Enabling greater beneficial reuse of excess soil

Proposed amendments to O. Reg. 406/19, including related amendments to Regulation 347 and O. Reg. 153/04 under the *Environmental Protection Act* (EPA)

Ontario Ministry of the Environment, Conservation and Parks (MECP)

October 2024

Environmental Registry of Ontario: #019-9196

Purpose: This document describes proposed amendments to O. Reg. 406/19, On-Site and Excess Soil Management, as part of ERO proposal posting #019-9196.

Proposed regulatory amendments to O. Reg. 406/19 (the Excess Soil Regulation) and the referenced document Rules for Soil Management and Excess Soil Quality Standards (the Rules document)

1) **Change the coming into force date of the landfilling restriction for excess soil meeting Table 2.1 residential standards (Section 22 of the regulation)**

    - Amend the coming into force date of section 22 of the regulation from January 1, 2025, to January 1, 2027, a change of two years
    - Clarify the existing exception in subsection 22(3) that allows for landfilling of excess soil if a qualified person is of the opinion that it would be "unsafe to finally place the excess soil at a reuse site". The qualified person would be required to make a declaration that:
        - the excess soil contains a parameter for which there is no applicable excess soil quality standard and there is reasonable grounds to believe the final placement of the excess soil at a reuse site may cause an adverse effect;
        - the excess soil contains invasive species that should not be relocated; or
        - reuse of the excess soil at a reuse site for structural purposes is not possible due to its geotechnical instability and a reuse site that may use the soil for other beneficial purposes has not been located after reasonable efforts.

2) **Exempt specified excess soil management sites from a waste environmental compliance approval (ECA) subject to rules**

    Exempt the management of excess soil at additional types of Class 1 soil management sites from sections 27, 40 and 41 of the Environmental Protection Act, resulting in an exemption from the need to obtain a waste ECA. Such sites would need to comply with the rules governing the site set out in regulation. This proposal was originally posted in October 2023 for consultation (see ERO notice #019-7636) and has been revised based on feedback received. Details are provided below on operational rules for these depots.

    1. **<u>Aggregate reuse depots</u>**

        - Allowed materials:
            - These facilities would accept excess soil that was part of an engineered aggregate product prior to excavation and that will be reused as an "engineered aggregate product" (as defined below), or excess soil composed primarily of material that will be used as an

engineered aggregate product, with or without processing, to meet a realistic market demand.
    - "Engineered aggregate product" would mean a product composed primarily of aggregate and some other recycled materials, excluding general fill or earth, that meets an engineering standard or specification developed by, or required to be used by, a public body for specified purposes when constructing a road or other infrastructure or a building, or for use in an asphalt or concrete product, including OPSS Provincial 1010, Material Specification for Aggregates - Base, Subbase, Select Subgrade and Backfill Materials.
    - The following materials that are not excess soil would also be permitted at the aggregate reuse depot for the purpose of producing an engineered aggregate product at the depot together with excess soil: waste asphalt, glass, ceramic or concrete, inert fill (rock), and new aggregate.
        - Regulation 347 and O. Reg. 406/19 may be amended to ensure that waste materials other than excess soil that are permitted to be accepted at an aggregate reuse depot for the purpose of producing an engineered aggregate product (glass, asphalt, brick, ceramic, concrete) can be managed at the depot without the requirement for an ECA. Some of these other materials (e.g., waste asphalt pavement, waste glass) are already addressed in paragraphs 16 to 19 of subsection 3(2) of Regulation 347.
- Prohibited materials:
    - These facilities may not be used to manage general fill or earth that will not eventually be used as engineered aggregate.
    - Minor amounts of general fill or earth are acceptable to be accepted at the depot if excavated inadvertently with engineered aggregate material.
    - These facilities would not be permitted to store or process liquid soil.
    - These sites would not be able to accept hazardous waste, or other wastes that would otherwise require a waste ECA for their management.
    - Any material at a depot found to be unusable in an engineered aggregate product, including following processing, must be promptly disposed of.
- Processing:
    - The excess soil and other materials brought to the depot could be stored and processed using low risk processes (passive aeration,

mixing, size-based sorting, sorting to remove debris) to make an engineered aggregate product.
    - Crushing excess soil and other materials to produce an engineered aggregate product would also be permitted as a type of waste processing that is exempt from sections 27, 40 and 41, but such processing may still be subject to section 9 of the EPA and require a ECA (e.g., for noise).
- Allowed storage time and quantity:
    - Storage of excess soil and other material would be for a maximum of one year before it needs to be moved off-site; an extension for an additional year may be granted by a Director in the ministry.
    - Maximum volume at any one time would be limited to 25,000m^3 (inclusive of all material at the site).
- Procedures and operational requirements:
    - Inspections and characterizing of incoming excess soil and other material would be required to ensure it is not hazardous waste, and is material that can be accepted at the site.
    - Site security (signage, fencing, personnel, etc.) as well as spill clean up, fire fighting equipment, and other similar equipment would be required.
    - Collecting and maintaining information on source sites would be required, including quantity and quality of incoming material.
    - Records would be required to be maintained of sites from which excess soil and other material was received, to which engineered aggregate products were distributed, and to which unusable excess soil and other material was sent.
- Soil quality:
    - Excess soil taken to the site must be of a quality that it can be readily reused in a range of aggregate applications, meaning:
        - The excess soil was not associated with a potentially contaminating activity or area of potential environmental concern, and there is no visual or olfactory evidence of contamination.
        - If sampling was undertaken, it meets community use standards, except in respect of salt-related parameters, asphalt-related parameters and naturally occurring exceedances.
    - Excess soil in the engineered aggregate product leaving the depot must meet appropriate standards for the reuse site where it will be finally placed in order to lose its waste designation; some exceptions

may apply for certain parameters as outlined through current requirements or proposed amendments (e.g., for salt-related parameters, asphalt-impacted aggregate, etc.).

- Notice:
  - These facilities would be required to provide a written notice to an MECP Director (rather than file on the Excess Soil Registry) and the relevant local municipality (which would be applied in respect of all types of depots) to facilitate compliance, before commencing and upon closure of operations.
- Other:
  - Owner may also operate a residential development and/or landscaping depot at the same property as long as they are all distinct operations and the total amount of material across all depots does not exceed 25,000m3.
  - The processing currently allowed at a local waste transfer facility (LWTF) under O. Reg. 406/19, for LWTFs operated a public body or an infrastructure project leader, would be expanded to permit the processing and management of other materials that is permitted at an aggregate reuse depot.
  - The operation of an aggregate reuse depot within Aggregate Resources Act (ARA) licenced sites would be clarified, recognizing the role of the ARA licence and associated site plans.
  - For greater certainty, an exemption from sections 27, 40 and 41 of the Environmental Protection Act does not affect the need for these depots to comply with other relevant laws and to acquire other relevant permissions, including any required permissions that may be issued by the ministry, other ministries, municipalities or other governing bodies.

2. Small liquid soil depots

- Allowed materials:
  - Excess soil that is liquid soil from various project areas, including from stormwater management ponds.
- Prohibited materials:
  - Material from cleaning out sewage works (e.g., pipes or catch basins) is not excess soil, and would not be permitted.
  - Liquid soil that is hazardous waste would also not be allowed.
- Processing:

    - Allowed methods would include passive aeration, passive or mechanical dewatering, mixing, soil turning, size-based sorting, sorting to remove debris, and mixing with substances for dewatering or solidification with the involvement of a qualified person (similar to the current provisions set out in subsection 6 (4) to 6 (6) of the Regulation).
    - As a condition of exemption from the requirement for a waste ECA, the small liquid soil depot must have appropriate facilities where any wastewater and liquid process residues (i.e., sewage) from dewatering the liquid soil must be collected and that sewage must be discharged to a sanitary sewer or hauled to and disposed of at a wastewater treatment facility governed by a s. 53 ECA.
        - If the small liquid soil depot drains or discharges its sewage directly or indirectly into a ditch, drain or storm sewer or water or watercourse, the depot would not qualify for an exemption from the waste ECA.
- Allowed storage time and quantity:
    - Excess soil must be moved offsite six months after it was first received at the site.
    - Maximum quantity allowed would be 100m3 of liquid soil (including any resulting sewage from the processing) at any one time and 200m3 of dewatered/processed soil at any one time.
    - Daily receiving limit would be limited to 100m3 of liquid soil.
- Procedures or operational requirements:
    - At all times, liquid soil must be stored or managed in a leakproof container on an impermeable surface in a manner sufficient to contain and prevent the material from escaping into the natural environment, including during processing.
    - Any sewage resulting from the drying of the liquid soil shall also 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 until it can be disposed of in a sanitary sewer or hauled to a wastewater treatment facility.
    - Tracking of each load of liquid soil coming to the site would be required, including location where soil came from, contact information, quantity, date and time accepted at depot.
    - Tracking of each load of dewatered/processed soil leaving the site would be required, including where each load is going, quantity and quality, date and time it left the depot, data and time received at intended site.

    - Inspection of each incoming load of liquid soil would be required to ensure it is appropriate for management at the depot.
    - Daily site inspections and complaint response procedures would be required.
    - Procedures to assess that the overall capacity remains under limits would be required; if approaching capacity, no more liquid soil may be accepted at depot unless existing soil has been processed.
    - Annual reports would be required to be prepared and retained on-site, and would include: daily and monthly summaries of liquid soil coming to and leaving the depot, summary of sampling reports, summary of all complaints made; summary of all inspections at site.
    - Site security (signage, fencing, personnel, etc.) as well as spill clean up, fire fighting equipment, and other similar equipment would be required.
    - Operation manual for site personnel would be required to be developed and kept on-site at all times outlining all required procedures above (site inspections, complaint response, emergency response, soil receiving and handling procedures, sampling and testing).
    - A closure plan would be required, and would need to describe the work to be done to facilitate closure.
- Sampling:
    - No sampling would be required for liquid soil deposited at the depot, but all dewatered/processed excess soil must be sampled before it leaves the site for reuse.
    - Sampling must be overseen by a qualified person and analysis of samples must be done by an accredited laboratory.
    - Stockpile sampling frequency as outlined under Table 2 of Schedule E to O. Reg. 153/04 would apply.
    - Sampling would be required for the following minimum parameters: petroleum hydrocarbons, metals and hydride-forming metals, polycyclic aromatic hydrocarbons, sodium adsorption ratio and electrical conductivity, leachate analysis as outlined in the Soil Rules, volatile organic compounds, semi-volatile organic compounds (polychlorinated biphenyls, acid/base/neutral compounds, chlorophenols), trihalomethanes and select other regulated parameters (boron, hexavalent chromium, cyanide, pH, and mercury).
    - Sampling results to be kept at the depot for up to 7 years and provided to a provincial officer upon request.

- Notice:
    - These depots would be required to provide a written notice to the MECP Director (rather than file on the Excess Soil Registry) and the relevant local municipality (which would be applied in respect of all types of depots) to facilitate compliance, before commencing and upon closure of operations.
- Other:
    - Another type of depot cannot be set up at the same or adjoining property.
    - For greater certainty, an exemption from sections 27, 40 and 41 of the Environmental Protection Act does not affect the need for these depots to comply with other relevant laws and to acquire other relevant permissions, including any required permissions that may be issued by the ministry, other ministries, municipalities or other governing bodies.

3) Enhanced reuse opportunities for aggregate and stormwater management pond (SWMP) sediment

It is proposed that excess soil that is part of engineered aggregate as well as SWMP sediment, that is either being reused as engineered aggregate or in an infrastructure-related undertaking, would be provided flexibility in respect of the excess soil quality standards for asphalt road-related contaminants and naturally occurring exceedances, as follows:

- Asphalt-road impacted aggregate or stormwater management pond (SWMP) sediment:
    - Excess soil that is part of engineered aggregate material or SWMP sediment with exceedances of the excess soil quality standards applicable to a reuse site that can be attributed specifically to an asphalt road (e.g., from asphalt, tire wear), being F3 and F4 petroleum hydrocarbons (PHC) and polycyclic aromatic hydrocarbons (PAHs), is deemed to meet the standards for those listed parameters if:
        - Excess soil is being reused beneficially as engineered aggregate and finally placed in an asphalt road undertaking, or the SWMP sediment is being reused and finally placed within the road right-of-way associated with an asphalt road, either directly from a project area or following storage at a Class 1 site, Class 2 site or local waste transfer facility (LWTF); and

        - A qualified person determines that the excess soil exceeds the standards for these parameters solely due to the presence of the asphalt road (either by exclusion of other potentially contaminating activities (PCAs) and areas of potential environmental concern (APECs) at the project area, or sampling results consistent with those expected for asphalt-related contamination).
    - Additional rules for final placement may be contemplated to ensure there is no adverse impact, including possible setbacks from water bodies.

- Naturally elevated exceedances in engineered aggregate:
    - Excess soil that is part of engineered aggregate, with naturally occurring exceedances of the applicable excess soil quality standards for the reuse site in respect of certain parameters (that is, there was no addition of contaminants from any source at any time in the past), is deemed to meet the standards for those parameters if the following applies:
        - Excess soil is being reused beneficially as engineered aggregate in an undertaking, either directly from a project area or following storage at a Class 1 site, Class 2 site or local waste transfer facility (LWTF).
        - If a qualified person (QP) has completed a phase one environmental site assessment or an assessment of past uses, it has been determined that the parameter is not associated with a PCA or APEC at the project area; in other cases where a QP was not involved, the project leader has made reasonable efforts to take into consideration any past reports about past uses and activities respecting the project area and reached the same conclusion.
        - If the excess soil has been sampled by a QP, or the excess soil is being transported from a Class 1 site, the concentrations of that parameter are consistent with those found naturally in new aggregate being sourced and regularly used locally in the area, as determined using publicly available evidence and documented by a QP.
    - This approach is in contrast to the existing provision in the Soil Rules deeming compliance with the excess soil quality standards for excess soil with naturally elevated concentrations not exceeding local background concentrations, where the reuse site is required be

sampled by a qualified person to take advantage of the deeming provision.

4) **Allow greater reuse of soil to be coordinated between similar infrastructure projects**

To enhance coordination and reuse of soil between infrastructure projects, it is proposed that soil associated with project areas (the location where soil is excavated) and reuse sites (the location where soil will be finally placed) for infrastructure projects of the same type (e.g., road to road – the definition of "infrastructure" in O. Reg. 406/19 identifies types of infrastructure) and by the same project leader, being undertaken concurrently, may be managed and reused between those projects without being subject to sections 3 to 5 of the regulation (which provides that excess soil that leaves the project area is designated as waste unless it meets the criteria set out in sections 3 to 5, including the applicable excess soil quality standards). This will be permitted if all of the following conditions are met:

- The coordinated project areas and reuse sites are predetermined and identified as part of the same project planning process, and soil management activities are being undertaken concurrently as one coordinated effort across all of the project areas and reuse sites.
- The excess soil is being reused for a beneficial purpose.
- There is no evidence of visual or olfactory signs of contamination in respect of the soil being moved between coordinated project areas and reuse sites.

If soil is not being reused across the coordinated project areas and reuse sites and must be managed and disposed of elsewhere, it will be considered excess soil and subject to provisions in the regulation governing excess soil including sections 3-5 and the reuse planning requirements, if triggered. Transportation requirements would continue to apply if soil is being transported between different coordinated project areas and reuse sites (e.g., vehicle requirements, hauling records), as well as any other requirements for on-site management at a project area, such as storage, processing, excavation procedures, etc.

5) **Reduce reuse planning requirements for excess soil moved between infrastructure projects**

It is proposed that if a project leader for an infrastructure project area is required to file a notice in the Registry under section 8 of the Regulation, and is moving excess soil to another infrastructure-related undertaking, the project area will be exempt from requirements associated with completion of an assessment of past

uses, a sampling and analysis plan and sampling analysis report, excess soil destination assessment report and implementing a tracking system. These are the reuse planning requirements other than filing a notice in the Excess Soil Registry.

Note that there is currently an exemption (in Schedule 2) from all reuse planning requirements for infrastructure project areas where the excess soil will be deposited at a reuse site for an infrastructure undertaking owned the same project leader or a public body. This proposal differs in that it is not limited to situations where the reuse site for an infrastructure undertaking is owned by the project leader or a public body and can be relied on as long as both the project area and reuse site are for infrastructure projects or undertakings.

6) Allow in-situ sampling for stormwater management pond (SWMP) sediment

Where sampling and analysis is required, it is proposed that SWMP sediment could be collected in-situ and then tested, following the in-situ sampling frequencies in the regulation, subject to the following:

- Minimum parameters to be analyzed would remain the same as provided under the Soil Rules for SWMP sampling requirements.
- Additional rules in the Soil Rules associated with the sampling and analysis plan would be included to ensure sampling remains representative:
    - Sampling must be planned (distribution, numbers and depth) to ensure representative results from throughout the pond and each zone.
    - Post-dredging confirmatory sampling would be required to ensure results are still representative; the frequency and parameters may be determined by the qualified person.

7) Regional mapping of naturally occurring local background concentrations

MECP is considering the use of regional mapping of areas that naturally exceed the excess soil standards as a basis for enabling greater reuse of excess soil with such naturally occurring exceedances. The Soil Rules currently includes provisions deeming excess soil with naturally occurring exceedances of a parameter to meet the applicable excess soil quality standards for a reuse site if a qualified person has demonstrated that the excess soil contains a parameter that is also naturally occurring at the reuse site and that does not exceed the naturally occurring range of concentrations typically found in soil within the area of the reuse site (local background conditions).

We have heard from some stakeholders that a mapped approach may be useful for applying this deeming provision to enable greater reuse of excess soil as it would avoid site-by-site assessments. As such, we are seeking input on the concept and feasibility of the following proposed approach:

- Municipalities or other public bodies would develop regional scale maps that delineate an area with a naturally occurring exceedance of a specified parameter, and specify the related concentration that represents a local natural background condition for that parameter.

- Mapping may also set out an area to which the local natural background concentration for a parameter would be considered to apply, which may vary to a limited and reasonable extent from the actual area of the natural exceedances, for the purposes of providing a practical boundary for soil movement within that area that would limit the relocation of soil with natural exceedances to or from areas outside that area and that factors in potential risk at reuse sites.

- A study resulting in such mapping would be expected to:
    - document multiple lines of evidence
    - verify that sampling results used can be relied on to represent natural exceedances, not affected by anthropogenic sources of contaminants
    - ensure that the results are statistically reliable and reasonable for establishing a local background condition for the identified area.

- The maps would need to be accepted in writing by an MECP Director before the natural background concentrations could be applied within that area.
    - Early involvement and discussion with the MECP would be advised to ensure methods and results can be used.
    - MECP access to data to facilitate review of the mapping would be expected.
    - The mapping and background concentrations would be required to be publicly available on an MECP website.

- Once recognized by the MECP and made publicly available, the concentrations within those areas would be recognized as the applicable natural background standard for the specified parameters in that area.

MECP recognizes that various municipalities may already be contemplating such mapping and this proposal is intended to set out an approach that could recognize these efforts.

This proposal may require additional discussion prior to implementation and may not be finalized at the same time as other proposed amendments set out in this document.

8) Other clarifications and corrections

Other minor corrections or clarifications, including any consequential amendments to Regulation 347 and O. Reg. 153/04, would be made as part of this proposal. Additionally, the following proposed amendments are proposed that do not change the general policy intent:

i. With regard to soil reused within a project area, clarifications are proposed to ensure the intended flexibility is clear for reuse of soil within a project area. The following clarifications are proposed:
    - Soil that was transported from a project area, that was stored off-site temporarily (e.g., due to lack of storage space at the project area), and was then returned to a project area without being mixed with excess soil from other projects or any other materials, is treated as though it did not leave the project area once it has returned, and sections 3 to 5 would not be applied to the soil. However, the provisions of the regulation that apply to the transportation and off-site storage of excess soil would continue to apply. Reuse planning requirements would not apply if all excess soil is to be brought back for reuse at the same project area.
    - Soil that is being relocated within a project area that is planned to be contiguous upon completion, may be relocated to another part of the area associated with that same project as though it did not leave a project area, even if the area to which it is being relocated is not contiguous with the area where the soil was excavated at the time of relocation. Transportation requirements for excess soil would continue to apply.

ii. Excess soil that is temporarily used in an undertaking to facilitate development but does not remain at the reuse site permanently for final placement following the completion of the undertaking (e.g., a temporary driveway, access road), is to be treated the same as excess soil temporarily stored at a reuse site, and would not be required to

meet the excess soil quality standards under sections 3 to 5 of the regulation. The following requirements would apply:

- The area for the temporary undertaking must be owned or operated by the same project leader as the project from which the excess soil originated.
- The excess soil must be removed from the undertaking area no later than the date of completion of the undertaking.
- There is no visual or olfactory evidence of contamination in the excess soil.

Once the excess soil is removed from the site after the temporary use has completed, the site will not be treated as a project area if the only soil being removed is the soil used in the temporary undertaking.

iii. The rules for sampling when substances (such as conditioning agents) have been added to soil to facilitate excavation (e.g., for tunneling) or transportation would be clarified to ensure that these substances are included in sampling analysis plans and results/reports, and that safety information related to these substances is documented.

iv. The frequency at which samples must be analyzed for parameters that are included in the minimum parameter sampling list but are not contaminants of potential concern associated with a PCA or APEC, would be able to be reduced at the discretion of the qualified person. The revised analysis frequency would be required to be statistically significant and rationalized in the Sampling and Analysis Plan. A minimum frequency as a percentage of the otherwise required frequency may be included in the final rules. The frequency of excess soil sampling and analysis of contaminants of potential concern would remain unchanged.

v. The definition of “public body” would be expanded to also include corporations established by municipalities under s. 203 of the *Municipal Act, 2001.*

vi. The regulation would be amended as needed to allow the establishment of more than one type of depot by the same owner or operator at the same property or adjoining properties, with the exception of small liquid soil depots (i.e., another type of depot cannot be set up at the same or adjoining properties where a small liquid soil depot is set up).