

Terms of Reference: Planting Medium

Purpose:

- To provide both inventory & assessment as well as management information for any site soils to be used as planting medium, the Town can request two documents - a Soils Report for Planting Medium for the inventory and assessment, and a Soils Management Plan for Planting Medium for the management of those soils.
- The **Soils Report for Planting Medium** is a supporting document and is to be completed for the criteria that it is needed for. A Soils Report for Planting Medium can be required as information for:
 - Agricultural Impact Assessments (AIA)
 - Environmental Site Assessments (ESA)
 - Landscape Plans.
- When required in support of an AIA the Soils Report is to assess the class of and suitability of soils as agricultural growth medium.
- When required in support of an ESA the Soils Report is to assess for potential contamination of any site soils that will be redistributed as growth medium or for use in surface grading.
- When required in support of Landscape Plans the Soils Report is to assess the suitability of site soil sources as an arboriculture growth medium for the proposed works.
- The **Soils Management Plan for Planting Medium** is a graphic plan that uses the soils report information to show the approximated source locations and horizon depths for excavation, as well as the intended storage areas and criteria.

Required in Support of:

Through a Preliminary Meeting or Pre-Consultation Meeting, Town staff will confirm if a Soils Report and Soils Management Plan for Planting Medium are required.

- Shall be required in support of
 - Subdivision Detailed Design
 - Temporary Use
 - Sensitive sites (such as heritage & natural heritage)
 - [any other application types]
- May be required in support of:
 - Official Plan Amendment Applications
 - Zoning By-Law Amendment Applications
 - Draft Plan of Subdivision Applications
 - Site Plan Applications
 - Site specific conditions
 - Any other development application deemed applicable



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Prepared By:

- Soils Report for Planting Medium – by a qualified Pedologist or an approved equivalent.
- Soils Management Plan for Planting Medium – by a qualified Pedologist, Landscape Architect, Engineer, or CAD technician.

Content:

Soils Report (Planting Medium)

The Soils Report may be scoped from the requirements below at the discretion of the Town. Where the Soils Report is to be scoped, Town staff will indicate this and describe the requirements at the Pre-Consultation Meeting.

Below is the required formatting for the Soils Report with a brief description as to what should be outlined under each section. At a minimum, the Soils Report should include:

1.0 Introduction

1.1 Site and Scope of Work

- Include georeferenced mapping of the site using the same basepoint as the developer's engineering consultants to show to show:
 - Legal survey of site.
 - Proposed extent of development (if known).
 - Current aerial imagery, and historical if deemed necessary.
 - Areas of current and past use.
 - Locations and ID# where soil samples were taken.
- Describe sampling methodology and identify sample grid/spacing size.
- Reference geotechnical report (borehole locations, analysis and conclusions) whenever one is required for the site and note when geotechnical borehole samples were assessed for the soil report as well.

1.2 Policy Framework and Standards

- Reference what the report is being required in support of.
 - Where the Soils Report is for an AIA or ESA reference the applicable provincial policy that the report has been prepared to.
- Reference the standards applied for:
 - Soil testing



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- Soil classification
- Assessment as a growth medium
- Describe how the report has met each of the requirements and design guidelines identified in the applicable standards.
- Reference provincial soil mapping for the area the site is located in. If there are any limitations of that mapping for the purpose of this report (such as scale and other land uses) identify them and clarify how they will be addressed through the report.

2.0 Inventory

2.1 Provide a site map that shows all the sample site locations and reference numbers.

- Include a legal survey underlay.
- Note sample sites that were taken as part of the Geotechnical Report sampling.

2.2 For each sample site, provide a table of Soil Assessment and Specifications that includes:

- Site location (polygon and applicable sample sites)
- Classification, texture and range of composition
- % Organic content
- % debris (rocks, sticks, unknown fill material) and passable screening sieve size
- pH and alkalinity
- Content levels of moisture, salt/chlorides, phosphorus, potassium and magnesium
- Content levels of agricultural chemicals (pesticides, herbicides, fertilizers) or hazardous material (ex. petro chemicals), as necessary
- Any other assessments or specifications relevant to the purpose of the Soils Report.
- See Table 1 – Soil Assessment & Specifications for sample table. Note that lower horizon material should allow draining and contain lower organic content than the O-horizon material – to minimize settling while still supporting growth.

2.3 Characterize the depths and types of soils observed onsite. Note the development of distinct horizons where applicable.



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- Provide an In-Situ Soil table and accompanying soil map of area polygons to estimate the extent of the soils that were assessed, based on the sampling results.

3.0 Analysis

3.1 Provide a summary of overall site soil quality and volumes.

- Analysis of sub-base material – this can be coordinated with borehole samples and geotechnical testing information.
- Potential for O-horizon and lower horizon(s) growth medium
- Potential for off-site re-use (where applicable)
- Need for remediation

3.2 Identify the soils and horizons that would be suitable as growth medium – **without amendments**.

- Identify specific polygons and horizons to inform excavation operations

3.3 Identify the soils and horizons that would be suitable as growth medium – **with amendments**.

- Identify specific polygons and horizons to inform excavation operations.
- Identify specific amendments that would be required. Amendments for pH are not acceptable.

3.4 Identify the soils and horizons that are **not suitable** as growth medium.

- Indicate reason (ex. pH or alkalinity, salt impacted, hazardous contamination, heavy agricultural chemical content)

4.0 Recommendations

4.1 Recommended soil habitat zones.

- Identify which site soils from the inventory map should be used and for what purpose – medium for what kind of growth and at what horizons/depths.
- For arboriculture, refer to Table 2 – Minimum Soil Volumes for Mature Trees as sample guideline for overall urban forest minimum planting medium volumes.

4.2 Recommendations for soils not suitable as growth medium.

- Reference provincial Excess Soil Quality Reuse standards
- Indicate off-site treatment, disposal or additional testing requirements for any contaminated or chemical laden soils.



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4.3 Recommended soil management.

- Provide a Soils Management Plan for Planting Medium.
- Include any planting medium soils to be re-used on site or temporarily stored on site prior to relocation off-site. provide stockpiles of Soil table.
- Include storage height and ESC, incorporate information with ESC, grading and removals sheets as necessary.

Resources Reference:

List any documents referenced in the body of the terms of reference or used to develop it.

o Table 1: Soil Assessment & Specifications

	Sandy Loam	Silt Loam	Loam
% Sand	-80%	0-35%	30-55%
% Silt	% Silt will make up the remainder of the mix	% Silt will make up the remainder of the mix	% Silt will make up the remainder of the mix
% Clay	8-20%	0-25%	8-25%
Screening	≥ 7.5 cm mesh	≥ 7.5 cm mesh	≥ 7.5 cm mesh
% Rocks and Sticks	Maximum 10%	Maximum 10%	Maximum 10%
pH	7.0 to 7.5	7.0 to 7.5	7.0 to 7.5
% Organic Content	4-8% (determined by oven-dried weight)	4-8% (determined by oven-dried weight)	4-8% (determined by oven-dried weight)
Phosphorus (P)	20-40 ppm	20-40 ppm	20-40 ppm
Potassium (K)	100-200 ppm	100-200 ppm	100-200 ppm

Submission Requirements:

- Digital report in PDF format
- File size not to exceed 4 GB



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