past use of the source site and potential for contamination

- Is the source site really a greenfield site?
- If brownfield, can contamination be reasonably discounted for the site as a whole, or clearly defined areas of the site?
- Has the presence of naturally occurring elevated substances been adequately considered and evaluated?

## Direct Transfer - Minimum Requirements

Direct Transfer Scenario	Requirement at Source site	Requirement at Receiving site	Qualified Person (specific to Direct Transfer – see also Box B)
Greenfield sites with elevated naturally occurring substances (for reuse at either greenfield or brownfield sites)	<p>Adequate Site Investigation</p> <p>Visual and olfactory inspection during excavation</p>	<p>Adequate Site Investigation and appropriate Risk Assessment</p> <p>Confirmation of comparable or higher naturally occurring elevated substances than those of the source site</p> <p>Visual and olfactory inspection</p> <p>Confirmatory testing</p>	<p>Satisfied that source site has had no contaminative use on basis of information provided and receiving site has comparable or higher levels of such substances</p>

## 1.0 Introduction

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The Residential and Civil Construction Alliance of Ontario (RCCAO) supports the sustainable and beneficial reuse of excess construction soils in Ontario.

Construction projects and infrastructure renewal activities represent a significant portion of employment creation as well as capital and operating expenditures in Ontario's economy.

This spending must be directed more efficiently than ever, as current economic conditions dictate that infrastructure projects be completed in a cost-effective manner to maximize benefits.

The optimized handling of excess soils from construction-related projects represents an opportunity to direct efforts and dollars away from soil disposal and into actual project infrastructure.

The excess construction soils from development and infrastructure renewal projects present an opportunity for developing a beneficial reuse as an alternative to simply excavating soil and disposing of it at an offsite location. Offsite disposal at a landfill site has been the preferred option due in part to regulatory and legal liability considerations. While this may be seen as easier and more expedient than the alternatives, there are cost and sustainability implications. Landfilling excess construction soils as a waste product is not a sustainable environmental approach. As a valuable resource material, it goes against the accepted principles of "reduce, reuse and recycle." It is also recognized that filling up the dwindling number of approved landfill sites displaces available capacity for the legitimate waste stream and, as a result, will drive up tipping fees.

### 1.1 Purpose and Principles Involved

**1.1.1** This Best Management Practice (BMP) is applicable to the following:

- To establish a best practice framework for the construction industry when assessing a project on a site-specific basis, whether excavated excess soils and materials at the SO are classified as a waste material or can be beneficially reused either on site or offsite based on future land use.
- To provide an effective process to beneficially reuse excess soils from construction sites and projects. Where an RSC requirement may be in place, this BMP may be applied, providing all participating parties contractually agree, through reliance letters or other means, to follow the BMP in concert with regulatory expectations.
- To outline an auditable system to demonstrate that this BMP has been followed.

**1.1.2** It is the responsibility of the holder of the excess construction soil and material to determine if materials are a non-waste. This BMP allows users to come to that view and to demonstrate it with regard to current regulations. The person commissioning

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the excavation work is responsible for complying with this BMP. This is based on a responsible business approach in compliance with regulatory requirements and the professional integrity of those on the project team.

**1.1.3** Accordingly, any regulatory body that may be involved will take into account that this BMP is not dealing with waste material and that excess soils and materials are being beneficially reused either on site or as part of the receiving locations approved end use.

**1.1.4** This BMP has three basic steps:

- Ensuring that a proper Materials Management Plan (MMP) is in place covering the use of excess materials on a specific site
- Ensuring that the MMP is based on an appropriate risk assessment/evaluation supported by a Remediation Strategy (RS) or an approved Design Statement (DS) or development plan
- Ensuring that excess materials are used as set out in MMP and subsequently demonstrated in a Verification Report (VR)

**1.1.5** A Qualified Person (QP)\*\* must review relevant documents and provide a declaration to any involved regulatory agency that materials will be dealt with in accordance with the MMP and confirming that material is not a waste.

**1.1.6** In order to prove that materials have been reused or treated in an acceptable manner in accordance with the MMP and any Risk Evaluation (RE) or any formal work related to the site risk assessment, a VR must be prepared at the conclusion of the project. This may be provided, if requested, to the local authority having jurisdiction.

**1.1.7** If excavated excess construction materials are used or relocated without following this BMP, the local regulatory authority having jurisdiction may deem the excavated materials to be a waste subject to regulatory requirements. When dealing with waste materials, all regulatory requirements are applicable. However, following this BMP is in line with those requirements.

\*\*In Ontario a QP is currently defined by O.Reg.153/04. The CL:AIRE COP document defines a QP more generically as an appropriately experienced professional who is trained and certified in following the conditions identified in the actual CL:AIRE COP. For the initial purposes of implementing this BMP, a practicing QP as defined in O.Reg 153/04 is recommended.

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## **1.2 Intended Parties**

**1.2.1** This BMP is directly applicable to individuals who commission earthwork operations, their appointed engineers, contractors (including civil and remediation contractors), those involved in haulage of excess materials, operators of receiving sites, and authorities having local jurisdiction in excess soil matters. All parties have a role to play if a site is being developed under this BMP. It should be of particular interest to landowners and developers involved with new civil or residential development sites or infrastructure projects.

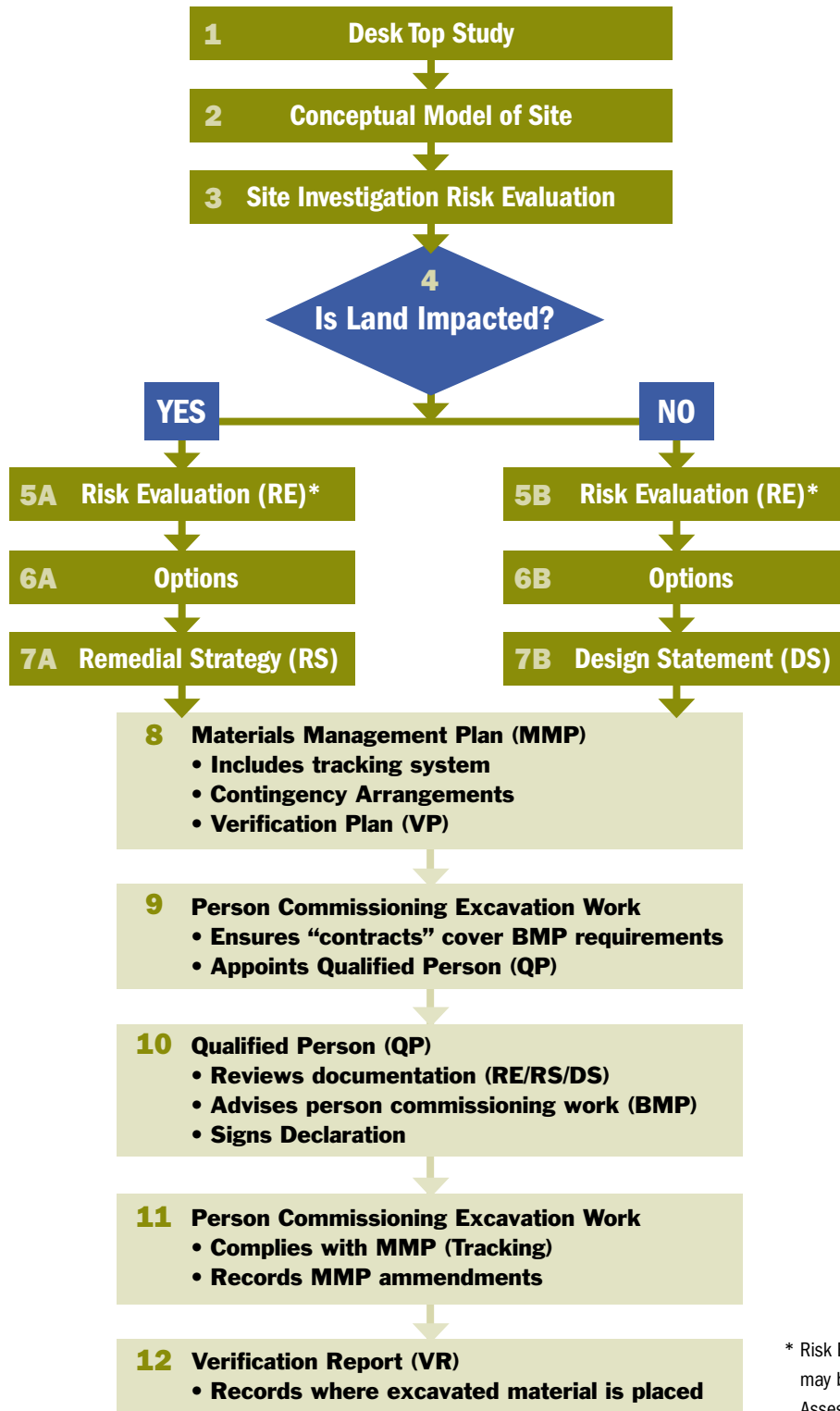
## **1.3 Scope**

**1.3.1** This BMP is a voluntary guidance document supporting the responsible handling of excess construction soils utilizing a documented managing system. It is intended to ensure that excess construction soils and materials are beneficially reused both on- and off-site based on future final land use by demonstrating that the excess construction materials involved are not waste materials. An overview showing the general scope and components of the of the BMP are shown in the Process Overview Summary chart (page 15).

**1.3.2** This BMP relates to the following excavated excess construction materials, which include the following:

- Soil, both topsoil and subsoil, parent material, and underlying geology
- Ground-based infrastructure that is capable of reuse within earthwork
- Projects including concrete footings, floors, and road base material
- Made ground
- Source-segregated aggregate material from demolition activities e.g. crushed brick and concrete to be reused on generating site within earthworks projects or as sub-base or drainage material
- Stockpiled excavated materials included in above

## Best Management Practice: Process Overview Summary



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**1.3.3** The following materials are outside of the scope of this BMP:

- Specific excavated infrastructure materials including pipe work and storage tanks
- General construction waste e.g. drywall, glass, wood, metal, etc.
- Demolition wastes not included in paragraph 1.3.2 above

**1.3.4** This BMP applies to both uncontaminated and contaminated material from anthropogenic and excavated natural sources based on the following:

- For use on the site from which it has been excavated, either with or without treatment, or after on-site treatment as part of redevelopment of the SO
- For use directly without treatment at another development site that is subject to meeting direct transfer requirements
- For use in the development of land other than the generating site from which the material has been excavated, following treatment at either an authorized Soil Recycling Centre (SRC), soil treatment centre, soil depot/campus, or a combination thereof
- Refer to Appendices and Table 1 – Material Types and BMP Approach

**1.3.5** This BMP relates to the issue of whether or not excess construction soils and materials should be classified as a waste. The principle involved is that compliance with the requirements of this BMP means that the materials and excess soils handled are not a waste given their intended beneficial reuse. Should excess materials or construction soils be identified as contaminated or having no future beneficial reuse, they are to be deemed a waste and must be handled and disposed of in compliance with approved local and provincial waste handling requirements.

**1.3.6** For the purposes of this BMP, “land development” includes greenfield sites, new development work, redevelopment work, infrastructure renewal, site remediation, and reuse of excavated materials from municipal rights of way and properties.

**1.3.7** The following land development situations are not specifically addressed by this BMP:

- Any form of pre-treatment on SO prior to landfilling
- Unexcavated waste materials subject to in-situ treatment
- Specific testing strategies
- Construction or remediation methods



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## **1.4 Context and Objective of BMP**

**1.4.1** This BMP builds upon O.Reg 153/04 and other regulatory guidance documents. It is intended to support the cost effective, sustainable, and beneficial reuse of excess construction soils and materials from construction projects in Ontario where a RSC may not apply. This would include smaller commercial and residential construction projects and municipal infrastructure projects.

**1.4.2** This BMP provides the following sustainability-based benefits for both the construction industry, the development industry, local municipalities, and communities involved in dealing with non-impacted excess construction soils.

### **Environmental Benefits:**

- Minimizes waste volumes or non-impacted overburden excess soils
- Beneficially recovers and reuses non impacted materials previously deemed to be waste materials
- Preserves valuable landfill capacity for true waste disposal needs
- Reduces natural resource consumption e.g. new or replacement quarried materials, fossil fuels used in transportation
- Reduces vehicle emissions, greenhouse gases (GHG), and the carbon footprint of the development process
- Reduces environmental pollution and risk to human health

### **Social Benefits:**

- Returns brownfield lands to beneficial use for the local community
- Preserves greenfield lands
- Removes blight issues due to reuse of excess excavated construction soils and materials
- Improves community life on developed lands
- Reduces truck vehicle movements e.g. congestion, air quality, disturbance

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**Economic Benefits:**

- Lower overall development and project costs
- Lower excess construction soils transport costs by reuse on site or reuse at another closer development site or SRC
- Reduced need and costs for importation of other virgin materials
- Working under an industry BMP approach develops industry expertise and efficiency opportunities through a Continuous Improvement (CI) approach and the application of learnings
- Working under a BMP for smaller construction projects should be less expensive financially and time-wise versus applying a regulatory permitting process focused on waste material methodologies
- BMP provides a clear, consistent, systematic, and more certain approach aligned with documentation typically associated with the property development process and site remediation process and strategies
- Use of a MMP quickly compiles information from involved QPs based on the actual final development plan for a site or project
- Allows for flexibility when managing excess materials
- BMP is less complex than being tied to waste-focused legislation
- BMP should lower regulatory involvement and associated oversight costs
- Provides a more clear due diligence defense in civil and regulatory matters

**1.4.3** The application of this BMP and the sustainability principles involved will become an indicator of a company or organization's commitment to sustainable development. This BMP will further support recognition within an organization's Corporate Social Responsibility (CSR) policies and performance reporting programs.

## 2.0 Principles for the Use of Materials as a Non-Waste

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**M**aterials are considered to be a waste as determined by the definition in O.Reg 347. The primary principle in the determining whether excess construction soils or materials are a waste is the protection of human health and the environment; their end use must pose no adverse effect. Material that is not a waste can be reused without processing or treatment for a beneficial purpose.

Subject to compliance with strict regulatory waste definitions, this BMP applies the basic approach that there is no single factor that can be used to determine if excess construction soil is a waste, or when it ceases to be a waste. For excavated excess soils and materials used on sites undergoing development, the following four factors are relevant:

### 2.1 Factor 1 – Protection of Human Health and the Environment

**2.1.1** The overriding principle in all situations is that excavated excess construction soils and materials must be assessed and found to have no adverse effect on human health or the environment given the proposed end use of the excavated excess soil and material. The use of a SO desktop study, appropriate site investigation, and analysis supported by a risk assessment and evaluation should ensure that excess soils and materials handled under this BMP pose no human or environmental risk.

### 2.2 Factor 2 – Suitability for Use Without Further Treatment

**2.2.1** Suitability for use means that excavated excess construction soils and materials must be suitable for their final approved end use. Both chemical and geotechnical properties must meet relevant specifications for future end use such that they do not cause harm to human health or the environment. This includes the effect that the excess materials may have on the environment where they are to be reused. Biological factors e.g. presence of invasive species or noxious weeds, as well as the effects of any radioactivity should also be considered. Measures based on a suitable SO risk assessment should be taken such that there is no adverse effect or risk to humans, animals, or ecosystems. This included impacts on water, air, plants or other soils.

**2.2.2** Excavated excess construction soils should be assessed as being suitable for direct beneficial reuse, such as engineered backfill beneath cover layers, capping layers, regrading, berming, and landscaping.

**2.2.3** Other excavated materials may not have the required characteristics for reuse without first being treated. These excess construction soils and materials may require further biological, chemical, physical or combination of these treatments that will need to be carried out. These treatment activities should be technically appropriate and in compliance with any required local regulatory requirements or approvals prior to reuse.

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**2.2.4** Certain excavated excess construction soils and materials not requiring treatment may be regraded or compacted and beneficially reused as a non-waste material as part of the development of the site or project.

### **2.3 Factor 3 – Certainty of Use or Reuse**

**2.3.1** The holder of excavated excess construction soils and materials must be able to demonstrate with certainty that excavated material will be reused with a plan and predefined destination particularly in the matter of stockpiling. Excess materials that are temporarily stockpiled must have a predefined destination to remain a non waste.

**2.3.2** Work surplus excess construction soils that are generated during site development and cannot be used, either directly or after treatment on site, or do not conform to required specifications following treatment may have to be treated as a waste product in compliance with local regulatory requirements.

**2.3.3** In the event that there are unexpected findings on a development site or project that were not identified during original site investigation work, these findings should be addressed in compliance with local regulatory requirements. Should the physical or chemical specifications of any unplanned excess materials be found unsuitable for their intended reuse, they should be disposed of properly or recovered for other beneficial reuse in accordance with local regulatory requirements.

### **2.4 Factor 4 – Quantity of Material**

**2.4.1** Excess construction soils and materials should be taken only to a receiving site in quantities that are required and that can be accommodated at the receiving site as planned (other than for approved temporary storage sites). The shipping of an excessive amount of excess material may indicate that it is being disposed of and as such may constitute a waste material.

### **2.5 Demonstrating the Four Factors**

**2.5.1** Demonstrating the four factors of (1) protection of human health and the environment, (2) the suitable reuse of excess materials without further treatment, (3) the certainty of reuse, and (4) the quantities of excess materials involved is accomplished through the production of a MMP. The MMP will ensure that these four factors are considered and that a correct determination of the beneficial reuse of excess construction soils and materials has been made for the development or project involved.

**2.5.2** If the MMP and the provided supporting evidence does not demonstrate that all four factors have been considered and adequately addressed then the QP should not sign the Declaration.

## 3.0 Demonstrating that Excess Construction Soil is not a Waste

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The MMP sets out the objectives related to the reuse of excess construction soils and materials. It should accompany an appropriate, approved RS, Remediation Plan, or Project Development Design Statement that is derived from an appropriate RE or risk assessment. The MMP provides information to demonstrate that all four factors in Section 2 have been met and includes a tracking system and contingency plans. The development and use of a MMP standard template approach is recommended.

A VP is part of the MMP. Upon completion of these documents, a QP is required to sign a Declaration. Once the development or project is completed in accordance with the MMP, a VR must be completed that demonstrates that the excess construction soils and materials were located in the correct place within the development or dealt with appropriately.

The process set out in this BMP in relation to the reuse of excess construction soils and materials is illustrated by work process flow chart maps under the following three scenarios:

### (1) Site of Origin (SO) or sometimes referred to as the generating site

#### **Flow Chart 1 (page 22) – Use on SO**

This flow chart in conjunction with Appendix 1 provides a process map outline of the activities and requirements at the SO. This applies to both sites or projects that may or may not involve environmental impacts. The emphasis is on beneficial reuse of excess soils on the SO, but also includes on site treatment for remedial activities.

### (2) Direct Transfer to another development site or project for beneficial reuse

#### **Flow Chart 2 (page 23) – Direct Transfer**

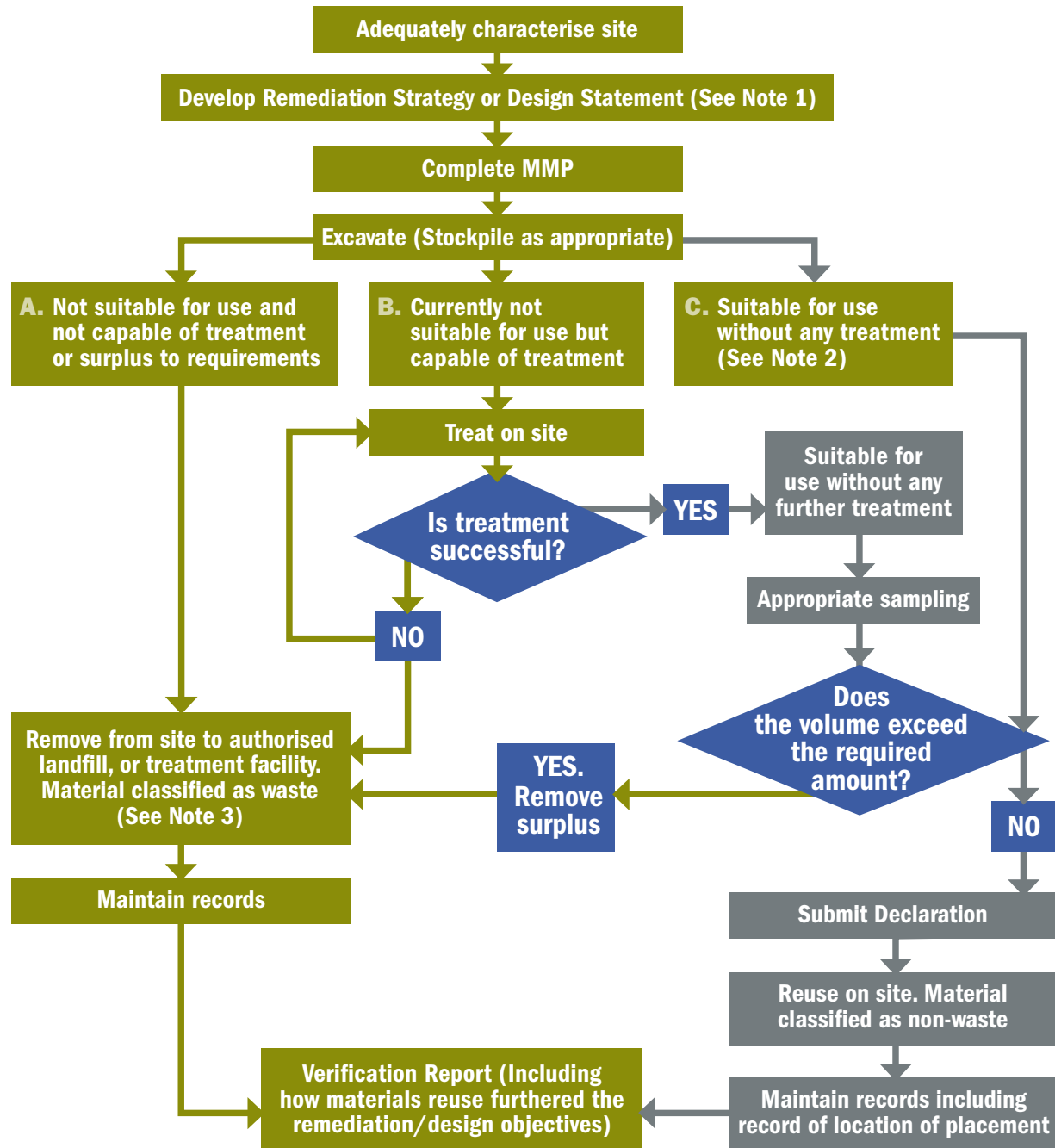
This flow chart in conjunction with Appendix 2 provides a process map outline of the activities and requirements to use “clean,” naturally occurring excess soils and mineral materials directly from the SO on another site or development project. In this scenario, no soil treatment is involved and material is suitable for reuse by meeting the beneficial reuse material specifications of the receiver site. It is recognized that the ability to directly transfer excess construction soils represents a major opportunity for cost-effective, beneficial reuse of excess materials in an environmentally responsible manner. It is also recognized that the ability to carry out “soil matching” between suppliers of surplus excess soils and those requiring excess soils is a major incentive for the direct transfer and beneficial reuse of excess soils on a wide area basis.

### (3) Soil Recycling Centre (SRC) or soil depot/soil campus transfer of excess soils

#### **Flow Chart to be developed at future date**

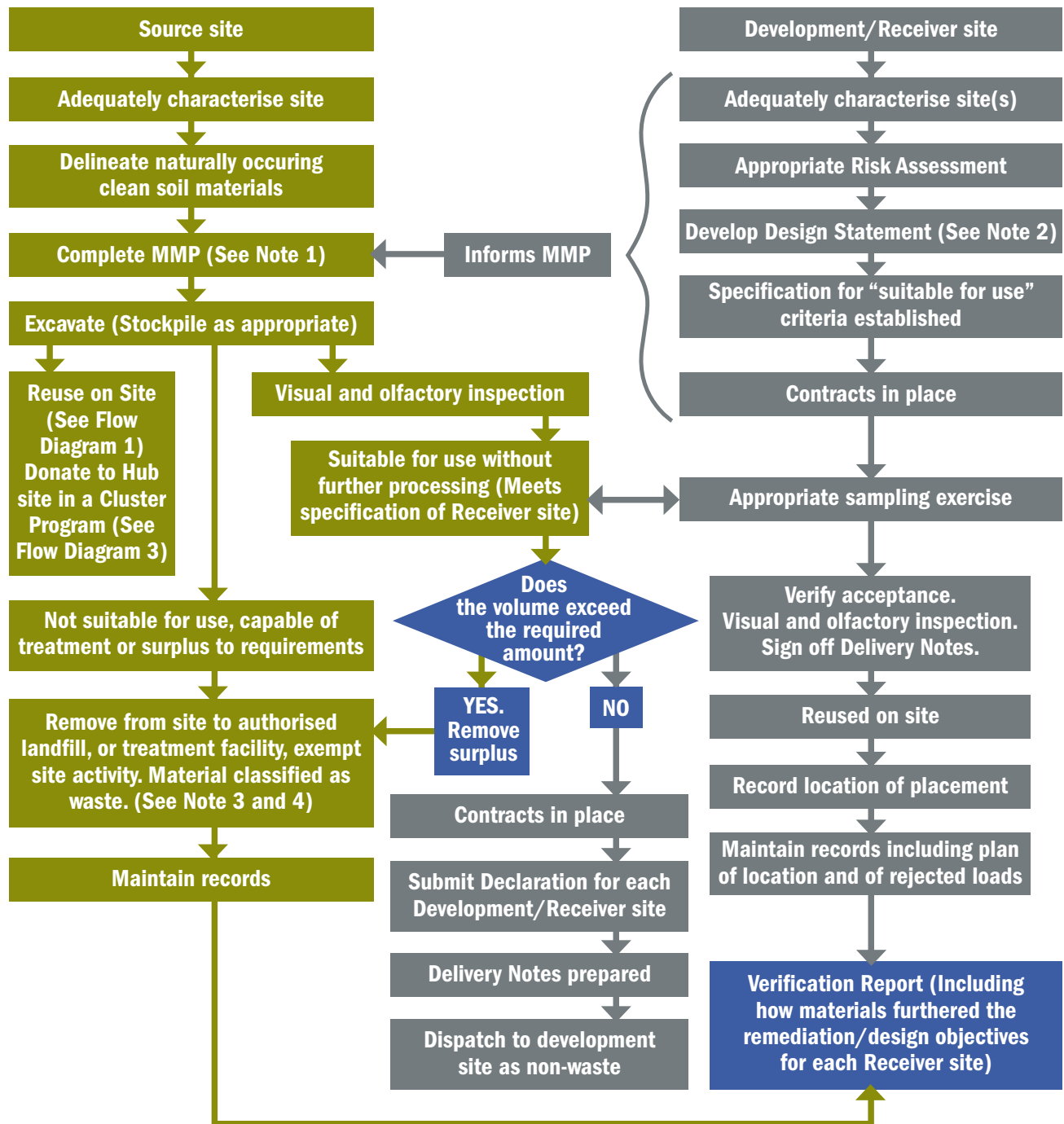
The establishment of SRCs in Ontario is a relatively new and limited activity. This includes similar initiatives involving development of soil banking sites, soil campus sites and soil treatment facilities. The ability to move and stockpile excess construction soil is a critical component in dealing with excess soils from emergency projects or smaller, distributed residential and commercial construction sites in a timely fashion. This BMP is intended to support the need for the establishment of SRCs.

## Flow Chart 1: Site of Origin (SO)



**Notes:** **1.** Remediation Strategy/Design Statement developed following Desk Top Study, Conceptual Site Model, Site Investigation, appropriate Risk Assessment and appraisal of options. **2.** Must be able to demonstrate certainty of use along grey flow chart path. If the use becomes uncertain material remains waste and will be required to be removed from site. **3.** For removal from site you will need to consider and comply with Waste Regulations.

## Flow Chart 2: Direct Transfer



**Notes:** **1.** Material Management Plan needs to cover all component sites. It can be produced by either the source site operator or operator at the Development/Receiver site. **2.** Design Statement developed following Desk Top Study, Conceptual Site Model, appropriate Risk Assessment and appraisal of options. **3.** Must be able to demonstrate certainty of use along grey flow chart path. If the use becomes uncertain material remains waste and will be required to be removed from site. **4.** For removal from site you will need to consider and comply with Waste Regulations.

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## **3.1 Two Routes – Site Remediation or Development**

**3.1.1** There are two different routes that can be followed depending on whether a particular site involves contaminated soils (the site remediation route) or on a new, greenfield site (the development route) where there is typically no contamination to be expected.

### **3.1.2 The Site Remediation Route:**

For potentially contaminated sites i.e. brownfield redevelopment projects where contamination is present or suspected, this BMP is intended to be aligned with the draft Ontario Ministry of the Environment (MOE) Soil Management – BMP (April 19, 2012) and in compliance with *Ontario Environmental Protection Act* (EPA) XV1, O.Reg. 153/04 Brownfield Regulations) and O.Reg. 347 (*Waste Act*) when dealing with present or suspected contamination. For impacted properties, the BMP for excess construction soils is a risk-based approach, based on the principle of creating no adverse impact.

### **3.1.3 The Development Route:**

Where contamination is not present or suspected, there is no published regulatory framework for development projects dealing with excess soils or materials. Accordingly, this BMP can be used in conjunction with the following development-related activities:

- Completion of a desktop study
- Appropriate site investigation (Phase 1 or Phase 2 Environmental Site Assessment based on Canadian Standards Association protocols in compliance with local regulatory requirements)
- A DS should be used to document the MMP and subsequently a VR will detail the uses for excess construction materials

## **3.2 Materials Management Plan (MMP)**

**3.2.1** A MMP must be produced that documents how excess construction soils and materials are to be handled. The MMP may be produced by experienced in-house technical staff. The MMP, subject to formal amendments, must be followed throughout the execution of the project.

**3.2.2** The MMP must be produced prior to any BMP-related excavation work commences. In the event of an emergency situation (e.g. repairs to municipal public infrastructure works or repairing unsafe facilities) a modified MMP document approach should be prepared documenting excess construction soils and materials handling.

Note: Appendix 8 to be developed. It will include a process map supporting the handling of excess soils generated during the course of emergency projects, with a primary focus on municipal infrastructure renewal work.



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In summary, the MMP must be prepared prior to movement of excess construction soils and materials, and provides the following information:

- Details of parties involved with implementation of the MMP
- A description of the excess materials in terms of potential reuses and relative quantities involved by categories (see Table 1, page 43)
- The specification for use of materials against which proposed materials will be assessed based on an appropriate risk evaluation or risk assessment at the place excess materials will be used
- Where and, if appropriate, how excess materials will be stored or temporarily stockpiled for reuse
- The intended final destination and reuse of excess soils and materials
- How excess construction soils and materials are to be tracked
- The contingency arrangements that must be put in place
- A Verification Plan (VP) outline

**3.2.3** All excess construction soils and materials within the ground and to be excavated should be categorized according to Appendix 10 – Categorization of Materials in Ground (to be developed).

**3.2.4** To aid in better characterization, excess construction soils and materials may be stockpiled on the SO and further tested prior to making an informed decision about the location to which excess materials should be moved. This further refinement should be part of a decision process, detailed within the MMP. Prior to excavation, a MMP must be in place categorizing excess construction soils and materials based on Appendix 10 – Categorization of Materials in Ground (to be developed).

**3.2.5** Quantities of excess construction soils to be reused will depend on the development project being undertaken and should not be more than is specified or necessary. The MMP should include engineering drawings defining existing and final grade levels with cross sections which demonstrate what quantity is needed. For whole site developments, mass balance calculations referenced to the final grade levels compared with pre-existing contours at the start of the development should be detailed in the MMP.

**3.2.6** For large sites and developments that may take several years to develop, a phased approach may be appropriate, with each phase having a separate MMP. This is to recognize that the responsibility for materials to be reused might change over time. The four factors can be properly demonstrated at a particular time with each MMP. For new

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large subdivision sites and projects that may or may not have an RSC in place, consenting developers and contractors may put contractual arrangements or reliance letters in place covering the relocation of excess construction soils between individual properties within the overall development project. These formal arrangements would replace the need for a MMP. Typically, this would involve the relocation and reuse of native materials and excess soils as part of cut and fill grading operations and would therefore constitute a low-risk activity.

### **3.3 MMP Tracking System**

**3.3.1** All excess construction soils and materials subject to excavation, disposal, treatment, and/or reuse should be tracked throughout the process. Evidence should be generated to provide an auditable trail. There may be unique low-risk situations involving large subdivision development projects where the agreed-upon movement and relocation of excess construction soils between developers and property owners, typically cut and fill grading activities, does not warrant a formal MMP tracking system. In these cases, contractual agreements may be put in place outlining an appropriate modified level of tracking. Such arrangements between consenting parties should be contractually identified or covered through an enforceable reliance letter or documentation in which the reasons for not having a formal MMP or associated tracking system are identified. For materials identified as “waste materials,” tracking is accomplished through the formal waste management regulatory process involving waste material manifesting, use of appropriately licensed waste haulers, and final disposal at a recognized, regulatory permitted waste receiving site.

**3.3.2** The formal tracking system that is used for tracking the movement and the beneficial reuse of excess construction soils and materials both on site and offsite should include the following:

- Annotated plans of site(s) identifying different excavation areas referenced to any available site investigation data as appropriate, planned stockpile locations, treatment areas (if applicable) and placement locations
- Inspection procedures should include (1) visual and olfactory observation, (2) field testing as appropriate, and (3) laboratory confirmation as appropriate
- The name of the non-waste hauler or registered waste carrier involved (may be the same person)

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- An excess soils and materials tracking form including running tally capability
  - The movement through any authorized treatment facility or SRC will have to be tracked by designated stockpile(s) to, for example, ensure accountability per regulatory permitted requirements of the treatment site.
  - Any soil treatment results (if applicable)
  - Unless documented alternate tracking arrangements have been made in advance by involved parties, every truck delivery ticket for excess construction soils and materials moving from one site to another site should include:
    - Drivers name and vehicle registration
    - Quantity (running tally for each receiving site or sub area)
    - Destination (receiving site and/or sub area)
  - Acceptance procedures for excess construction soils and materials at the receiving destination include:
    - Visual and olfactory
    - Field testing (as appropriate)
    - Laboratory confirmation (as appropriate)
    - Signed delivery tickets (including instructions where to offload as appropriate)
    - Record of where excess excavated construction soils and materials were placed

**3.3.3** Examples of schematics for excavated materials and destinations are shown under Appendix 8 – Example Schematics (to be developed )

### **3.4 Verification Plan (VP)**

**3.4.1** A Verification Plan (VP) should be set out in the MMP. The Verification Plan should identify how the placement of excess construction soils and materials is to be recorded and the quantity of material to be used. It should contain a statement on how the reuse of excavated materials relates to the remediation plan or design objectives of the project(s) involved.

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### **3.5 Amendments to MMP**

**3.5.1** In some cases it may not be possible to complete the works in accordance with the original MMP i.e. treated material may be out of specification for planned reuse or different volumes of material are needed in certain parts of the SO. In this event:

- Any deviations from the original MMP must be recorded in the document control section of the MMP as an addendum to the MMP
- Any such changes must be subsequently detailed in the final VR

### **3.6 The Role of Qualified Person (QP)**

**3.6.1** A QP must review the evidence related to the proposed uses of excess construction soils and materials on a specific site and if satisfied, sign the Qualified Person Declaration (Appendix 4). A copy of the Declaration must be provided to the person commissioning the excavation work and any required regulatory bodies as identified.

**3.6.2** The Declaration may be used if required as a notification to local regulatory authorities that the development, remediation site, or project involved is to be conducted under or developed using the BMP for Handling Excess Construction Soils in Ontario. A copy of the Declaration goes to the person commissioning the QP and serves as a reminder that the MMP must be followed, including any required amendments, and that a VR must be completed. It will form part of the audit trail on the completion of the project.

**3.6.3** The status and role of the QP under this BMP have been developed in line with the following criteria, as set out by the RCCAO Excess Construction Soils Industry Steering Committee. (The committee was involved in the development of this excess construction soils BMP, in consultation with construction industry representatives, industry and municipal associations and regulatory authorities.) The following outlines the current position and principles regarding engagement of QPs in the context of this BMP:

- Under O.Reg 153/04, there are specific professional and legal requirements in place in Ontario defining a QP. Subject to further discussion and development, it is anticipated that the term “Qualified Person,” within the context of this BMP, may be expanded to include experienced individuals who are trained and knowledgeable in applying this BMP. This is intended to permit the use of in-house, experienced environmental professionals at both the SO and at receiving sites as is current practice in moving excess soils.

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- The actions of the QP should provide confidence to the local regulatory authorities involved that best professional practices are to be followed at project sites using the BMP and that there is an effective audit trail relating to what is planned
  - Responsibilities and possible liability exposures associated with a development project should be no different than they were prior to the adoption of the BMP
  - A project utilizing a BMP approach should not require the engagement of QPs at both the SO and the receiving destination(s) subject to the the agreement of all parties involved. Accordingly, there should be no need to duplicate or pay for the same work twice.

**3.6.4** It is the responsibility of the QP to review and acknowledge any unique contractual arrangements that may be put in place between parties involved in the excavation and relocation of excess constructions soils and materials. This could involve, but is not limited to, actual agreements or reliance letters between all parties involved.

### **3.7 Further Characteristics of the Qualified Person (QP)**

**3.7.1** Currently in Ontario, a QP's role is defined under O.Reg.153/04. To be recognized in the Province of Ontario as a QP, an individual must possess certain attributes. Within the context of this BMP, the principal requirements for an individual to act as a QP are identified in Appendix 6 – Qualified Person Requirements.

**3.7.2** It is the responsibility of the person or entity employing the QP to check and confirm that these requirements are met by the individual concerned

**3.7.3** The QP is required to review various documents but is not expected to be an expert in all of the disciplines that may be involved and associated with a development project carried out under this BMP. This could include items such as waste legislation, human health risk assessment, all remediation technologies, remediation design, and implementation activities. The QP must be suitably experienced to be able to carry out the review of specified documents and be confident in signing the Declaration.

**3.7.4** The responsibility of the QP is limited to just the review of the documentation detailed in the Declaration. A high standard of professionalism and integrity is fundamental to the requirements of this BMP. It is the duty and responsibility of the person(s) carrying out and commissioning the excess soils excavation work to act in a responsible manner in compliance with required regulations in selecting a QP.

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## **3.8 The Process**

**3.8.1** A checklist of the QP's required tasks is to be followed.

This checklist (to be referenced as Appendix 11 – Qualified Person Checklist) will be developed and finalized as a separate document upon finalization of the draft BMP and based on pilot testing.

**3.8.2** The QP is not required to do the following:

- Rework or audit risk assessments
- Review existing documentation including Phase 1 or Phase 2 reports
- Physically inspect sites or perform field checks at all sites or projects unless requested for specific, unique reasons
- Audit or agree to a RS or DS
- Produce, review, or agree to a VR. (Note: the client may wish to appoint the QP to carry out such work given his/her level of project familiarity. This type of an arrangement would be beneficial and is encouraged but is outside of the remit/scope of this BMP)
- Enter into a dialogue with regulators or planning authorities having jurisdiction without the consent of all parties involved

**3.8.3** The role of the QP is deliberately limited so that it may be set out in this BMP. If the QP was to come across any fundamental error in any documentation, then it is expected that they would appropriately and professionally address the BMP-related issues with the person(s) commissioning them as a QP. For the purposes of this BMP, that would be done outside of the QP's requirements.

## **3.9 Submission of the Declaration**

**3.9.1** A Declaration should be completed and signed by the Qualified Person in the following circumstances:

- Site of Origin scenario – prior to use
- Direct Transfer scenario – prior to dispatch for each receiving site
- Soil Recycling Centre scenario – prior to dispatch

**3.9.2** The signed Declaration may be submitted to the local authority having jurisdiction or, as required, locally (subject to the agreement of all parties involved).

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### **3.10 Qualified Person Engagement**

**3.10.1** The QP can be engaged by any party involved with the project implemented under the BMP. This can be the landowner, developer, main contractor, consultant, or individuals working on the SO, SRC, or Receiving Site (RS) involved in the handling of excess construction soils and materials. The independence of the QP relates to all the sites involved as referenced in Appendix 6 – Qualified Person Requirements.

### **3.11 Verification Report (VR)**

**3.11.1** A Verification Report (VR) must be produced. This provides the necessary audit trail to show that excess construction soils and materials have gone to the correct destination. The VR shows how the reuse of excess materials links with the objectives of previously defined RS or DS.

**3.11.2** The VR must document any changes that may have been made to the original MMP as formal alterations to the project.

**3.11.3** The following identifies what information should be included within the VR. (Note: items involved in a new development DS may not have all requirements applicable and are marked with an asterisk.\*)

- Appropriate site plans
- Experience and qualifications of person preparing VR
- Description of project
- Description of how reuse of excess materials links with the RS or DS
- Reference to site assessment/investigation data\*
- Reference to risk assessments (including qualitative and quantitative information related to soil quality)
- Reference to the MMP and associated tracking system, including alterations and/or use of contractual arrangements or reliance letters between consenting parties and why those changes were made
- Suitable for use criteria based on soil quality criteria used
- Soil treatment records\*
- Laboratory analysis supporting work\*
- Reference to excess soil transfer documentation including contractual or reliance letters and any returned loads but excluding SO only movements

- 
- Signed delivery tickets (reference or attachment) covering alternative contractual or reliance letter documentation established between consenting parties
  - Record of any contingency arrangements put in place during the project
  - Record of quantity of materials used unless addressed via contractual agreements or reliance letters between parties involved
  - Copies of signed Declaration(s) by QP(s)

### **3.12 Role of the Regulator**

**3.12.1** The aim of the BMP is to provide a consistent framework and documented audit trail where it has been determined that the excess material has a beneficial reuse and therefore not considered a waste within Ontario waste regulations.

**3.12.2** It is the intention of this BMP that the QP, acting in accordance with the BMP, will undertake the review of documents and provide the necessary oversight to ensure that the handling of excavated excess soils is carried out appropriately. This allows the local regulator to focus attention on other activities posing a greater threat or adverse impact to the environment and public at large.

**3.12.3** If a local regulatory body is actively involved in activities pertaining to the SO, that regulatory body will acknowledge receipt of all Declarations received. The local regulatory authority having jurisdiction has the option to audit projects as required. The intention is not to duplicate the role of the QP involved in following this BMP.

### **3.13 Liaison**

**3.13.1** The intention of this BMP is to avoid adding any additional steps or consultations with local regulators that were not required prior to adoption of the BMP.

**3.13.2** Compliance with this BMP does not remove the need to liaise as required with local regulators regarding compliance with any other regulatory requirements, particularly where contamination is involved. This could include municipal or regional planning regimes, conservation authorities, or other regulatory bodies as required.



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**3.13.3** The QP should ensure that where source sites, based on risk evaluations or intrusive assessment data, have contaminated excess soils and materials present, that the local regulators involved take no exception to remedial actions that may take place at the source site involved.

**3.13.4** It is incumbent that those commissioning the QP provide sufficient evidence that there is no suspicious contamination at a site or that appropriate consultation with local regulators has taken place as required if contamination is known to be present.

**3.13.5** When SRCs, soil depots, or soil campus facilities are used, appropriate contractual arrangement and responsible operating arrangements must be put in place and documented.

### **3.14 Auditing by Local Regulatory Agency**

**3.14.1** This BMP does not change the statutory powers or duties of the regulatory agency involved at the local, provincial, or federal jurisdictional level.

**3.14.2** On an as-required basis, sites and projects following this BMP may be inspected by the local regulatory regime if a need is triggered by complaints, incidents, or alleged illegal activities. Authorities having local regulatory jurisdiction have the option to conduct random audits of selected sites/projects involved in BMP activities to assess the effectiveness of the BMP process as a whole.

## **4.0 Other Regulatory Issues**

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### **4.1 Storage on Site of Origin (SO) or Production**

**4.1.1** Whenever it is determined that the use of excess construction soils and materials will occur in excess of one year from the date of being stockpiled, the person responsible for MMP will be required to communicate within a timely period with the local authorities having jurisdiction on an acceptable length of stockpile storage time. Any decision made is to be supported by the implementation of appropriate institutional controls.

### **4.2 On-Site Disposal Operations**

**4.2.1** Any impacted or contaminated materials should be contained and managed on site to prevent further pollution or minimize any on or offsite adverse impacts to human health and the natural environment.

### **4.3 Groundwater Protection**

**4.3.1** The management of all non-waste and waste excavated excess construction soils and materials must be handled in compliance with all local regulatory authority requirements. The contamination of groundwater must be prevented and considered in following this BMP. When planning the MMP and all the related project decisions made regarding the suitability of the reuse of the excavated excess construction soils involved, groundwater protection is to be considered at all times.

## Appendix 1: Use on Site of Origin (SO)

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**A1.1** The SO, for the purpose of this BMP, is a single, readily identifiable site or physically identifiable project. It may include:

- Area covered by specified planned development DS
- Area covered by a single detailed RS
- Area covered by a single detailed DS project e.g. pipeline route, proposed roadway
- May also include identifiable new development subdivision projects, including sites as described in contractual agreements or letters of reliance pertaining to the handling of soil under a BMP

**A1.2** Where a number of parcels of land in close proximity to each other are assembled together as part of a larger subdivision plan, these sites will have to be identified and agreed to as “Site of Origin” for planning and any regulatory compliance purposes.

**A1.3** Decisions defining the SO should ensure that the most sustainable and beneficial reuse of excess soils can be made in terms of excess soil and material movement and reuse.

**A1.4** Developments that extend across very large areas and contain a diverse range of source materials, making transport and reuse of excess soils and of materials unduly complex, may best be addressed by Direct Transfer or transfer to a SRC (Appendices 2 and 3) rather than attempting to define a single SO.

**A1.5** Excavated excess construction soils may be used within the development, subject to being suitable for reuse or following on-site treatment. The on-site treatment must be carried out under a local regulatory approved licence, Certificate of Approval, permit, or equivalent required approvals.

**A1.6** Excess construction soils and materials (surplus to SO planned requirements) should go to either an approved landfill site or SRC. If clean, natural soil material, it may be transferred directly to another development Direct Transfer site that requires clean material subject to restrictions in Appendix 2 – Use of Clean Soil Direct Transfer.

**A1.7** Situations where excess construction soils and materials are to be used on both the SO and a Direct Transfer scenario site, the MMP must reference the Combination scenario.

## Appendix 2: Use of Clean, Naturally Occurring Soil and Mineral Materials on Another Development Site (Direct Transfer)

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**A2.1** Includes the Direct Transfer of clean,\* naturally occurring soils and mineral\*\* material from one site to another development site for use, involving no waste-related regulatory environmental permitting or waste licensing.

**A2.2** Clean, naturally occurring soil and mineral materials includes:

- Soil (both topsoil and subsoil)
- Parent material\*\*\*
- Clay, silt, sands, and gravels
- Underlying geology
- Made ground composed of above materials only e.g. an embankment or berm that is to be removed for reuse without any processing

**A2.3** The materials must be sourced from:

- Greenfield development sites not subject to past contaminating industrial use\*\*\*\*
- Brownfield sites where natural soils have been extensively characterized and proven to be clean and not waste material

**A2.4** Such materials must be capable of direct use with out the need for treatment consistent with sustainability principles, certainty, and quantity as per Section 2.

**A2.5** Direct Transfer provisions do not apply to manufactured soils i.e. soils created by mixing other wastes or non-soils, mineral-based constituents, or any waste materials defined by regulation.

**A2.6** In excavating, storing, and stockpiling excess construction soils on site prior to Direct Transfer, good engineering practices should be followed to prevent any adverse impacts.

Note

\* Clean in this BMP is defined as soil “devoid of anthropogenic contamination to a degree or level that is considered harmful to living organisms.”

\*\* Regulatory provisions may be in place for materials that arise out of mineral extraction activities – refer to appropriate waste-related regulations or mining /aggregate regulations.

\*\*\* Underlying rock

\*\*\*\* e.g. chemical spillage, on-farm landfills, carcass burial pits

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## **Clean Soils With Elevated Levels of Naturally Occurring Substances**

**A2.7** Where soils have naturally elevated concentrations of substances such as geologically derived metals, metalloids, etc. that are widespread and typical of local ambient/background conditions, they may be reused via Direct Transfer. Providing that the representative concentrations (both total and leachable) of such naturally-occurring substances at the source site are comparable or below that of the receiving development site soils. This must be demonstrated via adequate site investigation at both the SO and receiving site and appropriate risk assessment for reuse at the receiving development site.

**A2.8** The principle involved is that the reuse of excess construction soils and natural materials must not increase the level of risk to the existing natural environment at the receiving site of reuse.

### **Lines of Evidence**

**A2.9** When considering its potential for contamination, the past use of the source SO must be established via desktop-based research in conformance with accepted regulatory practices, involving Phase 1 and Phase 2 Environmental Site Assessments (ESAs) and risk evaluations and assessments as required. If there is no suspicion of contamination, then, provided visual and olfactory inspection is carried out during excavation work as described in the MMP, the excess construction soils and materials can be reused (subject to the tests of suitability, quantity, and certainty being met.)

**A2.10** If source SO is a brownfield site, then the quality of the excess construction soils and materials on the site must be established and characterized by an adequate Phase 1 and Phase 2 ESA investigation in compliance with Canadian Standards Association (CSA) standards or other regulatory requirements and standards. (Refer to O.Reg 153/04 as amended.) Only if contamination can be reasonably discounted for the site as a whole, or clearly defined areas of the site, can those naturally-occurring materials be considered for Direct Transfer.

**A2.11** The QP is required to confirm that the above lines of evidence are in place when making a Declaration relating to the Direct Transfer of excess soils and materials.

**A2.12** Table 1 summarises the requirements relating to the source SO and receiving site where Direct Transfer is to take place.

**A2.13** On a case-by-case basis, excavated excess construction soils and materials not meeting the requirements and criteria set out above may be reused under regulatory approval and permitting that are subject to a greater degree of regulatory scrutiny. Refer to Appendix 3 – Soil Recycling Centres.

## Appendix 3: Soil Recycling Centres

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**A3.1** Soil Recycling Centres (SRCs) including Soil Depots and Soil Campus locations are a relatively new approach in Ontario. They are designed to facilitate the remediation and/or development of a number of sites that are located in relative close proximity. Typically, SRCs are permitted as required in accordance with local and provincial regulatory requirements and include some form of temporary (five years) soil remediation or treatment facility and are of a temporary nature. SRC sites are established to:

- Facilitate the transfer and beneficial reuse of excavated construction soils and materials between different sites where timing requires offsite stockpiling of segregated materials
- Facilitate the remediation of impacted soils and materials from brownfield sites affected by contamination
- Facilitate the transfer of excavated excess construction soils and materials which fall outside of the Direct Transfer scenario outlined in Appendix 2 – Use of Clean Soil Direct Transfer

**A3.2.** The establishment and operation of SRC facilities in Ontario is currently under development in terms of approval requirements. The utilization of SRC facilities for treatment of excess construction soils will be the subject of future versions of the BMP.

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## **Appendix 4: Qualified Person Declaration**

Please download the pdf form titled *Appendix 4: Qualified Person Declaration* from **rccao.com**.

## **Appendix 5: Materials Management Plan (MMP)**

Please download the pdf form titled *Appendix 5: Materials Management Plan (MMP)* from **rccao.com**.

We ask that you fill out these two forms and send them to:

**RCCAO**

25 North Rivermede Road, Unit 13

Vaughan, Ontario L4K 5V4

**e** manahan@rccao.com

**p** 905-760-7777

**f** 905-760-7718

## Appendix 6: Qualified Person Requirements

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Note: In the Province of Ontario under O.Reg 153/04 as amended, work conducted on impacted brownfield sites involving a RSC requires the engagement of a Qualified Professional (QP). There are regulatory stipulations that define the requirements for a QP in Ontario driven by concerns in dealing with contaminated or impacted materials. A fundamental premise of this draft excess construction soils BMP is the categorization of excavated excess construction soils as a non-waste and not subject to current waste regulations or O.Reg 153/04 requirements if no RSC is involved. In situations where an RSC may be a consideration, on a case-by-case basis, it is anticipated that the parties involved can contractually, or through various mechanisms such as reliance letter, consider the adoption and use of the approaches outlined in this draft BMP.

The final definition and requirements of a QP for the purposes of conducting work under this draft excess construction soils BMP will be finalized and agreed upon as part of the proposed piloting process and further engagement with appropriate regulatory agencies and professional associations in the Province of Ontario. It is recognized that in Ontario there are companies and professionals involved in excavation-related infrastructure projects that conduct the excavation, movement, and disposal of excess soils in compliance with current practices and regulations. These individuals would constitute an appropriate group for further consultation and development of appropriate requirements for QPs involved in executing soil movement activities aligned with this draft excess construction soils BMP.

As set out in this draft BMP, for an individual to act in the capacity of a QP, they must possess the following general attributes and requirements that will be formalized as part of planned piloting, further consultation and development. Current requirement areas are as follows:

**Corporate authority** – QP authorized to sign on behalf of their company in this area.

**Professional standing** – QP must have recognition in a professional organization or body that defines activity areas and has the capacity to sanction and provide oversight on conduct.

**Relevant qualifications** – QP to have relevant academic qualifications in relevant area. (Listing to be developed.)

**Experience** – QP should have relevant experience.

**Independence** – QP cannot be directly involved in the management or execution of the project prior to submission of the Declaration.

**Training** – QP must obtain understanding and competence in executing the requirements of this BMP. This will require the development of an appropriate training program. Details to be developed in conjunction with pilot testing and implementation planning.



## Appendix 7: Municipal Procurement Practices

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The objective of this policy/by-law would be to ensure the proper materials management process for handling excess construction soils in Ontario. This would be best handled by municipalities putting a purchasing policy and by-law in place to cover this procedure to ensure a uniform process throughout Ontario that is fair to both the owner, and contractor.

Most municipalities in Ontario have purchasing by-laws or policies of some type. While the nature and scope of these sets of rules varies somewhat from one municipality to another, in general these take the form of council-approved rules dictating how purchasing and other procurement and logistical operations of each respective municipality are to be conducted.

Municipalities have not yet adopted a standard policy or process for excess construction soils. In many cases, a council-approved policy for soil management could be put in place and then supplemented by more specific procedural rules, promulgated by the senior managers of the municipal administration. In addition to standardizing council policy and approach, a model framework would be created to implement sustainability practices that encourage the beneficial reuse of excess construction soils at the local municipal level. This new process would then give more precise direction as to how orders are to be placed and processed related to the overall handling of soils in Ontario.

To write a policy for excess construction soils, it would be wise to follow the *Municipal Act, 2001* which aims to create responsible and accountable governments and “to enhance the municipality’s ability to respond to municipal issues.” Section 224 of the Act directs municipalities to:

- (a) represent the public and to consider the well-being and interests of the municipality;
- (b) develop and evaluate the policies and programs of the municipality,
- (c) determine which services the municipality provides;
- (d) ensure that the administration policies, practices, and procedures and controllership policies, practices, and procedures are in place to implement the decisions of council;
- (e) ensure the accountability and transparency of the operations of the municipality, including the activities of senior management of the municipality;
- (f) maintain the financial integrity of the municipality; and
- (g) carry out the duties of council under this or any other act.

This set of standard rules can easily be applied to a policy related to excess construction soils, and falls under the rules and regulations of the Municipal Act, which all municipalities must follow.

Moving forward the overall approach would be to develop a set of policies on excess soils, including a municipal by-law as well as a clause to be used in all request for proposals and tender documentation for the handling, storage, and disposal of these materials.

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## **Appendix 8 – Emergency Projects**

(to be developed)

## **Appendix 9 – Example Schematics**

(to be developed)

## **Appendix 10 – Categorization of Materials**

(to be developed)

## **Appendix 11 – Qualified Person Checklist**

(to be developed)

## **Appendix 12 – Definitions**

(to be developed)

# Appendix 13: RCCAO ad in ReNew Canada magazine






Advertising Feature

**The Residential and Civil Construction Alliance of Ontario is reaching out to all stakeholders, including owners, government agencies, lenders, consultants, scientists, and contractors to encourage the sustainable and beneficial reuse of excess construction soils in Ontario.**

**We urgently need to find practical solutions to end the escalating costs, and develop best practices to manage these low risk excess soils generated from infrastructure projects.**

### Construction industry paying millions of dollars each year to move relatively clean soils to remote disposal sites

**PROBLEM – Soil Transport Wastes Millions:**

- RCCAO has undertaken analysis showing that the cost to transport and dispose of excess construction soils is in the range of 5% - 21% of the capital costs of many typical road and sewer and construction projects and costs will continue to rise unless better approaches are adopted.
- Millions of dollars are being needlessly wasted because the current regulatory regime is unable to effectively introduce programs encouraging the beneficial reuse of excess construction soils.
- Municipalities and builders need more regulatory and legal liability certainty around the acceptance of "clean" soils at receiving properties that current approaches and practices provide. These continuing liability concerns can result in limiting the availability of potential receiving sites, the escalation of tipping fees and possibly an increase in illegal dumping activities.
- Available disposal sites are being filled faster than sand, causing public concerns about increased truck traffic on roads. Cumulatively longer distances to transport excess soils also results in an increase in greenhouse gas emissions.
- Thus, a higher proportion of soils that could be recycled in infrastructure expansion and rehabilitation is instead being wasted on transport and disposal of soils.

**RCCAO Recommends Some SOLUTIONS:**

- The construction industry is working with Ontario's MOE to develop industry best management practices involving the handling of clean excess soils focusing on small to medium-sized civil, municipal, institutional and residential projects.
- RCCAO has developed a draft Excess Construction Soils Best Management Practices document based on the successful soil management Code of Practice developed in the United Kingdom.
- The best management approach is voluntary with a focus on developing beneficial reuse soil management plans including use of a qualified professional, tracking of soil movement and ultimate disposition of material.
- RCCAO best management practices are intended to be pragmatic and to fit with current responsible industry practices.
- RCCAO continues to work with key stakeholders including municipalities to ensure excess construction soils handling practices are integrated with municipal infrastructure projects and acceptable land soil receiving locations.
- Proposed excess construction soil management best practices are intended to encourage and encourage the development and application of new soil remediation technologies including the establishment of soil handling depots and soil recycling type initiatives currently being piloted in Ontario for dealing with impacted excess soils.

**Determining what other jurisdictions have done can be instructive:**

**Netherlands**

"The whole concept of sustainable land management for clean and slightly polluted soils is based on an extensive knowledge about the soil quality. Dutch soil has already been investigated for three decades, not only at contaminated sites but also at uncontaminated sites."

[View Dutch soils \(2008\) Masters of Housing, Spatial Planning and the Environment](#)

[To view the full environmental assessment report](#)

**United Kingdom**

"CLMRC was created with the backing of the UK government in 1999 as a not-for-profit company to encourage the dematerialisation and research of practical solutions for the clean up of contaminated land, and to provide a sustainable alternative to disposing of waste in landfill sites. In effect, this enables soil to be "recycled" for use on its original site, instead of having to be removed and deposited in landfill sites."

[Download CLMRC report on the UK Environment](#)

[www.clmrc.org](#)

**RCCAO members include:**

Chapman & Cutler • Granite Teams Super and Homecare Contractors Association • Home Construction Association of Ontario • International Union of Operating Engineers, Local 793 • International Union of Plumbers and Allied Trades, District Council 46 • Joint Residential Construction Council • L&LNA Local 183 • Residential Cemetery Operators Association • Soils and Area Road Builders Association



**RESIDENTIAL AND CIVIL CONSTRUCTION ALLIANCE OF ONTARIO**  
Constructing Ontario's Future

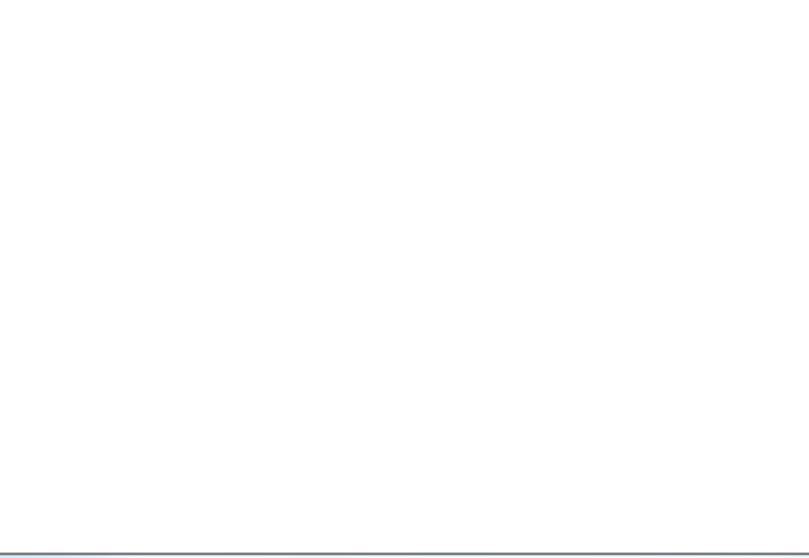
A copy of the most recent version of the draft construction industry Best Management Practices for Handling Excess Construction Soils in Ontario is available for review at RCCAO's website. For more information or to download this report, visit [RCCAO.COM](http://RCCAO.COM)

The above ad appeared as a double page spread in the November/December 2012 issue of ReNew Canada magazine.

**Table 1: Material Types\* and BMP Scenarios**

Scenario / Material types	Soil	Made Ground	Ground Infrastructure	Stockpiled Excavated Materials	Source Segregated Aggregate
Site of Origin	X	X	X	X	X
Direct Transfer	X	X			X
Soil Recycling Centre	X	X	X	X	X

\*Note: This is an example table to be based on the scenario involved what types of excavated excess materials would be eligible for management under excess soils BMP. Further definitions will be developed as part of final review and pilot testing activities.



View this report and more at  
[rcca.com](http://rcca.com)