

O. Reg. 406/19 On-Site and Excess Soils Regulation Refresher

City of Ottawa
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O. Reg. 406/19: On-Site and Excess Soil Management



- Why was the Regulation introduced?
- Does my project have to follow the Regulation?
- What does it involve and when does it start?
- Who is responsible for regulatory compliance?
- Can I get out of it? Tell me about exemptions...
- What is excess soil (and what isn't)?
- What are the options for disposal/reuse?
- How do I know where excess soil can go?
- Does this affect on-site work?
- How do register and record haul movements?
- How is the City managing regulatory risks?
- What are some of the early lessons learned?
- How will 2023 tenders be structured?



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Drivers for a new Ontario Regulation

Owners have always been responsible for managing their excess soil in an environmentally responsible manner; however, past environmental regulations and ministry guidelines had enforcement challenges.

New O. Reg. 406/19 provides clear, enforceable rules regarding soil reuse.

Intended Benefits:

Prevent improper placement/reuse of soil (i.e., illegal dumping, adverse impacts)

Reduce amount of excess soil disposed of in landfills

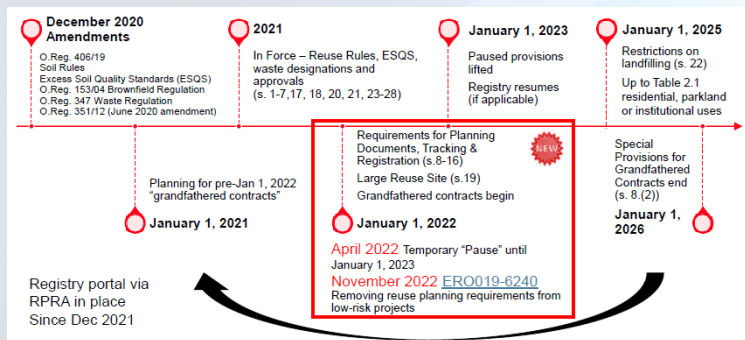
Facilitate local reuse, decrease GHG emissions

GHG = greenhouse gas



Regulation Timeline

O. Reg. 406/19 has been in force since January 1, 2021.



All City of Ottawa projects involving subsurface excavation must meet the applicable requirements of the Regulation.



Who is Responsible for Regulatory Compliance?



Project Leader: the person or persons who are ultimately responsible for making decisions relating to the planning and implementation of the project* (i.e., the City of Ottawa)

(*a project includes any form of development or site alteration; construction or reconstruction, erecting or placing of a building or structure; establishment, replacement, alteration or extension of infrastructure; or any removal of sediment or liquid soil from a surface water body).

Project Leader cannot contract out their regulatory liability for the management of excess soils.

Project Leaders may choose to contractually delegate some responsibilities for excess soil management to a Contractor, but a Contractor’s non-conformance equates to the Project Leader’s breach of O. Reg. 406/19.



Key Elements of O. Reg. 406/19

Common Requirements for ALL Projects (effective Jan 1, 2021):

<p>New Excess Soil Quality Standards</p> <p>(soil chemistry of source site)</p>	<p>Reuse Site Requirements</p> <p>(beneficial reuse, owner consent, suitability for reuse based on quantity and quality)</p>	<p>Storage Requirements</p> <p>(stockpile sizes, PL offsets and time limits intended to limit adverse effects)</p>	<p>Transportation Requirements</p> <p>(vehicles, record keeping, haul records**)</p> <p>**written or digital as of Jan 1, 2023</p>
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Additional Elements for higher-risk projects (effective Jan 1, 2023) (where exemptions do not apply):

<p>Planning Requirements completed by a Qualified Person (Section 11, 12, 13)</p>	<p>Notice Filing and Updates on Provincial Registry for Projects and Larger Reuse Sites (Section 8, 9,15,19)</p>	<p>Soil Tracking System to Prevent Fraud, Maintain Accuracy, and Produce Reports (Section 16)</p>
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Exemptions from Planning Requirements

Special conditions

Emergency work
(e.g., spills, watermain
breaks, sinkholes)

Project Area is of
Residential, Parkland
Institutional or
Agricultural land use
and not part of an EIA
or remediation project

Topsoil (under certain
conditions, with specific
reuse requirements)

Volume-based

<2,000 m³ in settlement
area and not part of an
"Enhanced Investigation
Area" (industrial use,
gas station, dry cleaner,
etc.)
or remediation project

<100m³ transported
directly to a waste
disposal facility
(landfill, Class 1 SMS)

Time-based

Entered into a
contract before
January 1, 2022

Some exemptions if
soil studies
completed before
January 1, 2022

Time-based
Exemptions expire
2026

Infrastructure Exemptions

Soil excavated to
maintain* infrastructure
in a fit state of repair
(except SWMP)
*not clearly defined, requires MECP
consultation on a case-by-case basis

Soil from an
infrastructure project
reused at another
infrastructure project of
the same owner or a
public body

- Exemptions do not eliminate the need to confirm soil quality is appropriate for selected receiving sites
- 3rd Party receiving sites may insist on full requirements
- If you are doing field investigations, test for soil quality



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What is NOT Excess Soil?

Other regulatory regimes govern the management of the following materials, which are out of scope of O. Reg. 406/19:

- Excavated soil or crushed rock that meets the definition of hazardous waste
- Excavation of asphalt or concrete
- The excavation of topsoil under permit from the Aggregate Resources Act
- The extraction of aggregates from a pit or quarry
- The final placement of excess soil on the bed of a surface water body
- The reuse of rock unless mixed with excavated soil or crushed rock



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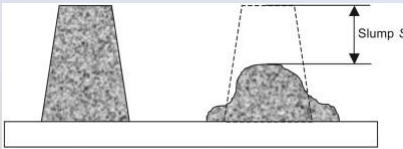
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What is Excess Soil?

Excess Soil: soil*, crushed rock (smaller than 2mm), or soil mixed with rock or crushed rock, that has been excavated as part of a Project and removed from the Project Area**.

* Soil means unconsolidated naturally occurring mineral particles or materials resulting from the natural breakdown of rock or organic matter by physical, chemical or biological processes that are smaller than 2 mm. (rock defined as >2mm size).

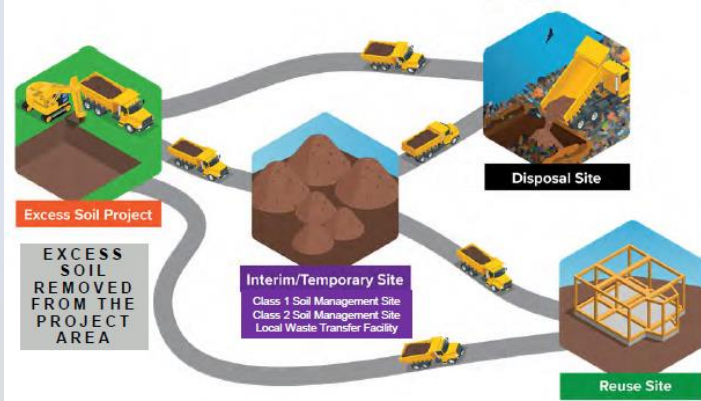
**Project Area is a single property or adjoining properties on which the Project is carried out.



Liquid Soil: Soil that has a slump of more than 150 mm (when it leave site or when it arrives at the receiver site) is waste.

Reuse and Waste Disposal Sites

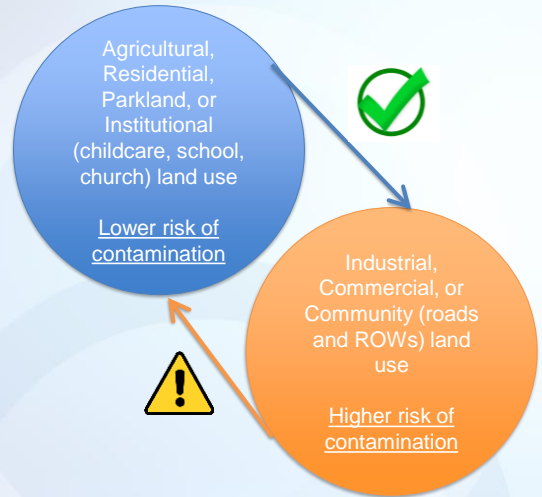
Surplus soil not beneficially reused on site must be transported DIRECTLY to one of the following recognized receiving sites:



- Class 1 Soil Management Site (MECP licensed permanent soil processing site operated under ECA)
- Class 2 Soil Management Site (MECP licensed temporary soil storage site operated under ECA)
- Local Waste Transfer Facility (temporary storage, e.g., at City or Contractor works yards, operated following Soil Rules)
- Landfill/dump (*only allowed for soils over Table 2.1 RPI as of January 1, 2025)
- Reuse Site (beneficial purpose, owner signoff, of suitable quality/quantity)

Suitability for Reuse

- **Excess soil is a waste unless it is beneficially reused.**
- Reuse site must require additional soil for a **beneficial purpose** (e.g., for grade raise, berms or other purpose) and finally place soils **within 2 years**. Simple disposal or stockpiling of excess soil is NOT considered a beneficial reuse.
- The volume of soil to be provided must match the **volume needed** by reuse site, with larger sites requiring registration.
- The **quality of excess soils** from the source site must meet the Excess Soil Quality Standards of the reuse site.
- 3rd Party reuse sites may have their own **sampling and reporting** requirements for soils intake, regardless of any exemptions to the Regulation.
- Larger reuse sites >10,000 cu.m must **register** on RPRA.
- Reuse at other **infrastructure projects** is encouraged but requires significant coordination and temporary stockpiling.



Excess Soil Quality Standards for Reuse

So many tables... what do they all mean?

- Where excess soils can go depends on the conditions of the receiving site:
 - Potable/non-potable site (wells nearby?)
 - Land Use (Agricultural (AG), Residential/Parkland/Institutional (RPI), Industrial/Commercial/Community (ICC))
 - Within 30m of a water body?
 - Geology (overburden thickness, stratified)
 - Volume of excess soil (+/- 350 cu.m)
- Generic standards for reuse may be modified by a Qualified Person through risk assessment
- Need increased industry awareness of available reuse sites and site-specific ESQS to better understand where excess soils can be reused

Site Condition	Table 2/2.1	Table 3/3.1	Table 4/4.1	Table 5/5.1	Table 6/6.1	Table 7/7.1	Table 8/8.1	Table 9/9.1
Property is an Environmentally Sensitive Area.	x	x	x	x	x	x	x	x
Ground water use condition is potable.	✓	x	✓	x	✓	x	✓	x
Land Use is Agricultural or Other.	✓	x	x	x	✓	x	✓	x
Overburden thickness is unknown or is less than 2 m.	x	x	x	x	✓	✓	x	x
Depth to ground water is unknown, is less than 3 m below ground surface or the capillary fringe is <0.8 m from the base of the gravel crush of any existing/ future building foundation*.	x	x	x	x	✓	✓	x	x
Nearest water body is unknown or less than 30 m from property.	x	x	x	x	x	x	✓	✓
Excess soil may be placed at any depth.	✓	✓	x**	x**	✓	✓	✓	✓
Stratified site conditions must be maintained to ensure that surface soil and subsurface soil meets the applicable stratified condition standards.	x	x	✓	x	x	x	x	x



Soils Generated on City Projects



- Contaminated Soils (> Table 3.1 ICC ESQS)
 - Off-site reuse without processing/remediation is generally not possible and may require disposal as waste at a landfill or dump. On-site reuse determined based on risk-assessment.
- Impacted Soils (> Table 2.1RPI to Table 3.1 ICC)
 - soil can either be beneficially reused at industrial/commercial sites or at non-potable residential sites, along City rights-of-way or to waste disposal facilities for processing or disposal. Much of the ROW soils would fall in this category.
- Disposable fill (Table 1 to Table 2.1RPI)
 - Meets “typical” background levels or potable residential/parkland standards. Soil can be disposed of on private land or at reuse sites, at little to no risk to the generator or the receiving site. Landfill disposal prohibited after Jan 1, 2025.
 - Much of the near-surface ROW soils may be excluded under new regulations.
- Salt-Impacted ROW soils
 - Salt impacts are not considered an exceedance when placed per MECP Soil Rules.

On-Site and Temporary Soil Storage Rules

Soil stockpiles must be managed to prevent adverse effects including noise, dust, mud tracking, leaching, run-off and erosion, and odour issues.

- Dry soil must be stockpiled separately from soils from other projects or operations until soil is sampled and analyzed. Once tested, stockpiles of similar qualities can be merged.
- Soil stockpiles greater than 500 cu.m, stockpiles stored for more than one week, or stockpiles stored outside a public road right-of-way must be stored >30m from a waterbody and >10m from a property line (unless there is a physical barrier)
- Soil must be stored in a manner that prevents contaminants from leaching into groundwater or running off into surface water
- Maximum stockpile size (for dry or liquid soils) = 10,000 cu.m.
- Liquid soils must be stored in leakproof container or on impermeable surface to prevent escape to the environment



<https://www.blogto.com/city/2022/08/ugly-dirt-pile-toronto-neighborhood-without-explanation/>

Registering a Project

Registered Projects must file Project Notice on [RPRA](#) before ANY soil leaves site.

Info needed to register:

- Project details (location, project leader, operator, QP contact, hauler)
- Estimated volume of excess soil to be removed, broken down by ESQS tables
- Receiver Location, along with their applicable ESQS (for reuse sites).
- Declaration from the Project Leader that a QP has completed the planning studies, that information filed is complete and accurate, and that procedures were developed to adhere to Regulation.
- Info must be kept up to date within 30 days of a change, and final volumes entered for payment.

For Registered City Projects the City's QP (QP-PL) will typically complete the planning studies (Assessment of Past Uses Report, Sampling and Analysis Plan, Soil Characterization Report) during design.

The ESDAR will be completed by either the QP-PL or Contractor's QP-C, depending on who is designating the receiver site for the project.



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Transportation and Hauling

Records are now required to document all excess soil movements.

- ✓ Vehicle operator to keep **written/digital haul records**, which always need to be available for review when transporting excess soil.
- ✓ Soilflo, Treads and others are **digital solutions** used by some larger contractors. Paper copies for smaller jobs are still acceptable but City will monitor compliance.
- ✓ For City trucks transporting soils, and for soil intake at City yards, a **SoilFlo pilot** is starting in 2023.
- ✓ Haul Records are to be maintained for 2 years by hauler.
- ✓ City as Project Leader to maintain all records related to excess soils for 7 years in the project files.
- ✓ For larger projects requiring project notification to be filed, more detailed **soil tracking systems** required
- ✓ Vehicle operators need to know the contingency plan if loads are rejected by receiving sites

If your project has trucks on the road moving soil, the person operating that vehicle needs to be able to provide to any provincial officer who may stop them the following information:

18. (1) A person who is operating a vehicle for the purpose of transporting excess soil shall ensure that a record including the following information to any provincial officer, upon request:

1. The location at which the excess soil was loaded for transportation.
2. The date and time the excess soil was loaded for transportation.
3. The quantity of excess soil in the load.
4. The name of an individual who may be contacted to respond to inquiries regarding the load, including inquiries regarding the soil quality.
5. 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*.
6. The location at which the excess soil is to be deposited.

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

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

18. (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.



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Risk Management and Mitigations

- City is dedicated to being a leader in compliance.
- More intensive pre-project planning and due-diligence soil testing, risk reviews
- Coordination within our City-wide internal works to match projects generating and needing soils (difficult task but needs consideration)
- Development of longer-term strategies which involve leveraging City lands for beneficial reuse and maintaining a high degree of certainty over soil deposition solutions for projects
- Continue to leverage our connections with other municipalities and influence with provincial government to address challenges with implementation
- Improved contract provisions which place clear requirements on our contracting partners and ensure Owner regulatory responsibilities are achieved



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Early Lessons Learned

- Soil has become a commodity the same as gravel or asphalt but with far more complicated market conditions
- Owners are already operating differently in response to increased liability, increased cost exposure, schedule uncertainty
- Demand for reuse sites is outstripping supply...driving up costs
- Many in the trucking industry are not ready for 2023 haul and tracking provisions
- Where needed, projects are being delayed due to lack of readiness
- Costs are initially very high (\$5/t to \$50/t)
- Problematic situations without viable solutions
 - Salt impacted soils from right-of-ways
 - Liquid soils such as wet clays and SWMP sediments
 - Geological soil chemistry exceedances
 - Limited reuse sites for impacted right-of-way soils



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What does the City want to avoid?

- Uncertainty of Project Delivery
 - No available sites for deposition of excess soils for reuse or as waste resulting in work interruption or slowdowns
- Unnecessary Costs and Uncertainty of Costs
 - Multiple handling
 - High-cost commercial disposal sites
- Long term liability to 3rd party deposition sites
- Landfill capacity pressures
- Ministry enforcement actions

So what are the options and likely go forward approaches ?



2023 Tendering Approach

- Soil quality differentiated into categories of Excess Soil Type
- Increased use of Q-sheets to delineate project area by category, where applicable
- SP-general D spec will stipulate need for contractor or owner-designated receiver sites
- Use of City (or Contractor) Yards for temporary stockpiling of excess soil in some cases
- Contractor QP-C required for receiver site determination and submittals
- Separate items for plans & documentation, haul and tipping by category
- Standardized submittals of haul summary, monthly reporting on larger projects
- Working towards consistency across City ops

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SPECIAL PROVISION - GENERAL
No. D-CP000XXX-01

MANAGEMENT OF EXCAVATED MATERIAL AND EXCESS SOIL

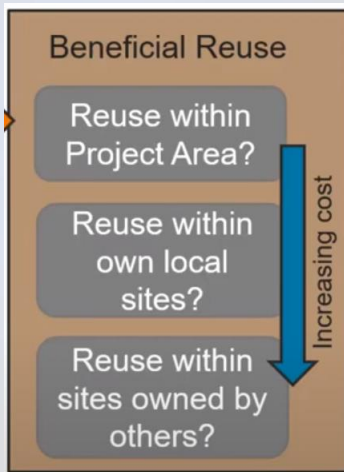
OPSS MUNI 180 and all contract provisions for the management of soil are extended and amended herein.

Excess Soil Type	Soil Quality Thresholds
Category 1 Excess Soil	Excess Soil meeting Table 1 background levels with the exception of salt impacts which may exceed Table 1
Category 2 Excess Soil	Excess Soil meeting Table 2.1 (Residential Parkland Institutional) with the exception of salt impacts which may exceed Table 2.1 RPI standards
Category 3 Excess Soil	Excess Soil meeting Table 3.1 (Industrial Commercial Community) with the exception of salt impacts which may exceed Table 3.1 ICC standards
Category 4 Excess Soil	Excess Soil specified by the Owner as requiring deposition at a Class 1 Soil Management Site or MECP licensed landfill
Category 5 Excess Soil	Excess Soil of known or unknown quality directed to an off-site stockpile location by the City for future re-use or future disposal by the City under separate contract.

Notes:
1. Tables above refer to those presented in the MECP Rules for Soil Management and Excess Soil Quality Standards



Longer Term Planning



Beneficial Reuse is only VIABLE Option

- Project Area reuse has limitations and will not meet all of our needs
- Reuse on Project Leader lands is most viable approach for owners with significant land holdings ... like municipalities
- Requires ongoing land and operational investments offset by both cost savings, certainty of project delivery and controlled liability
- With owner land solutions we have greater flexibility on when and at what cost we enter into 3rd party deposition solutions

Questions?

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Liquid Soils



On-site Management Options:

Passive aeration, passive dewatering, mechanical dewatering, mixing with similar quality soils, turning, size-based sorting, or use additives to solidify or dewater (polymers to be used only with QP involvement)

Special Transportation Requirements:

Liquid soil removed from the project area must be transported using appropriate vehicles specifically designed to ensure safe and secure transport:

Valves that are part of the vehicle must have a locking system and are locked when transporting liquid soils.

Per s.16.1 of O.Reg. 347, vehicles used for the haulage of sewage must not be used for the collection, handling or transportation of any other materials (such as excess soil)



Temporary Storage:

Liquid Soil Storage Facilities must be readily accessible for inspection by MECP.

No more than 10,000 cu.m of liquid soil at the site at one time. Stored in a leakproof container on an impermeable surface to prevent escape into the environment.



Planning Requirements – What, When, Where?

Assessment of Past Uses (APU)

- Involved desktop records review, interviews, site reconnaissance, conceptual site model, report
- not required for SWMPs
- not required when a Phase 1 ESA has been undertaken for the project

Sampling and Analysis Plan (SAP)

- Identifies areas where soil or crushed rock will be excavated relative to APECs
- Volumetric-based sampling and analysis of Base Tests + Contaminants of Concern to support decisions on reuse vs. management as waste

Soil Characterization Report (SCR)

- Reporting of Soil Quality testing results based on sampling and analysis of APECS
- Comparison of results to Excess Soil Quality Standards (ESQS) to determine appropriate off-site reuse or disposal options

Excess Soil Destination Assessment Report (ESDAR)

Excess Soil Volume Soil Quality Date of Excavation Reuse/Disposal Site Details



*Most Planning Requirements must be completed by a Qualified Person, per O.Reg. 153/04, and are completed during design.

Additional Resources

Regulations

Ontario Regulation 406/19: On-Site and Excess Soil Management ([Excess Soil Regulation](#))
 Ontario Regulation 244/97: Aggregate Resources Act ([Excess Soils in Pits and Quarries](#))
 Ontario's Environmental Protection Act ([EPA](#)), R.S.O. 1990, c. E. 19.
 Ontario Regulation 153/04 Soil, Records of Site Condition – Part XV.1 of the Act under Environmental Protection Act ([Record of Site Condition](#))
 Ontario Regulation 347/90: General Waste Management, as amended ([the Waste Regulation](#)).
 Ontario Regulation 351/12- Registrations under Part II.2 of the Act- [Waste Management Systems](#).
 OPSS.MUNI 180 ([Nov 2021](#)) [SydneyEnterprise: Portal \(gov.on.ca\)](#)

MECP Resources

Rules for Soil Management and Excess Soil Quality Standards, December 23, 2022 ([Soil Rules](#))
 MECP - Management of Excess Soils - A Guide for Best Management Practices
 ([Management of Excess Soil - A Guide for Best Management Practices | ontario.ca](#))
 MECP Excess Soils Fact Sheets ([Facts](#)) [Small Projects](#), [ESM and reuse requirements for project areas](#),
[Bringing excess soil to a reuse site](#), [Excess soil transportation](#)
 Resource Productivity & Recovery Authority ([soil registry](#))



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Additional Resources

Resources

MECP Webinar Slides

- [Project Area \(Source Sites\)](#),
- [Reuse Sites](#)
- [Transportation \(Dry and Liquid Soil\)](#)
- [Infrastructure Projects](#)
- [Excess Soil Registry](#) - Regulatory Requirements
- [Vac Trucks and Liquid Soil Management](#)
- [Qualified Persons \(QP\) and Excess Soil Planning](#)
- [Soil Depots and Storage Sites](#)
- Ontario Environmental Industry Association ([ONEIA best practices](#))
- [Qualified Persons](#) Best Practices
- [Class 2 Temporary Site](#) Best Practices
- [Hauling](#) Best Practices

Association of Municipalities of Ontario - Excess Soils Management ([AMO Info](#))

Residential and Civil Construction Alliance of Ontario ([RCCAO](#))

Qualified Persons Community of Ontario ([QPCO](#))



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