Best Practices for Temporary Soil Storage Sites for Consideration with

O. Reg. 406/19:

On-site and Excess Soil Management in Ontario

Contents

1. Background

These best practices are intended to complement legal requirements; they are not themselves legal requirements or approvals and must not be taken to be, they are subject to and do not replace legislation or legally binding documents of other kinds. Those who create, manage, transport, receive or store excess soil must be familiar with and remain responsible for complying with all applicable current legislation and other legal requirements.

These best practices are intended to provide general concepts which may be used to address the general management of excess soil for beneficial reuse purposes.

1.1 Use of this Document

This document applies primarily to Class 2 Soil Management Sites and Local Waste Transfer Facilities which are used for temporary storage and low risk processing of excess soil. This document applies only to excess soils, which is defined as soil, crushed rock or soil mixed with rock or crushed rock that has been excavated, mainly during construction activities, which cannot or will not be reused at the site where the soil was excavated and requires relocation off site. Excess soils are generally free of contaminants and must meet the quality standards for the deposit site which they are planned to be relocated to. It is also important to note that excess soil also includes liquid soils - which are excess soils that do not meet the slump test that is outlined in Schedule 9 of Regulation 347. Liquid soil can include sediment cleaned out of a stormwater management pond, materials dredged from a lakebed or excess soils that happen to be in a liquid state when excavated.

The activities of Class 2 Soil Management Sites are regulated under O. Reg. 406/19 which allows excess soil to be temporarily stored at another location before the excess soil is either brought back to the original site to be used for a beneficial reuse or a site where the excess soil is planned to be delivered to for final reuse or disposal. Local Waste Transfer Facilities are also regulated under O. Reg. 406/19 and O. Reg. 347 for the storage/processing of liquid soil under specified circumstances.

O. Reg. 406/19 includes general regulatory requirements regarding temporary storage sites of every size; however, some aspects of the best practices may not be as relevant for small, low-risk sites. Those involved with smaller-scale projects and movements. T Those involved with smaller-scale projects and management activities are encouraged to consider whether the best practices may be useful for their project and adopt the best practices accordingly.

Regulatory Definition of a Class 2 Soil Management Site (O. Reg. 406/19 Section 1 (1))

1.(1) "Class 2 Soil Management Site" means a waste disposal site, other than a Class 1 soil management site, at which excess soil is managed on a temporary basis and that is,

(a) located on a property owned by a public body or by the Project Leader for the project from which the excess soil was excavated, or

(b) operated by the project leader for the project from which the excess soil was excavated

Plain Language Summary

A Temporary Soil Management Site does not require an Environmental Compliance Approval (ECA) such as a Landfill, Waste Processing Site, or Waste Transfer Station. The site must be operated either by a government or other public body or by the Project Leader of the generating site. Soil can only be stored for two years; however, this period can be extended up to a total of five years with approval of the Ministry of the Environment, Conservation and Parks (MECP). Additionally, the amount of soil stored at a Class 2 Soil Management Site at any one time must not exceed 10,000 m^3.

1.2 Context

In December 2019, the Government of Ontario announced a new regulation governing the use of Excess Soils under the Environmental Protection Act (EPA) "O. Reg. 406/19: On-Site and Excess Soil Management" and the accompanying "Rules for Soil Management and Excess Soil Quality Standards" document that is adopted by reference in the new regulation. An amendment was released changing the initial in force date to January 1, 2021 from July 1, 2020. Additional amendments were made in December 2020 under O. Reg. 775/20.

Soil is an important resource. The protection and conservation of soil in Ontario is a valuable component of maintaining the environment for present and future generations. The Ministry of the Environment, Conservation and Parks (MECP) encourages the beneficial reuse of excess soil in a manner promoting sustainability and the protection of the environment. The best practices described within this document are intended to assist those managing excess soil, particularly when the soil may be affected by contamination, so that excess soil is managed in a manner where human health and the environment are protected, and to ensure the prevention and mitigation of any potential adverse effects.

It should be noted that the MECP has stated the goals of the On-site and Excess Soil Management Regulatory Framework include the following:

- Provide clear rules on managing and reusing excess soil;
- limit soil being sent to landfill;
- reduces greenhouse gas emissions from soil transportation;
- reduce current burden and cost of excess soil management, while continuing to ensure strong environmental protection;
- remove barriers to brownfield redevelopment; and,
- encourage the environmentally responsible beneficial re-use of excess soils.

1.2.1 Greenhouse Gas Emissions and Economic Benefits

Of particular note is the reduction of greenhouse gas (GHG) emissions. As such, every aspect of applying the Regulation and employing these best practices should include considerations for climate change and GHGs reduction, wherever possible. It is important to note that many GHG emission reduction actions will also result in savings on time and overall costs (e.g., fuel consumption reductions). Reducing GHG emissions does not mean economic losses. When planning your excess soil management activities, seek opportunities to both reduce GHG emissions and find efficiencies of operational fuel and energy needs.

Steps should be taken throughout the project to:

- Where possible, promote the use of local firms and resources,

- Minimize the generation of excess soils from Project Areas,
- Reuse the soil on the project area as much as possible,
- Consider the establishment and use of Temporary Sites to maximize beneficial reuse options locally, where applicable,
- Where transportation of excess soils is required for a project, care should be taken to identify appropriate reuse sites that reduce the distance the soil travels, and
- Integrate technology and tracking systems to provide route optimization for hauling, to reduce fuel costs, time and GHG emissions. Carefully select routes and transport times of day that includes not only the shortest distance, but also with consideration to traffic congestion and idling times.

Considerations to reduce GHG emissions should be integrated as early as possible in the project life cycle to generate the highest reductions of GHG emissions and energy efficiency savings (*Refer to* Appendix I *for a relevant case study on how using a temporary excess soil management site not only saved time, money and the overall movement of materials, but also reduced the greenhouse gases that could have been generated*).

1.3 Definitions

The following definitions are applicable for this document (and are provided for convenience, in some cases with further explanation that in the relevant regulations). Official Definitions should be reviewed in the relevant Regulations.

Term	Definition
Soil	As defined in Ontario Regulation 153/04 (Records of Site Condition Part XV.1 of the Act): "unconsolidated naturally occurring mineral particles and other naturally occurring material resulting from the natural breakdown of rock or organic matter by physical, chemical or biological processes that are smaller than 2 millimetres in size or that pass the US #10 sieve."
Excess Soils	Soil, crushed rock or soil mixed with rock or crushed rock, that has been excavated as part of a project and removed from the project area for the project. Excess soils cannot or will not be reused at the site where the soil was excavated and must be moved off site. In some cases, excess soil may be temporarily stored and/or processed at another location before the excess soil is brought back to be used for a beneficial reuse at the site where the soil was originally excavated. Excess soil is non-hazardous, hazardous soil is by definition not excess soil and is considered waste.
Liquid Soil	Soil that has a slump of more than 150 millimetres using the Test Method for the Determination of "Liquid Waste" (slump test) set out in Schedule 9 to Regulation 347.
Dry Soil	Soil that is not liquid soil.
Regulation	The Regulation refers to O. Reg. 406/19: On-Site and Excess Soil Management, unless stated otherwise.
Soil Rules	Rules or Soil Rules refers to the document entitled "Part I: Rules for Soil Management", published by the Ministry and as amended from time to time, available on a website of the Government of Ontario as Part I of the document entitled "Rules for Soil Management and Excess Soil Quality Standards", unless stated otherwise.

Standards	Standards, refers to the document entitled "Part II: Excess Soil Quality Standards", published by the Ministry and dated December 8, 2020, available on a website of the Government of Ontario as Part II of the document entitled "Rules for Soil Management and Excess Soil Quality Standards.
Qualified Person (QP)	Within the meaning of Section 5 of Ontario Regulation 153/04, QPs are Professional Geoscientists and Professional Engineers. A QP is someone who can exercise professional judgment based on his or her experience in order to advise on appropriate reuse options for the excavated soil or excess soil, and make these decisions based on appropriate analysis and characterization of the soil. QPs either have a licence under the *Professional Engineers Act* 1990, or a certificate of registration under the *Professional Geoscientists Act*, 2000.
Supervisee	An individual who is supervised by a Qualified Person.
Project	Any project that involves the excavation of soil and includes: a. any form of development or site alteration, b. the construction, reconstruction, erecting or placing of a building or structure of any kind, c. the establishment, replacement, alteration or extension of infrastructure, or d. any removal of liquid soil or sediment from a surface water body.
Project Area	In respect of a project, a single property or adjoining properties on which the project is carried out. A project area can include various forms of development involving the excavation of soil including site alteration, construction and removal of liquid soil or sediment from a stormwater management pond or a surface water body.
Project Leader	In respect of a project, the person or persons who are ultimately responsible for making decisions relating to the planning and implementation of the project.
Hauler	The owner or operator of a vehicle used to transport excess soils. Referred to in this document as the hauler, but may also be identified as shippers, transporters or drivers.
Hauling Record	Information required to accompany each load of excess soil and to be carried by the person operating a vehicle for the transport of excess soil. Details must include: location, date and time the excess soil was loaded for transportation; the quantity of excess soil in the load; name and contact details for the person that can be contacted for inquiries about the load and the soil quality; name of the hauler, the driver and the license plate; the location where the soil is to be deposited. There is no specific form provided that needs to be filled. [Note: from the period of January 1, 2021 to January 1, 2022, fewer hauling record details are required and it can be provided verbally.]
Bill of Lading/Manifest/Ticket	These are records required by companies and entities engaged in the tracking and movement of excess soils. They may not refer

	to the required Hauling Record document required by the regulation though they are likely to have similar information included on them. If all Hauling Record required information is included on these documents they can also serve as the Hauling Record.
Class 1 Soil Management Facility	A soil bank storage site or a soil processing site; [must be operated under a waste-Environmental Compliance Approval].
Class 2 Soil Management Facility	A waste disposal site, at which excess soil is managed on a temporary basis and that is: a. located on a property owned by a public body or by the Project Leader for the project from which the excess soil was excavated, and b. operated by the Project Leader for the project from which the excess soil was excavated.
Soil Bank Storage Site	A waste disposal site, other than a Class 2 soil management site, at which excess soil is managed on a temporary basis and that is operated, by a person who is **not the Project Leader** for all of the projects from which the excess soil was excavated, for the primary purpose of storing the excess soil from one or more projects until the excess soil can be transported to a site for final placement or disposal [must be operated under a waste-Environmental Compliance Approval].
Soil Processing Site	A waste disposal site, other than a Class 2 soil management site or soil bank storage site, at which excess soil is managed on a temporary basis, that is operated for the primary purpose of processing excess soil in order to reduce contaminants in the excess soil [must be operated under a waste-Environmental Compliance Approval].
Low Risk Processing Activities	Must occur at the Project Area, at a Class 2 Soil Management Sites or at a Local Waste Transfer Facility and includes: i. Passive aeration; ii. Mixing of soil [for Class 2 Soil Management Sites: from projects that have the same Project Leader] and provided that the soil being mixed with it is of similar quality to it, is destined for the same reuse site and the mixing is not carried out for the purpose of diluting the concentration of contaminants in the soil. iii. Soil turning; iv. Size-based sorting; v. Sorting it for the purpose of removing debris; and vi. Passive or Mechanical dewatering [only at Project Area or Local Waste Transfer Facility]. Under certain circumstances, and if regulatory rules are followed, natural additives or polymers can be mixed with liquid soil, this is for the purpose of solidification/dewatering soils for transport and is not intended for the purpose of reducing concentration of contaminants into the soil. These can occur without the need to obtain a waste ECA.

Local Waste Transfer Facility	Has the same meaning as in Regulation 347 and is a site: a. at which waste from field operations is received, bulked, temporarily stored and transferred, b. that is owned or controlled by the person who undertakes the field operations referred to in clause (a) or by a person on whose behalf those field operations are undertaken, c. at which no waste is received other than waste from field operations, d. that is used primarily for functions other than waste management, and e. that engages in low risk processing activities.
Registry	The registry is described in Section 50 of the Resource Recovery and Circular Economy Act, 2016.
Reuse Site	A site at which excess soil is used for a beneficial purpose and does not include a waste disposal site.
Waste Disposal Site	Has the same meaning as in the EPA and means: a. any land upon, into, in or through which, or building or structure in which, waste is deposited, disposed of, handled, stored, transferred, treated or processed, and b. any operation carried out or machinery or equipment used in connection with the depositing, disposal, handling, storage, transfer, treatment or processing [operated under a waste-Environmental Compliance Approval]
Waste	Regulation 406/19 does not address non-soil materials classified as waste. Please refer to Regulation 347 (as amended) for the full list and conditions for which materials are classified as wastes and how they should be appropriately managed.

Additional definitions can be reviewed in the current versions of O. Reg. 406/19, the adopted Rules for Soil Management and Excess Soil Quality Standards, O. Reg. 153/04, O. Reg. 347 and the Environmental Protection Act (EPA).

For additional relevant legislation, regulations, guidance and tools see Additional Resources.

2. Site Selection

Temporary soil storage sites are likely to be established on a wide range of properties with site-specific considerations and include Class 1 Soil Management Sites, Class 2 Soil Management Sites (including soil processors and soil banks) as well as local waste transfer facilities. O. Reg. 406/19 includes a set of simple regulatory rules, which allows for the establishment of Class 2 Soil Management Sites without the need to obtain a waste-Environmental Compliance Approval. Those who establish Class 2 Soil Management Sites should consult with the local MECP District Office to clarify the appropriate site-specific controls to be implemented to prevent adverse effects.

In addition to Conservation Authorities mapping of sensitive areas and restricted sites, municipal or regional government may have mapped out protected areas in their official plans and have by-laws for site alteration and noise. It is important to review the applicable Plan to understand any site restrictions and if permits are required by one of these agencies.

Consideration should be given to the sensitive local road jurisdictions (e.g. school zones, hospital zones, long term road construction disruptions) and half-load restrictions as well as peak traffic considerations in planning the haul routes.

Regulatory Requirements (O. Reg. 406/19 Section 12(1))

9. The project leader or the operator of the Class 2 soil management site must provide written notice to the Director in accordance with subsection (4) before the excess soil begins to be deposited at the Class 2 Soil Management Site.

MECP District Office Locator

To determine the appropriate MECP office to notify, please visit the following link and add in the location of the proposed Class 2 Soil Management Site:

https://www.ontario.ca/environment-and-energy/ministry-environment-district-locator

Conservation Authority Office Locator

Proponents should determine if their proposed site is in a regulated area by contacting the local Conservation Authority:

https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

Best Practices

- It is recommended that the local MECP District Office be notified early in the process, at least 30 days before soil begins transport to the Class 2 Soil Management Site would be advisable. In the event that there are concerns with the temporary site, this provides time for the temporary site manager to discuss and resolve any issues with MECP.
- Consultation with the local municipal or regional government and Conservation Authority is also advised.
- Project Leaders should carefully consider locations for site selection, to limit complaints, reduce risks to health and safety and to select locations strategically. It is recommended

that Class 2 Soil Management sites are located away from residential areas and other environmentally sensitive sites where possible.

2.1 Permits and Approvals

There are no specific regulatory requirements under O. Reg. 406/19 for MECP permits. For higher risk soil storage and processing activities, MECP waste-Environmental Compliance Approvals are required under operation of a Soil Bank Storage Site or a Soil Processing Site. Other MECP approvals such as a sewage-Environmental Compliance Approval may also be required for the discharge of liquids from dewatering activities at Local Waste Transfer Facilities.

Consideration should be given to whether municipal approvals or permits are required for various temporary soil storage sites. These may include local restrictions for storage site volumes as a permitted use, or limitations on stockpile heights beyond those listed in O. Reg. 406/19. These sites may fall under a municipal Site-Alteration or Fill By-law and/or municipal zoning requirements. The municipality will likely have by-laws for nuisances such as noise and dust which could affect hours of operation. Residential neighbours of proposed sites may raise objections to their town council.

The municipality and/or the conservation authority may have areas with environmental protections. In considering a location for a temporary soil site, proponents should consider if the location has environmental protections enacted by the Greenbelt Plan, Niagara Escarpment Plan or other conservation authorities. See **Conservation Authorities**

Ontario has 36 Conservation Authorities (CA) which are generally located in southern Ontario and around large population centres in the north. In 2006, the Minister of Natural Resources approved the individual “Development, Interference and Alteration” Regulations (Section 28) for all conservation authorities. Through these regulations, conservation authorities are empowered to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and inland lakes shorelines, watercourses, hazardous lands and wetlands. Development taking place on these lands may require permissions from the CA to confirm that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land are not affected. Conservation authorities also regulate the straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or for changing or interfering in any way with a wetland.

Proponents should determine if their proposed site is in a regulated area by contacting the local conservation authority.

2.1 Additional Site Location Considerations – Provincial Plans

In Ontario, there are a number of provincial plans which apply to particular areas of the province. With the exception of the Niagara Escarpment Plan, municipal official plans and zoning by-laws are the primary vehicle for implementing provincial plans. These plans include: the Growth Plan for the Greater Golden Horseshoe, the Growth Plan for Northern Ontario, the Greenbelt Plan and the Oak Ridges Moraine Conservation Plan

These plans may contain areas requiring special environmental considerations. Each of these areas has special rules defined in the plans that may impact the ability to operate a temporary site. For example, in a Category 1 landform conservation area in the Oak Ridges Moraine Conservation Plan, significant landform features are to be maintained in the natural undisturbed form and the disturbed area to be less than 25% of the total area [Section 30. (5) of ORMCP (2017)].

Proponents should determine if a proposed site is within one of these provincial plan areas. If so, it is important to review the applicable Plan to understand any site restrictions and if permits are required by one of these agencies. An initial consultation with applicable agencies would assist in determining if the proposed site permitting process and likelihood of approval.

The proponent should also be aware that, in some cases, financial assurance(s) may be required for the temporary site and/or the arterial roads used by the site.

Below are some protected areas for consideration:

- Conservation Authorities (36 across Ontario)
- Greenbelt - https://www.ontario.ca/document/greenbelt-plan-2017
- Protected countryside
    - Niagara Peninsula Tender Fruit and Grape Area
    - Holland Marsh
    - Natural Heritage System
- Urban River Valleys
- Niagara Escarpment Plan Area - Activities with the Niagara Escarpment Plan Area are managed by the Niagara Escarpment Commission (NEC) https://escarpment.org/home. Within the rest of the Greenbelt the activities are managed by the local municipality.
    - Escarpment Natural and Protection Areas
    - Minor Settlement Area
    - Urban Area
- Oak Ridges Moraine Area - https://www.ontario.ca/page/oak-ridges-moraine-conservation-plan-2017
    - Core Areas
    - Natural Linkage Areas
    - Countryside and Settlement Areas
        - Rural Settlement
        - Settlement Area

There are also special areas that may be mapped or defined in the local municipality's official plans:

- Agricultural System
    - Prime Agricultural Lands
    - Speciality Crop Area
- Water Resource System
    - Key Hydrologic Area
- Landform Conservation Areas
- Parkland, Open Space and Trails

In addition, more detailed mapping is available with the following links:

- Greenbelt Plan Detailed Maps https://www.greenbelt.ca/greenbelt_plan_detailed_map_overview
- An interactive site operated by Neptis https://www.neptisgeoweb.org/
- ORMCP maps at https://www.ontario.ca/page/oak-ridges-moraine

for more information and links regarding these sites. Locating a temporary site within a Conservation Area or other environmentally sensitive areas may expand the permitting requirements, extend the time it takes to get a permit and reduce the likelihood of obtaining a permit. In some cases, larger scale temporary sites may not be suitable in parts of environmentally sensitive areas.

Permit application fees and/or financial assurances may be required for temporary soil storage sites and/or for the arterial roads used by the site.

An initial verbal consultation with the applicable agencies is strongly recommended in determining the proposed site permitting process and the likelihood of approval.

Best Practices

- Begin the permit process as early as possible. Depending upon the location and use of the site permitting can take up to one year; and,
- generally, temporary soil storage activities should be located outside of Conservation Authority protected areas.

2.2 Site Preparation

Best Practices

Where applicable, depending on project location, size and other variables, the following documents should be prepared:

- Pre-condition and environmental survey;
- site grading report and drainage plan; and
- erosion and sediment control plan.

2.3 Qualified Person (QP)

As a Temporary Site will be part of a specific Project or with a specific Project Leader, the QP for the Temporary Site will likely be the QP for the Project. However, as there are no Regulatory requirements for direct QP involvement with a Temporary Site, they will act as appointed by the Project Leader.

The municipality may, under the Site Alteration Permit, assign their own Qualified Person to provide additional oversight and validation.

Regulatory Requirements (O. Reg. 406/19 Section 6 (4)

6. (4) If the substance or other material mentioned in paragraph 8 of subsection (3) contains a natural or synthetic polymer, the excavated soil is designated as waste unless the project leader for the project or the **operator of the project area retains a qualified person** to do the following or to supervise a supervisee to do the following and the qualified person or supervisee does the following:

1. Develop written procedures to ensure the appropriate and safe use of the substance or other material within the project area during the dewatering or solidification process, having regard to,

    i. any information supplied by the producer of the substance or other material, and
    ii. any other information that, in the opinion of the qualified person, is relevant to the use of the substance or other material.

2. Give a copy of the written procedures to the project leader or to a person designated by the project leader.

3. If, after the excess soil is dewatered or solidified, it will be finally placed at a reuse site, prepare a document that sets out the following:

    i. Identification of the substance or other material, the mixing rates used to dewater or solidify the soil and the amount of liquid soil that was dewatered or solidified.
    ii. Having regard to the information mentioned in subparagraphs 1 i and ii, **instructions regarding storage and final placement** at the reuse site of the dewatered or solidified excess soil to ensure that the storage and final placement do not cause an adverse effect at the reuse site.
    iii. Confirmation that if the instructions referred to in subparagraph ii are followed, the **storage and final placement of the excess soil will not cause an adverse effect**.

Plain Language Summary

In some cases, there may be a QP from the Project Area who has some involvement with soil management at a temporary site. For example, if a natural or synthetic polymer is added at the Project Area or a Local Waste Transfer Facility, QP's will be responsible for the instructions on storage of the material until it is finally placed.

There are also cases where sampling at the Project Area is not practical. In these cases, soil may be relocated to a Class 2 Soil Management Site or a Local Waste Transfer facility and the QP from the Project Area will be responsible for completing sampling, promptly upon arrival at the temporary site.

Best Practices

Temporary sites should be established and operated in consultation with a QP.

With respect to the QPs involvement at the Temporary Site, the following Best Practices should be considered as possible activities by the QP:

- Assist with site selection;
- assist with pre-condition (baseline) soil and groundwater assessment;
- assist with assessment/audit of temporary site restrictions and storage requirements;
- assist with designing environmental controls (i.e., use hard surfaces, control stormwater, dust, security features);
- provide input into traffic management and control into and out of the Temporary Site as well as within the Temporary Site;
- assist with audit sampling and documentation;
- assist with and educate the Project Leader around the volume limitations and stockpiles sizing requirements as outlined in the Regulation and Rules;
- provide guidance around the segregation and separation of excess soils with varying geotechnical properties for the ease of reuse at a deposit site;
- verification of soil quality and quantities sent back to the Project Area, reuse sites or disposal facilities;
- assist with notifications and communications to MECP and local municipalities;
- assist with post-condition assessment and site rehabilitation/closure; and,
- provide recommendations with sound judgement and with climate change considerations.

2.4 Arterial Road and Traffic Management

It is important to consider how traffic related to facility operations can impact the local community when selecting a temporary soil storage site. It is recommended that owners and operators engaged in excess soil management activities should have a **Traffic and Transportation Management Plan**. For more information and best practices see **Traffic Management**.

2.5 Nuisance Considerations

Temporary soil storage site operators need to be cognisant of the potential for impacts from air emissions (i.e. dust, odour), noise and aesthetic considerations. Prior to selecting a site, proponents should check the following to understand site operational restrictions.

Other Regulatory Considerations

1. Review local noise by-laws; and,
2. Review zoning requirements.

Best Practices

- Review neighbouring properties and their uses to assess air and noise impacts on those properties (i.e. residential properties versus commercial or industrial properties).

See **Source Protection Planning**

The Clean Water Act, 2006 is part of the multi-barrier approach to ensure clean, safe and sustainable drinking water for Ontarians, by protecting sources of municipal drinking water such

as lakes, rivers and well water. Under this legislation, the Drinking Water Source Protection Program was established by the Government of Ontario. This resulted in the development of science-based assessment reports and local source protection plans by multi-stakeholder source protection committees, supported by Source Protection Authorities.
There are 22 approved source protection plans being implemented across Ontario, by various implementing bodies including municipalities, provincial ministries and conservation authorities. Source protection plans contain policies that either recommend or require that actions be taken to address activities identified as threats to drinking water sources. Further information on source protection planning can be found here: https://conservationontario.ca/conservation-authorities/source-water-protection.

Best Practices

The operator of a temporary soil storage site should early in the process identify if the proposed Temporary Site is in a Source Water Protection Region or Area and contact the appropriate Source Protection Authorities to determine if any additional precautionary measures or permitting requirements need to be met.

Air and Noise Controls for more information.

3. Operations

3.1 Storage and Placement

Regulatory Requirements (O. Reg. 406/19 Section 21(1))

2. The excess soil stored at the Class 2 soil management site at any one time must only be excess soil in respect of projects of the project leader.

3. The amount of excess soil stored at the Class 2 soil management site at any one time must not exceed 10,000 m^3.

Regulatory Requirements (O. Reg. 406/19 Section 24)

24. The operator of a project area, local waste transfer facility, Class 2 soil management site or reuse site that is not governed by an instrument mentioned in paragraph 4 of subsection 3(2) shall ensure that any soil stored at the site is stored in accordance with the Soil Rules.

Requirements under the Soil Rules Document (Rules for Soil Management Section C 1.)

1. SOIL STORAGE RULES

For the purposes of section 24 of the regulation, soil stored at a…Class 2 soil management site…must be stored in accordance with the following:

(1) General

1. Soil shall be managed in such a way as to prevent any adverse effects associated with the receiving, processing, storage and movement of soil, including management of:

   i. noise;
   ii. dust;
   iii. mud tracking;
   iv. leaching;
   v. run-off and erosion; and
   vi. potential outdoor air impact(s), including odour issue(s).

2. The soil must be stored in stockpiles and the maximum size of each stockpile shall not exceed 2,500 cubic metres.

3. Soil from a project area that is required to complete sampling and the soil has not been sampled, must remain segregated from soil from another project area. Any soil that is sampled and analysed must be kept segregated from other soil and soil of different qualities intended for different beneficial uses must also be kept segregated.

4. The soil stored must not be stored at a location:

   i. within 30 metres of a waterbody; and
   ii. within 10 metres of the property line (boundary).

5. Soil shall be stored in a manner that prevents any contaminants from the soil from leaching into the ground water.

Requirements under the Soil Rules Document (Rules for Soil Management Section C 2)

2. ADDITIONAL RULES FOR CLASS 2 SOIL MANAGEMENT SITES

(1) Excess soil from different projects/project areas shall remain segregated unless the excess soil meets the same applicable excess soil quality standards table and is destined for the same reuse site.

Plain Language Requirements for Soil Storage at Temporary Sites

In general, any soil that is stored at a Class 2 Soil Management Site needs to be stored in a manner that does not cause an adverse effect.

1. Soil stored at a specific Temporary Site may only originate from one or more projects belonging to an individual Project Leader.
2. Class 2 Soil Management Sites can store up to 10,000 m^3 at any one time.
3. Soil stockpiles must not exceed 2,500 m^3. It is important for operators to manage incoming loads and quantities of soil to ensure compliance.
4. Soil received at a Class 2 Soil Management Site that has not been sampled, must remain segregated from soil from another project area.
5. It is not acceptable to mix soils from different sources unless they meet the same excess quality standard and will be used at the same reuse site, for the same beneficial reuse.
6. Soil stockpiles must not be placed within 30 metres of a waterbody.
7. Soil stockpiles must not be placed closer than 10 metres to the property line, unless allowed by special conditions.
8. Soil shall be stored in a manner that prevents any contaminants from the soil from leaching into the ground water. This may require placement on impermeable surfaces or placement of liners, drainage and containment and covering of piles.
9. Proponents and operators of sites should be aware that there is a two (2) year time limit from when excess soil first arrived at the temporary site to when it is finally deposited at a reuse site. This can be extended up to five (5) years as long as the operator can prove that the timeline is necessary to reuse the soil and there is no adverse effect resulting from the soil staying at the Temporary Site. The MECP Director must be notified and accept the terms for this extension to be granted.

Best Practices

Since every site is different, proponents should investigate various measures to ensure that all stockpiled soil and its placement is in accordance with Regulations, Municipal Permits, Site-Specific Instruments and Industry Standard practices. For example, load tracking of both inbound and outbound soils coupled with surveying are effective control mechanisms to confirm soil quantities and ensure compliance. Also, if soil is being stored from multiple sites, QA/QC protocols should be adhered to with QP supervision.

The following are measures that can be used, depending on site characteristics, for the safe storage and placement of soils at a temporary soil storage site.

The operations of receiving, processing, and storage of soil may need to address the following depending on site characteristics. Click on the link for more details for each section:

- **Source Protection Planning**
- **The Clean** Water Act, 2006 is part of the multi-barrier approach to ensure clean, safe and sustainable drinking water for Ontarians, by protecting sources of municipal drinking water such as lakes, rivers and well water. Under this legislation, the Drinking Water Source Protection Program was established by the Government of Ontario. This resulted in the development of science-based

assessment reports and local source protection plans by multi-stakeholder source protection committees, supported by Source Protection Authorities.

There are 22 approved source protection plans being implemented across Ontario, by various implementing bodies including municipalities, provincial ministries and conservation authorities. Source protection plans contain policies that either recommend or require that actions be taken to address activities identified as threats to drinking water sources. Further information on source protection planning can be found here: https://conservationontario.ca/conservation-authorities/source-water-protection.

Best Practices

The operator of a temporary soil storage site should early in the process identify if the proposed Temporary Site is in a Source Water Protection Region or Area and contact the appropriate Source Protection Authorities to determine if any additional precautionary measures or permitting requirements need to be met.

- Air and Noise Controls (including dust and outdoor air impacts);
- **Mud Tracking;**
- leaching (see Plain Language #6 above); and,
- **Erosion and Sedimentation Controls.**

3.1.1 Liquid Soil Storage

Requirements under the Soil Rules Document (Rules for Soil Management Section C 1)

1. SOIL STORAGE RULES

(2) Liquid Soil

Liquid soil that is stored at a project area or a local waste transfer facility shall be managed in accordance with the following:

1. All storage and processing locations of liquid soil, processed or dewatered or solidified soil and process residues shall be readily accessible for inspection by a provincial officer.
2. No more than 10,000 cubic metres of liquid soil, processed or dewatered or solidified soil and process residues may be present at the site at any one time.
3. All liquid soil, processed or dewatered or solidified soil and process residues that are liquid shall be stored in a leakproof container on an impermeable surface in a manner sufficient to contain and prevent the material from escaping into the natural environment.

Best Practices

Liquid soil storage and processing is not permitted at Temporary Storage sites. Liquid soil storage and processing without an Environmental Compliance Approval is only permitted at the Project Area and at a Local Waste Transfer Facility.

3.2 Source Protection Planning

The Clean Water Act, 2006 is part of the multi-barrier approach to ensure clean, safe and sustainable drinking water for Ontarians, by protecting sources of municipal drinking water such as lakes, rivers and well water. Under this legislation, the Drinking Water Source Protection Program was established by the Government of Ontario. This resulted in the development of science-based assessment reports and local source protection plans by multi-stakeholder source protection committees, supported by Source Protection Authorities.

There are 22 approved source protection plans being implemented across Ontario, by various implementing bodies including municipalities, provincial ministries and conservation authorities. Source protection plans contain policies that either recommend or require that actions be taken to address activities identified as threats to drinking water sources. Further information on source protection planning can be found here: https://conservationontario.ca/conservation-authorities/source-water-protection.

Best Practices

The operator of a temporary soil storage site should early in the process identify if the proposed Temporary Site is in a Source Water Protection Region or Area and contact the appropriate Source Protection Authorities to determine if any additional precautionary measures or permitting requirements need to be met.

3.3 Air and Noise Controls

The local municipality will likely have a Noise By-law and a nuisance by-law for dust and air quality. The by-laws may have defined quantifiable limits for noise and dust or they may be based on the degree of disturbance to the neighbours.

Best Practices

Operations of temporary soil storage sites can mitigate air and noise impacts through various measures and being diligent with their activities. Some suggestions include:

1. Operating within the noise by-law acceptable hours.
2. Reduce the practise of slamming the truck's tail gate to shake out any remaining soil to limit noise disruption.
3. Active dust control while receiving and removing soil (i.e. sweeping, tarping of piles if possible, wetting techniques).
4. Active dust control during storage (i.e. watering, calcium chloride application, vegetating, capping stockpiles).
5. Monitoring of soils for odour from organic components.
6. Having a protocol to address soils that do not meet site requirements for odour and need to be quarantined and removed.
7. Regular inspection of the site to ensure compliance and correct deficiencies.

Attention should be paid to seasonal variations and specific controls that may need to be implemented. For example, wetting techniques for dust control may not be feasible in winter. Odour controls may need to be implemented and maintained during warmer months compared to colder months.

3.4 Erosion and Sedimentation Controls

Erosion and Sedimentation Controls are to:

- Minimize the potential for erosion of the limited quantity of exposed and/or disturbed soils;
- minimize the potential for the transport of suspended soils/silt from the work areas to locations outside of the project site;
- minimize the potential for off-site transport of suspended soils/silt; and,
- protect wetlands, watercourses, and the storm sewer system from intercepting erosion and sediment loading or other discharges from occurring.

The municipal Site Alteration By-law will define their requirements for the control of erosion, drainage, and sediment. Municipalities may request temporary sites to use the following references for the management of construction erosion and sediment control guidance: i) 2002 CCME Suspended Solids Guideline (as amended); ii) CSA Erosion and Sediment Control Inspection and Monitoring Standard (as amended); iii) Erosion and Sediment Control Guideline for Urban Construction 2019 by TRCA (as amended).

Best Practices

As the description implies, excess soils on a temporary soil storage site will be stockpiled at the site temporarily. Some considerations to limit erosion and leaching include:

- Soil stockpiles should be maintained with a maximum 2:1 horizontal to vertical slope;
- stockpiles should be constructed in a manner that does not allow for the ponding of water;
- stockpiles may be tarped or covered to mitigate erosion from rainfall; and,
- if the potential for quality uncertainty in the excess soil is identified, soil stockpiles may be placed on an impervious layer (i.e. asphalt/concrete where available) or be placed on a liner. These measures will assist in the mitigation of any leaching into the subsurface from placed soils.

If the site has drainage infrastructure (i.e. storm drains, culverts, ditches), attention should be paid to ensuring this infrastructure is protected from potential erosion related to stockpiled soils. Some measures to sediment control may include:

- Removing catch basin grates, adding a geotextile filter fabric over each catch basin frame, and then re-installing the grate over the geotextile fabric;
- hay bales secured with sandbags/wooden stakes or silt control socks installed around the perimeter of catch basin inlets;
- placement of silt control fence along perimeters of soil stockpiles; and,
- locating stockpiles in locations away from the ability to influence stormwater infrastructure (i.e. downgradient of storm sewer catch basins).

All site control measures need to be regularly inspected and maintained to ensure they are working effectively at mitigating erosion and sediment loading.

3.5 Mud Tracking

A common issue related to earthwork activities is the tracking of mud out of the site and onto public roadways. Truck traffic on-site can lead to tracking of soil onto the arterial roads exiting the site leading to unsafe or nuisance conditions. It is important to assess the site operations and mitigate this mud tracking. Depending on the road designation, each regulatory agency may have specific requirements to address this issue. Proponents of these sites should ensure they are in-compliance and meeting the requirements of these agencies.

Best Practices

Common methods of mud tracking reduction include:

- Mud mats – pathways constructed of angular materials (i.e. a bed of 50mm and 150mm clear-stone);
- wheel washes and tire cleaning;
- asphalt paved surfaces for truck traffic minimizing tire contact with dirt surfaces;
- cleaning and sweeping of arterial roads; and,

- restriction of operating hours during wet conditions.

3.6 Traffic Management

Access and egress from temporary soil storage sites can have an impact on roads and local traffic conditions. It is important to assess these access and egress points with expected volumes to determine if site traffic will negatively affect local conditions.
Additionally, proper consideration of traffic flow and management on the site should be considered.

Other Regulatory Considerations

Proponents should also verify road designations to determine which level of government is responsible for the specific roads. Each government entity may have different requirements and may impose different controls based on site traffic. For example, roads designated as highways under the Ministry of Transportation (MTO) will have different requirements from those designated as municipal roads governed by the local region or municipality.

Operators of temporary soil storage sites should also ensure that they understand half-load restriction periods and their duration. This will impact soil loads coming into and out of the site during the spring thaw months.

Best Practices

It is recommended that owners and operators engaged in excess soil management activities should have a **Traffic and Transportation Management Plan** that should address the following concerns and considerations:

- Consideration should be made to size of entrances and exit locations to allow for proper vehicular traffic flow (i.e. where feasible, limit left hand turns for trucks into a site);
- limit idling, consider implementing non-idling requirements, measurements and tracking;
- It may also be necessary to ensure that traffic control personnel are present during peak traffic movements to mitigate impacts to local road congestion;
- consider appropriate speed limits on site;
- ensure adequate space for vehicles to back-up or turn around;
- limit truck queuing and parking on public roadways,
- where feasible, integrate dust control and **Mud Tracking** prevention;
- limit noise related to truck traffic:
    - configure the site to use existing physical barriers such as buildings, fences or soil piles to act as sound barriers.
- Haul routes between project areas, reuse sites and temporary soil storage sites should consider:
    - municipal trucking routes;
    - local load restrictions and seasonal load limits, particularly those for March – May;
    - avoid residential streets where possible;
    - attempt to avoid traffic congestion (through route selection and time-of-day considerations); and,
    - where possible, hauling routes should take the shortest available route, or select routes that will emit the lowest amount of greenhouse gas emissions.

When preparing a **Traffic and Transportation Management Plan** those managing excess soils should consult with local upper-tier and lower-tier municipalities regarding appropriate transportation routes.

Additional Resources

Ontario Traffic Manual – Book 7: Temporary Measures

OTM Book 7 addresses the application of traffic control devices in temporary 'work zones' and may provide helpful reference points and ideas for traffic management.

3.7 Quality Assurance and Quality Control

It is important that operators of temporary soil storage sites have a Quality Assurance and Quality Control (QA/QC) program to assess soil quality and management of soil on site. Operators should consider implementing an audit sampling program to verify soil quality and compliance with temporary site rules.

QPs from the Project Area where soil originates are required to complete the assessment of soils for the site. They will liaise with the temporary site and will play a key role in reviewing reports from inbound soils and verifying reuse site quality compliance for outbound soils.

It is important to note that all soil that is temporarily stored at Class 2 Soil Management Site will have an identified reuse site before soil is received. For larger sites and for sites with known or suspected contamination, this is required as part of the Excess Soil Destination Assessment Report requirements for the Project Area planning documentation. Further direction on what is required in this report can be found in the **Soil Rules**. However, even if the planning requirements are not triggered and an Excess Soil Destination Assessment Report is not required, the location of where the soil is to be sent for reuse will be identified before soil leaves a Project Area.

In some instances, it is possible that off-spec or unsuitable loads are received at the site. It is important that the Operator and QP develop a "Rejected Load Procedure" to address:

1. Load inspection
2. Quarantining of loads
3. Communication between applicable parties, such as the Project Leader from the Project Area on how to manage rejected loads
4. Training of staff on how to identify, document and appropriately manage non-compliance loads

Best Practices

Soil quality and characterization should take place prior to the soil arriving at the temporary site. However, in some circumstances this may not be feasible. If the temporary site will be used as a holding area to confirm quality, the following best practices are suggested:

- Where possible, store the soil of unknown quality on an impermeable surface (concrete or asphalt).
- Keep the un-sampled and un-analyzed soils separate from the know quality soils on-site and treat the soil as "quarantined" until the quality is confirmed.
- Engage the Project Leader's QP to follow the pile sampling and analyses requirements set out in the Soil Rules.
- No low-risk processing activities shall occur until the soil quality is confirmed.

- The piles shall be clearly identified as unknown quality until the Project Leader has confirmed the quality through the QP and has instructed the Temporary Site operator to remove the “quarantined” status and signage.
- No low-risk processing activities shall occur until the soil quality is confirmed.
- Once the soil quality is confirmed, ensure that the soil is transferred to a reuse or final deposit site that is acceptable for the soil quality. If the soil has been identified as contaminated, ensure that the soil is transferred to an appropriately approved treatment facility or disposal site.
- Ensure that the original ground surface in the storage area is appropriately assessed and remediated, if deemed necessary.

3.8 Site Security

Best Practices

Operators of temporary soil storage sites should maintain sufficient site security to prevent trespassing, prevent illegal dumping, and mitigate nuisance to neighbours. Measures for site security will vary depending on site characteristics but can include the following:

- Fencing and gates (snow fence, temporary or metal fencing);
- jersey barriers and blocks;
- indoor storage (if soil volumes and facility availability permit);
- signage;
- security cameras;
- gate personnel; and,
- off-hour security staffing, inspections or visits.

It is important to note that in some cases, sites may become inactive while waiting for the beneficial reuse site to be ready to receive stockpiled soils. As such, operators should still maintain regular site inspections to monitor site conditions and site security.

3.9 Load Tracking

It is a requirement under the Regulation for sites that are generating larger amounts of excess soil or which have suspected or known contamination, that excess soil is tracked from the Project Area where soil is generated, to its final destination. Temporary soil storage sites are part of the tracking process and need to ensure they are operating in compliance with O. Reg. 406/19. This tracking system will vary with each Project Area, records may be maintained in paper or electronic systems, or a combination of both. Operators of temporary sites should be aware of these tracking systems and ensure receiving of soil loads are properly documented.

Under O. Reg. 406/19, haulers of excess soil are required to maintain a hauling record for each load of soil that is transported to and from a Class 1 Soil Management Site, a Class 2 Soil Management Site, a Local Waste Transfer Facility, reuse site or waste disposal site. Part of this hauling record requirement includes a declaration from the operator of these sites acknowledging the deposit of the excess soil.

Regulatory Requirements for Tracking System (O. Reg. 406/19 Section 16)

16. The project leader for a project shall, if the project leader is required to file a notice under section 8 in respect of the project, before removing from the project area soil that will become excess soil once removed, develop and apply a tracking system, in accordance with the Soil

Rules to track each load of excess soil during its transportation and deposit to a reuse site, local waste transfer facility, landfilling site or dump, and any transportation to and from a Class 2 soil management site.

Rules for Soil Management for Tracking Systems (O. Reg. 406/19 Rules Document, Section 5)

(1) For the purposes of section 16 of the regulation, a tracking system must be capable of tracking the following information in respect of each load of excess soil that is removed from the project area:

1. The locations of the project area where the soil was excavated and stockpiled, if applicable, and the quality of the soil associated with those locations and stockpiles.
2. **The quality of the load of excess soil being removed from the project area, unless the soil is to be sampled at a Class 2 soil management site.**
3. The quantity of the load of excess soil being removed from the project area.
4. The location of the site at which the excess soil is to be deposited as communicated to the driver of the vehicle.
5. The date and time the excess soil left the project area.
6. The person from the project area responsible for overseeing the loading of the excess soil for transportation.
7. The name of the corporation, partnership or firm transporting the excess soil, the name of the driver of the vehicle and the number plates issued for the vehicle under the Highway Traffic Act.
8. The date and time the excess soil was received at the site where the excess soil has been deposited.
9. The contact information of the person who acknowledged receipt of the load of excess soil on behalf of the site where the excess soil was deposited.
10. Confirmation that the vehicle that deposited the excess soil and the volume of soil received at the site where the excess soil was deposited is the same as that which left the project area.

(2) If excess soil is to be managed temporarily at a Class 2 soil management site, all the information described in subsection 5 (1) in Section B of PART I of this document (above) must be tracked by the project leader, or the operator of the Class 2 soil management site, in respect of each load of excess soil which has been managed at that site and "project area" shall be substituted with "Class 2 soil management site".

(3) The tracking system must be capable of tracking information in respect of the total number of vehicles and total volume of excess soil that has left a project area for a site at which the excess is to be deposited and confirmation that the total number of trucks and volume of excess soil received at the site is the same as that which left the project area.

(4) The tracking system must be able to produce reports upon request to respond to any inquiries with respect to the information of each load of excess soil to be tracked.

(5) The tracking system must include procedures or other methods to verify the accuracy of the information required to be tracked in respect of each load of excess soil that is to be removed from the project area.

(6) The tracking system must include procedures or other methods to prevent any form of fraud or other wrongdoing in the management and transportation of excess soil.

Plain Language Requirements for Temporary Sites Soil Tracking

Under the Soil Rules document, operators of Temporary Sites need to have records to document soil received with the following information:

1. The municipal address or, if a municipal address is not available, the location of the project area(s) from which the excess soil originated;
2. The dates that excess soil was received from each project area and the total quantity and quality of excess soil received;
3. For each segregated excess soil stockpile, the quality and quantity of excess soil and the location of the project area from which it originated; and
4. The confirmed reuse site(s) as part of the excess soil destination assessment report and the date on which the reuse site(s), Class 1 soil management site(s) and landfill(s) or dump can start to receive the relevant excess soil.

For the haulers to complete the Hauling Record as required under the Regulation the temporary site operator or representative must contribute the following information:

1. Date and time the load was deposited;
2. Name of the individual at the reuse site who received the load;
3. A declaration from the individual at the reuse site who accepted the load.

A copy of the hauling record will be provided to the temporary site operator or representative. These records shall be maintained and made available to the ministry upon request. All records generated under the excess soil Regulation must be kept for seven years by all parties, with the exception of the hauling record which must be kept for two years.

Best Practices

Depending upon the size, scope and other variables sites it is recommended sites consider using electronic tracking and record keeping systems.

3.10 Hauling Record

Under the Regulation, haulers are required to collect information and complete a Hauling Record. Completion of the Hauling Record requires specific details and information from a temporary site. Prior to January 1, 2022 haulers are not required to keep a written record of the required information and can provide it verbally.

Regulatory Requirements (O. Reg. 406/19 Section 29)*: Comes into effect January 1, 2022

**Note that Section 18 of the regulation is subject to an Amendment under section 29(2). Prior to Jan. 1, 2022, Section 18 allows the verbal exchange of information.*

18. (2) Upon arriving at a Class 1 soil management site, Class 2 soil management site, reuse site, local waste transfer facility, landfilling site or dump, the person who is transporting the excess soil shall ensure that the record mentioned in subsection (1) includes the following:

1. The date and time the load of soil is deposited.
2. The name and phone number of the individual at the Class 1 soil management site, Class 2 soil management site, reuse site, local waste transfer facility, landfilling site or dump who acknowledges that the excess soil has been deposited on the date and at the time specified under paragraph 1.
3. A declaration by the individual mentioned in paragraph 2, stating that he individual acknowledges the deposit of the excess soil.

(3) The person who is transporting the excess soil shall ensure that the individual mentioned in paragraph 2 of subsection (2) is given a copy of the record containing the information mentioned in that subsection.

Plain Language Requirements at the Receiving Site – in effect as of Jan. 1, 2022

- Prior to leaving the receiving site haulers need to ensure the following information is included on the Hauling Record:
  - Date and time the load was deposited,
  - name of the individual at the receiving site who accepted the load, and
  - a signature from the individual at the receiving site who accepted the load.
- The Hauler is responsible for ensuring the individual who accepted the load at the receiving site is given a copy of the completed hauling record (or access to electronic version if paper versions are not used).

Best Practices

For hauling record templates and additional information on best practices for hauling, reference the **Best Practices for Haulers** document.

3.11 Emergencies

It is important that temporary soil storage sites have an emergency response plan for both environmental and health and safety requirements. This plan should have details on how to manage emergencies related to site operations and storage should they occur. As each site is different, specifics related to each plan will vary.

Best Practices

Emergency plans and spill action plans should be reviewed and updated as necessary on a regular basis (e.g., yearly).

Generally, emergency response plans may want to include the following topics:

1. Emergency Plan

   The following topics/components should be part of that plan:

   - Emergency phone numbers for the Police, Fire Department, Ambulance and Ministry of Labour (MOL) and MECP (spill response) are to be posted;
   - Notification of key personnel and management as soon as practicable;
   - Emergency evacuation routes and rally points;
   - Identification of an Emergency Response Team (ERT); and,
   - Site inspections to identify any potential hazards, that could cause an emergency (i.e fire, evacuation, injured workers).

2. Spill Response Plan

   It is recommended that sites are audited to determine if there are any hazardous substances that could cause health problems to a worker if exposed or an environmental problem if the substance escapes or is accidentally released from its container, pipe or hose. Procedures may need to be developed to address issues related to storage of chemicals, fuels, liquids and other potentially hazardous materials. Spill response

equipment including spill kits and secondary containment for fuel storage are essential for site operations.

It is also important to have a plan that provides guidance in the event of a spill and a proper contact list for spill notification including Regulatory agencies (i.e. Spills Action Centre, Canutec (Canadian Transport Emergency Centre), and local or municipal agencies).

Other Regulatory Considerations

The Ministry of Labour requires some emergency preparedness measures under the Occupational Health and Safety Act.

Environmental Protection Act – Spill Response

Ontario Water Resource Act - for spills into waterways

3.12 Records and Record Retention

As mentioned, operators of temporary soil storage sites must maintain records of all soil that comes to the site and make this available to the MECP upon request. Information detailing the source of soil, quantity and quality are to be documented. Proper collection and storage of relevant reports such as the Hauling Records should be kept ensuring compliance with the Regulation and mitigate liability risks.

Regulatory Requirements for Records Retention (Ont. Reg. 406/19 Section 28)

28. Subject to subsection (3), the following persons shall retain every document and record that the person created or acquired under this Regulation for a period of at least seven years after the date that the document or record is created or acquired:

2. An operator of a Class 2 soil management site.

Best Practices

Other pertinent records that Operators and Owners of temporary soil storage sites may want to maintain include:

1. Pre and post condition surveys of the site and potentially neighbouring sites if applicable;
2. pre and post environmental investigations for the site;
3. grading plans and stormwater water controls;
4. permits;
5. relevant ECA's if applicable;
6. environmental control data (i.e. dust monitoring, groundwater monitoring);
7. complaint and corrective action reports;
8. health and safety records;
9. training records for staff;
10. post rehabilitation plan if applicable; and,
11. inspection reports.

Storage of all documentation can be electronic or paper depending on the sophistication of the site and volumes that the site intends on receiving. Owners and operators can determine what best suits the requirements of the site. All records must be retained for a period of seven (7) years, with the exception of hauling records which must be maintained for a period of two (2) years.

3.13 Complaints Response System

Each site should have a system in place for responding to complaints.

Best Practices

Sites should consider implementing the following practices where applicable:

- Create a communication and outreach plan to the community to create a communication flow between the Temporary Site and area residents and stakeholders;
- site signage should include contact information or other information for communicating complaints;
- site signage could state that the site is a temporary rather than permanent site and include projected dates of operation; and,
- develop a complaints response policy including:
    - who is responsible for responding to complaints;
    - what is the timeline for responding; and,
    - a process for recording and tracking complaints.

3.14 Responsibilities

It is important that with any operation that each proponent, operator, QP, and employee understands their duties and responsibilities. Operation of a temporary soil storage site is no exception. The proper detailing of responsibilities, training to build understanding and delegating of said responsibilities improves site operation, response to upset conditions, and decisions and actions during emergencies.

3.14.1 Proponents

Proponents are those employees who hold the positions such as President, Senior Project Managers, Project Manager and Business Development Manager. They are ultimately responsible and accountable for the operations of the site. Responsibilities include, but are not limited to the following:

- Provide a safe and healthy workplace;
- Ensure that all supervisors, workers and sub-contractors comply with the rules of the site and applicable Regulations, Bylaws and Industry Standard Practices;
- Provide the motivation and resources necessary to maintain site operations to meet requirements;
- Review on an annual basis the operations of the site (as applicable);
- Ensure that incidents are reported to the required authorities as legislated;
- Ensure that the site has an emergency response procedure where required;
- Ensure the site has a complaints response procedure;
- Ensure that employees are properly trained; and,
- Show commitment to health and safety by setting a good example.

Depending on the scope and scale of the temporary site, local land owners, community groups, Indigenous communities and others may have concerns regarding the soil management activities that are planned. Concerns could include potential impacts to ground water, noise, dust, and road safety. It is recommended that those responsible for the operation of temporary sites assess early in the planning process potential anticipated concerns by affected parties to see what engagement might be helpful as the undertaking is planned and progresses. Where applicable, this could be done in conjunction with public communication activities for approvals that a

temporary site may need, such as those required for the purpose of zoning or permitting under municipal by-laws.

3.14.2 Operators

Operators are responsible for the proper operations of the temporary site. They are also responsible and accountable for implementing policies and procedures. Responsibilities include but are not limited to the following:

- Be responsible and accountable for on-site activities;
- Ensure that all personnel have what they need to properly complete their job task in a safe manner;
- Evaluate the performance of their workers and sub-contractors;
- Work to limit GHG emissions related to the Temporary Site operations;
- Stopping work that is illegal, against regulatory requirements, outside of normal operational procedures or does not comply with policies and procedures;
- Be responsible and accountable for reporting all complaints, deficiencies, emergencies or practices that force operations outside of normal;
- Ensure training is provided in compliance with the site operational policy and procedures;
- Ensure complaints are addressed and responses communicated in a timely manner;
- Perform site inspections on a regular basis; and,
- Implement an emergency plan and review with all workers regularly.

3.14.3 Employees

All employees are responsible for understanding their job duties including responding to situations. Responsibilities include but are not limited to the following:

- Comply with the Proponent and Operator policies and procedures;
- Work in a way that will not endanger themselves or others and protect the environment;
- Report to their employer any situations outside normal operating procedures, complaints, deficiencies, and emergencies;
- Participate in regular operational meetings; and,
- Maintain good housekeeping in their work area.

3.14.4 Subcontractor

Subcontractors are responsible and accountable for their own operations. They are to ensure that they adhere to the Proponent and Operators policies and procedures to maintain a flow down approach to managing site operations. Responsibilities include but are not limited to:

- Subcontractors and their subtrades must comply with the site operational policies and procedures; including adhering to any traffic management policies and plans,
- Ensure that their supervisors, workers and subcontractors are aware of and comply with all existing related environmental and safety legislation;
- Maintain good housekeeping in their work areas;
- Before commencing operations, contact the senior staff on the site for instructions regarding operating hazards, emergency procedures and applicable safe work instructions particular to the site;
- Monitor the safety performance of their workers and subcontractors;
- Ensure that any incidents (spills, activities outside prescribed scope, complaints, emergencies) are reported to the Proponent and/or Operator;
- Investigate and submit reports of incidents to Proponents and/or Operators; and,

- Ensure training is provided in compliance with all related laws and industry standard practices.

3.14.5 Qualified Persons

As a Temporary Site will be part of a specific Project or with a specific Project Leader, the QP for the Temporary Site will likely be the QP for the Project. However, as there are no regulatory requirements for direct QP involvement with a Temporary Site, QPs will be under appointment by the Project Leader. As such, with respect to the QPs involvement at the Temporary Site, the following Best Practices should be considered as possible activities by the QP:

- Assist with project selection;
- Assist with pre-condition soil and groundwater assessment;
- Assist with assessment/audit of temporary site restrictions and storage requirements;
- Assist with designing environmental controls (i.e., use hard surfaces, control stormwater, dust, security features);
- provide input into traffic management and control into and out of the Temporary Site as well as within the Temporary Site;
- Assist with audit sampling and documentation;
- Verification of soil quality and quantities sent back to the Project Area, reuse sites or disposal facilities;
- Assist with notifications and communications to MECP and local municipalities;
- Assist with post-condition assessment and site rehabilitation/closure; and
- Provide recommendations with sound judgement and with climate change considerations.

3.14.6 Municipalities and Conservation Authorities

Municipalities have a variety of roles and responsibilities around managing Temporary Sites:

- Enforce community health and safety by limiting risks through policies and communication with Temporary Site operators, including:
    - ensure that surrounding roads and hauling routes are maintained and adhered to,
    - respond to complaints and concerns from the local community in communication with the site operator,
    - ensure the site adheres to the by-laws including traffic management plans or policies.

Municipalities may take the lead on site-specific instruments and work with local Conservation Authorities on enforcement. Conservation authorities can support enforcement in collaboration with the municipality by providing information around enforcement such as sharing their observation, notes or other evidence.

Municipalities may require financial assurances or securities to support enforcement and cover costs of damages that occur through the operation of the Temporary Sites.

In circumstances where Site Operators have caused damage, caused safety concerns or other complaints the onus is on the municipality to prove there was damage. Municipalities could consider the following practices:

- Requiring GPS tracking systems of haulers so they can be assured and address concerns or complaints around trucking routes and other issues; and,
- conducting pre-construction road assessments.

4. Soil Processing

The Regulation allows for low risk processing of excess soils at temporary soil storage sites on dry soils only. These activities are exempt from Sections 27, 40 and 41 of the EPA (waste approval requirements). It is important to note that these activities do not exempt the processing activities from Air or Water approvals that may apply depending on the soil processing that is undertaken.

Regulatory Requirements for Processing (O. Reg. 406/19 Section 21)

21. (1) The management of excess soil that is dry soil at a Class 2 soil management site is exempt from sections 27, 40 and 41 of the Act if the following conditions are met:

8. If excess soil is processed while being stored at the Class 2 soil management site, it must be processed in accordance with any requirements governing the processing that are set out in the Soil Rules and by one of the following methods:

i. Passive aeration.
ii. Mixing of soil from projects that have the same project leader, if the soil being mixed with it is of similar quality to it and the mixing is not carried out for the purpose of diluting the concentration of contaminants in the soil.
iii. Soil turning.
iv. Size-based sorting.
v. Sorting it for the purpose of removing debris.

Rules for Processing Procedures (Soil Rules Section C)

C (1) General

1. Soil shall be managed in such a way as to prevent any adverse effects associated with the receiving, **processing**, storage and movement of soil, including management of:

i. noise;
ii. dust;
iii. mud tracking;
iv. leaching;
v. run-off and erosion; and
vi. potential outdoor air impact(s), including odour issue(s).

Plain Language Requirements for Temporary Sites Soil Processing

Passive processing is allowed at a Class 2 soil management site without waste approval requirements as long as the methods used conform to the Soil Rules and listed methods in the regulation.

i. Passive aeration.
The introduction of oxygen to the soil to provide air-flow or in some cases accelerate oxidation for biological and chemical processes.

ii. Mixing.
Soils from projects that have the same project leader, that are similar in quality may be combined. Mixing cannot be used to dilute or treat for contaminants.

iii. Soil turning.
Rotating the soils to assist with passive aeration, drying or mixing.

iv. Size-based sorting.
Mechanical separation of larger particle sized soils from smaller ones for engineering and reuse opportunities.

v. Sorting it for the purpose of removing debris.
Mechanical separation of debris (such as asphalt, brick, concrete, wood, metal) for reuse or recycling opportunities.

Liquid soil processing is not permitted at Temporary Sites. Drying and dewatering is permitted at Project Area source sites, local waste transfer facilities and at ECA permitted sites.

Best Practices

It is expected that all processing of excess soils be completed using acceptable procedures with industry standard best practices. Procedures and best practices employed will vary depending on the characteristics of the excess soils being processed, the matrix variability of the materials, and the end-product required by the reuse site.

Proponents and operators may want to carefully examine processing techniques and the resulting reuse soil to ensure the desired product is attained mitigating the potential of rejected soils and unfortunate outcomes.

Operators processing excess soils should consider employing the control measures discussed previously in this document to mitigate against fugitive releases and manage nuisance issues.

Any sorted waste or recycled products that are separated during screening activities, and not considered excess soil, should be managed appropriately and compliant with O. Reg. 347, as amended, where necessary. This would include sending these materials to the appropriate end users and ensuring that they do not stay on site for extended periods of time (i.e. no longer than 90 days).

Additional Regulatory Requirements

It is expected that all processing activities will be completed in compliance with all regulations and by-laws. Although O. Reg. 406/19 does exempt processing activities under some waste approval requirements, it does not alleviate Proponents and Operators from ensuring they are adhering to other regulations or municipal requirements. Examples include:

- Ontario Water Resources Act;
- Environmental Protection Act;
- Ontario Regulation 419 – Air Pollution;
- Ontario Regulation 347 – Waste;
- Municipal By-Laws (links to list of Ontario municipalities).

5. Site Closure and Rehabilitation

There are no requirements for site closure and rehabilitation under O. Reg. 406/19 for temporary sites, but there may be other requirements under other regulations, local by-laws, and/or industry standard practices. However, to limit liability it is recommended best practices for site closure and rehabilitation to be applied as appropriate.

Best Practices

Since temporary soil storage sites are just that, temporary, it is important for Proponents and Operators consider site closure and rehabilitation plans for the site and budget for costs once activities cease. Certain elements to include in such plan are:

- Ascertain, understand and follow notification requirements for local municipal requirements and by-laws;
- Post-Condition Survey of the site (with comparisons to the Pre-Condition Survey);
- Reinstatement of services that may have been temporarily suspended for site operations, when necessary;
- Post-Environmental monitoring and reporting (i.e. soil and groundwater monitoring);
- Final grading plan;
- Restoration of natural features and ground cover;
- Securely close site entrances, post signage informing of the closure and provide an emergency contact name and number should dumping continue; and,
- Notifications to the appropriate agencies of closure (MECP, Municipality).

6. Additional Resources

- Ontario Regulation 406/19 On-Site and Excess Soil Management, 2019
- Rules for Soil Management and Excess Soil Quality Standards, 2019
- Government of Ontario webpage, Handling Excess Soil

6.1 Conservation Authorities

Ontario has 36 Conservation Authorities (CA) which are generally located in southern Ontario and around large population centres in the north. In 2006, the Minister of Natural Resources approved the individual "Development, Interference and Alteration" Regulations (Section 28) for all conservation authorities. Through these regulations, conservation authorities are empowered to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and inland lakes shorelines, watercourses, hazardous lands and wetlands. Development taking place on these lands may require permissions from the CA to confirm that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land are not affected. Conservation authorities also regulate the straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or for changing or interfering in any way with a wetland.

Proponents should determine if their proposed site is in a regulated area by contacting the local conservation authority.

6.2 Additional Site Location Considerations – Provincial Plans

In Ontario, there are a number of provincial plans which apply to particular areas of the province. With the exception of the Niagara Escarpment Plan, municipal official plans and zoning by-laws are the primary vehicle for implementing provincial plans. These plans include: the Growth Plan for the Greater Golden Horseshoe, the Growth Plan for Northern Ontario, the Greenbelt Plan and the Oak Ridges Moraine Conservation Plan

These plans may contain areas requiring special environmental considerations. Each of these areas has special rules defined in the plans that may impact the ability to operate a temporary site. For example, in a Category 1 landform conservation area in the Oak Ridges Moraine Conservation Plan, significant landform features are to be maintained in the natural undisturbed form and the disturbed area to be less than 25% of the total area [Section 30. (5) of ORMCP (2017)].

Proponents should determine if a proposed site is within one of these provincial plan areas. If so, it is important to review the applicable Plan to understand any site restrictions and if permits are required by one of these agencies. An initial consultation with applicable agencies would assist in determining if the proposed site permitting process and likelihood of approval.

The proponent should also be aware that, in some cases, financial assurance(s) may be required for the temporary site and/or the arterial roads used by the site.

Below are some protected areas for consideration:

- Conservation Authorities (36 across Ontario)
- Greenbelt - https://www.ontario.ca/document/greenbelt-plan-2017
- Protected countryside
    - Niagara Peninsula Tender Fruit and Grape Area
    - Holland Marsh
    - Natural Heritage System

- Urban River Valleys
- Niagara Escarpment Plan Area - Activities with the Niagara Escarpment Plan Area are managed by the Niagara Escarpment Commission (NEC) https://escarpment.org/home. Within the rest of the Greenbelt the activities are managed by the local municipality.
    - Escarpment Natural and Protection Areas
    - Minor Settlement Area
    - Urban Area
- Oak Ridges Moraine Area - https://www.ontario.ca/page/oak-ridges-moraine-conservation-plan-2017
    - Core Areas
    - Natural Linkage Areas
    - Countryside and Settlement Areas
        - Rural Settlement
        - Settlement Area

There are also special areas that may be mapped or defined in the local municipality's official plans:

- Agricultural System
    - Prime Agricultural Lands
    - Speciality Crop Area
- Water Resource System
    - Key Hydrologic Area
- Landform Conservation Areas
- Parkland, Open Space and Trails

In addition, more detailed mapping is available with the following links:

- Greenbelt Plan Detailed Maps https://www.greenbelt.ca/greenbelt_plan_detailed_map_overview
- An interactive site operated by Neptis https://www.neptisgeoweb.org/
- ORMCP maps at https://www.ontario.ca/page/oak-ridges-moraine

6.3 Traffic and Transportation Management Plan

A Traffic Management Plan is to address safe and efficient traffic by outlining the location and configuration of the site entrance, truck queuing locations and parking, dust control, mud-tracking prevention, and haul routes from the immediate vicinity of the Temporary Storage Site.

1. Regulatory Standards and Reference Documents

The Traffic Management Plan must comply with applicable regulatory requirements administered through various agencies/public bodies at the federal, provincial, and municipal levels. It will reference and be developed according to the following regulatory standards and guidelines:

- Bylaws and/or Terms of Reference of the local municipality;
- Ontario Traffic Manual (especially, Book 7 - Temporary Conditions);
- Manual of Uniform Traffic Control Devices for Canada (MUTCDC); and
- King's Highway Guide Signing Policy Manual (KHGSPM), Ontario;

Generally, the conditions for application of the statutory provisions are met if either the construction activity occurs directly on the roadway itself, or, occurs off of the roadway but has the potential to disrupt normal traffic operations (e.g., requiring detours or lane closures, or significantly delaying non-site-related traffic). The level of disruption on area traffic operations is typically assessed with established tools and techniques, based for example on the methodologies of the Highway Capacity Manual 2000 (HCM-2000) as published by the Transportation Research Board (TRB), or of the Canadian Capacity Guide for Signalized Intersections.

2. Plan Outline

The Traffic Management Plan will include the following directions:

- Outline the work zone for vehicle staging including temporary closures of travel lanes or disruptions to street segments and intersections during activities within the roadway right of way or any other utility connections.
- Identify detour routes for construction workforce vehicles and the public. Ensure access for emergency vehicles to and around the project site.
- Identify oversize load haul routes:
    - Transporters will follow regulations for the transportation of oversized and overweight loads on all roads. These regulations include provisions for time of day, pilot cars, law enforcement escorts, speed limits, flaggers, and warning lights.
- Procedures for directing traffic.
- Requirements for temporary signing, lighting, and placement of traffic control devices, if required.
- Requirements for accommodating receipt of fill/work outside regular hours.
- Requirements of communication with construction committee and local traffic management.
- Requirements for truck queuing and establishing truck routes to site, including information about daytime and nighttime routes.
- Timing requirements of deliveries of heavy equipment and construction materials.
- Construction scheduling outside of legal holidays and special events to avoid affecting large fluxes in traffic volumes.
- Procedures for the identification of vehicle safety for entering and exiting site access roads.

- Procedures for the notification of potential road closures prior to construction.
- Procedures for notification to transit operators of potential road closures prior to construction.
- Procedures to maintain access to adjacent properties.
- Procedures to maintain access to transit, bicycle, and pedestrian facilities along the project route(s).
- Procedures to maintain nearby trails.
- Determine the need for construction work hours and arrival/departure times outside peak traffic period.

7. Acknowledgements

The Ontario Environment Industry Association has prepared this Best Practices Document with invaluable input from the following individuals:

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8. Appendix I

CASE STUDY – Eglinton Crosstown LRT – Use of a Temporary Soil Storage Site

August 18, 2020

Crosslinx Transit Solutions – Constructors implemented and operated the use of a temporary soil storage site to support schedule acceleration demands while meeting project economic requirements. This initiative not only allowed accelerated excavation schedules during wet weather conditions and after-hours, but also allowed for the temporary storage of clean excess soil for reuse as backfill on the Project.

Start Date – End Date of study: October 2019 – July 2020

Volume of Material Received: 96,150 m3

Volume of Backfill saved on the Project: 20,300 m3

Number of rain days mitigated (potential delay days): 26 Days

Number of after-hour operation days (schedule acceleration): 161 Days

Estimated reduced truck travel distance:

Average haul distance saved per load of reused backfill = 90Km

Total travel distance saved by reusing native soil = 182,700Km

The use of a temporary storage site allowed Crosslinx to mitigate potential schedule delays, allow for schedule acceleration during bulk excavation, while saving on backfill costs.

> "The implementation of a temporary soil storage site has allowed the Eglinton Crosstown Project to not only de-risk excavation schedules but also store native soil onsite, managing disposal fees - all the while ensuring the natural environmental is not compromised by our activities. I would recommend the implementation of a temporary soil storage site for any project moving a significant volume of excess soil as long as the required real estate can be secured."
>
> – Deputy Director of Alignment