



MUNICIPAL  
PROPERTY  
ASSESSMENT  
CORPORATION



# **METHODOLOGY GUIDE**

## **VALUING FARMS IN ONTARIO**

**Valuation Date: January 1, 2016**

**AUGUST 2016**



**MUNICIPAL PROPERTY ASSESSMENT CORPORATION**

August 22, 2016

The Municipal Property Assessment Corporation (MPAC) is responsible for accurately assessing and classifying property in Ontario for the purposes of municipal and education taxes.

In Ontario's assessment system, MPAC assesses your property value every four years. This year, MPAC is updating the value of every property in the province to reflect the legislated valuation date of January 1, 2016.

MPAC is committed to provide Ontario property owners, municipalities and all its stakeholders with the best possible service through transparency, predictability and accuracy in values. As part of this commitment, MPAC has defined three levels of disclosure of information in support of its delivery of this year's assessment update. This Methodology Guide is the first level of information disclosure.

This guide provides an overview of the valuation methodology undertaken by MPAC when assessing farm properties for this year's update ensuring the methodology for valuing these properties is well documented and in alignment with industry standards.

Property owners can access additional information about their own properties through [aboutmyproperty.ca](http://aboutmyproperty.ca). Login information for [aboutmyproperty.ca](http://aboutmyproperty.ca) is provided on each Property Assessment Notice mailed this year. Additional information about MPAC can be accessed at [mpac.ca](http://mpac.ca).

A handwritten signature in black ink, appearing to read "Antoni Wisniowski". The signature is fluid and cursive, with a long horizontal stroke at the end.

Antoni Wisniowski

President and Chief Administrative Officer

A handwritten signature in black ink, appearing to read "Rose McLean". The signature is cursive and somewhat stylized, with a prominent loop at the end.

Rose McLean, M.I.M.A.

Chief Operating Officer

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## 1.0 Introduction

The Municipal Property Assessment Corporation (MPAC) – mpac.ca – is responsible for accurately assessing and classifying property in Ontario for the purposes of municipal and education taxation.

In Ontario, property assessments are updated on the basis of a four-year assessment cycle. In 2016, MPAC will update the assessments of Ontario's nearly five million properties to reflect the legislated valuation date of January 1, 2016. Assessments updated for the 2016 base year are in effect for the 2017–2020 property tax years.

The last Assessment Update was based on a January 1, 2012, valuation date. Increases between the 2012 assessed value and 2016 assessed value are phased in over a four-year period. Any decreases in assessment are applied immediately.

It is important to ensure that the valuation methodology applied is capable of providing a realistic estimate of current value at the relevant valuation date, which, in turn, enables all stakeholders to understand the valuation process and have confidence in the fairness and consistency of its outcome.

This Methodology Guide has been prepared for the benefit of MPAC assessors, property owners and their representatives, municipalities and their representatives, Assessment Review Board members, provincial officials, and the general public.

This guide outlines the valuation process to be followed by an assessor, including steps that require appraisal judgment. It is incumbent upon the assessor to make informed decisions throughout the valuation process when arriving at estimates in current value.

### 1.1 Properties Covered by This Methodology Guide

Farm properties vary widely in size and agricultural production. There are a variety of components that need to be considered when determining the value of a farm property. These include the value of the farmland, the value of the farm outbuildings, the value of the residence, as well as any other non-farm structures that may exist.

MPAC treats land used for primary agricultural production/operation as farmland. Primary agricultural production/operation is the raising or production of primary agricultural commodities on a commercial basis and includes:

- field crops
- livestock raising, breeding and grazing (i.e., cattle, swine)
- poultry rearing, hatchery
- dairy farming
- fruit orchards and vineyards
- maple syrup producing properties (subject to criteria set out in Ontario Regulation 286/04)
- board and maintenance of horses (subject to criteria set out in Ontario Regulation 100/05)
- horticulture, including sod, nursery stock and Christmas trees
- fish farming, including licenced ponds that are used to propagate/culture and sell bass and trout
- fur farming
- bee keeping

MPAC **does not value** the following uses of a property as a farm:

- the retailing of goods or services
- storage of primary agricultural commodities for others as a business operation
- maintenance of livestock or other animals for recreational purposes
- manufacturing of primary agricultural commodities
- the breeding and raising of pets

The following MPAC property codes are used to categorize the various types of farms in Ontario:

- 200      Farm property without any buildings/structures
- 201      Farm with residence – with or without secondary structures; no farm outbuildings
- 210      Farm without residence – with secondary structures; with farm outbuildings

- 211 Farm with residence – with or without secondary structures; with farm outbuildings
- 220 Farm without residence – with commercial/industrial operation
- 221 Farm with residence – with commercial/industrial operation
- 222 Farm with a winery
- 223 Grain/seed and feed operation
- 224 Tobacco farm
- 225 Ginseng farm
- 226 Exotic farms (i.e., emu, ostrich, pheasant, bison, elk, deer)
- 227 Nut orchard
- 228 Farm with gravel pit
- 229 Farm with campground/mobile home park
- 230 Intensive farm operation – without residence
- 231 Intensive farm operation – with residence
- 232 Large scale greenhouse operation
- 233 Large scale swine operation
- 234 Large scale poultry operation
- 235 Government (agriculture research facility – predominately farm property)
- 260 Vacant residential/commercial/industrial land (owned by a non-farmer with a portion being farmed)
- 261 Land owned by a non-farmer improved with a non-farm residence with a portion being farmed
- 262 Land owned by a farmer improved with a non-farm residence with a portion being farmed

It should be noted that these are general guidelines that vary depending on the specific circumstances of a particular property.

An assessor may also make reference to additional Methodology Guides for properties that do not fall precisely within the description of one of the property codes listed above.

## 1.2 Legislation

The main legislation governing the assessment of properties in Ontario for property tax purposes is contained in the Assessment Act.<sup>1</sup>

The Act contains important definitions and states what property is taxable and how it should be valued. Section 19(1) of the Act requires that land be assessed at current value, which is defined to mean, in relation to land, “the amount of money the fee simple, if unencumbered, would realize if sold at arm's length by a willing seller to a willing buyer.”

To establish the current value of farm properties, Section 19(5) of the Assessment Act states that: “For the purpose of establishing value of farm lands used only for farm purposes and the buildings thereon used solely for farm purposes, including the residence on the farm lands, consideration shall be given to the current value of the lands and buildings for farming purposes only, and in determining the current value, consideration shall not be given to sales of lands and buildings to persons whose principle occupation is other than farming.” This means properties that are used for farm purposes are assessed based on their current use, not any potential use to which the property could be put, such as development land. The lands to which Section 19(5) applies is set out in Section 44 and Section 44.1 of Ontario Regulation 282/98.

Under Section 3(1)19 of the Assessment Act, one acre of every ten acres of farmed property may be entitled to receive a Farm Forestry Exemption (FFE). FFE is warranted if the property is assessed as a farm and the property has some forested or woodland portion that is not subject to either the Managed Forest Tax Incentive Program (MFTIP) or the Conservation Land Tax Incentive Program (CLTIP).

In addition, legislation governs the classification of farm properties for property tax purposes.

The Minister of Finance filed Ontario Regulation 430/15 on December 18, 2015, which added additional rules affecting the valuation and classification of properties on which a third-party sign (billboard) is located. To comply with the regulation, the income attributable to a third-party sign will not be included in the valuation of any property for assessment purposes.

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<sup>1</sup> Assessment Act, R.S.O 1990, c A.31: <https://www.ontario.ca/laws/statute/90a31>.

### 1.3 Classification

MPAC's role is to accurately assess and classify all properties in Ontario in accordance with the Assessment Act and its associated regulations established by the Government of Ontario. The classification of a property will determine which tax rate will be applied by the municipality or taxing authority. All properties are classified according to their use, and Ontario Regulation 282/98 sets out how various property uses are classified.

Farm properties are classified in the Residential Property Class in accordance with Section 3(1)2 of Ontario Regulation 282/98 of the Assessment Act, which includes "farm land to which subsection 19(5) of the Act applies for the taxation year for which the land is being classified, other than land in the farm property class or land prescribed under section 44."<sup>2</sup>

If the owner of the property meets the criteria for the Farm Property Class as administered by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the farmland and farm outbuildings are taxed at 0% to 25% of the municipal residential tax rate. If the property is farmed but does not meet the criteria of the Farm Property Class (FT), the property would be valued as a farm by MPAC (under Section 19.5) but would be placed in the Residential Property Class (RT). An application for inclusion in the Farm Property Class Tax Rate Program must be approved by OMAFRA on or before the specific date set out in the table included in Section 8.1 of Ontario Regulation 282/98.

If a portion(s) of a farm property is used for non-farm purposes, the portion is valued and classified according to its use. This is to ensure that the appropriate value and tax class is applied to the various uses of the property.

Where there is a farm residence occupied by the farmer, this is assessed in the Residential Property Class along with one acre of land valued at the farmland rate. Where there is a residence on a farm property that is occupied by a non-farmer, this is assessed in the Residential Property Class along with one acre of land valued at the residential rate. The separate assessment of the farm residence is necessary as the residential tax rate applies to the portion of the property that is used for residential purposes.

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<sup>2</sup> Ontario Regulation 282/98, GENERAL: <https://www.ontario.ca/laws/regulation/980282>.



## 1.4 The Use of This Methodology Guide

This Methodology Guide is intended to:

- Ensure MPAC’s assessed values for these properties are fair, accurate, predictable and transparent.
- Provide direction to assessors and clear explanations to municipalities, taxpayers and Assessment Review Board members.
- Ensure that MPAC’s methodology for valuing these properties is well documented and aligns with industry standards.
- Explain the thought process/decision-making process that an assessor should undertake to apply the valuation methodology.
- Ensure a consistent approach to valuing these property types.
- Support MPAC assessors in conducting their due diligence in:
  - applying Ontario’s legislation and regulations
  - adhering to industry standards for market valuation in a mass appraisal environment

It should be noted that this Methodology Guide is not intended to be a substitute for an assessor’s judgment in arriving at a market value–based assessment (i.e., current value) for a particular property. However, given that the Methodology Guide explains industry standards for property assessment, conforms to valuation industry norms, and adheres to provincial legislation and regulation, MPAC assessors are expected to follow the procedures in the Methodology Guide and be able to clearly and satisfactorily justify any deviations from it.

## 1.5 Consultation and Disclosure

MPAC is committed to providing municipalities, taxpayers and all its stakeholders with the best possible service through transparency, predictability and accuracy. In support of this commitment, MPAC has defined three levels of disclosure as part of its delivery of the 2016 province-wide Assessment Update.

- **Level 1** – Methodology Guides explaining how MPAC approached the valuation of particular types of property

- **Level 2** – Market Valuation Reports explaining how the methodology outlined in Level 1 has been applied at the sector level for the purposes of each assessment
- **Level 3** – Property Specific Valuation Information available to property taxpayers, their representatives and municipalities

### **1.6 Machinery and Equipment**

Farm properties may contain machinery and equipment that is used for farming purposes.

Under Section 3(1) 17 of the Assessment Act, all machinery or equipment used for farming purposes, and the foundations upon which they rest, are exempt from taxation.

## 2.0 The Valuation Process

The valuation process begins with a determination that the current use of the subject property is farming.

Any reliance upon this guide is made only after the assessor has determined that the current use of the subject property is that of a farm.

Assessors determine the value of a property using one of three different approaches to value:

- the direct (sales) comparison approach
- the income approach
- the cost approach

### 2.1 Outline

In the **direct (sales) comparison approach**, value is indicated by recent sales of comparable properties in the market. In considering any sales evidence, it is critical to ensure that the property sold has a similar or identical highest and best use as the property to be valued.

In the **income approach** (or, more accurately, the income capitalization approach), value is indicated by a property's revenue-earning power, based on the capitalization of income. This method requires a detailed analysis of both income and expenditure, both for the property being valued and other similar properties that may have been sold, in order to ascertain the anticipated revenue and expenses, along with the relevant capitalization rate.

In the **cost approach**, value is estimated as the current cost of reproducing or replacing improvements of the land (including buildings, structures and other taxable components), less any loss in value resulting from depreciation. The market value of the land is then added.

MPAC uses the cost approach to value farm properties. This valuation method is widely recognized by experts in the appraisal profession.

### 2.2 Approach

There are three main phases in the process used by MPAC:

- data collection
- analysis of the data collected
- valuation

## 2.3 Data Collection

The data required for farm property valuations comes from a number of sources:

- land title documents
- building permits
- on-site property inspections and communications with property owners
- review of sales transactions

Data collection may also include an inspection to obtain physical and descriptive information about the location, size and use of the property; the quality of the land in terms of type and depth of soil, topography, stoniness, drainage, susceptibility to flooding and/or erosion, etc.; the age and type of the residence, if there is one; the extent of any farm outbuildings and their uses.

MPAC staff may also discuss with the farmer the detail of the farming operations carried out on the property to obtain accurate information about its use and agricultural capability.

MPAC continually collects and updates detailed information for every property in Ontario to ensure that similar property types are valued consistently within the market area.

## 2.4 Data Analysis

The market value of land used for farming purposes must reflect its current use as agricultural land. To establish the value of farmland in its current use, MPAC analyses sales of vacant farmland purchased by farmers.

After the 2012 Assessment Update, the Ministry of Finance made recommendations to MPAC as part of the Special Purpose Business Property Assessment Review (SPBPAR). Two of the recommendations pertained to farm properties:

- Improve the sales verification process by ensuring that analysis of farm sales reflects only sales of farmland to a farmer.
- Strengthen the accuracy and equity of the valuation process by ensuring that an adequate sample size is used for farm sales analysis, such as having regard for a larger geographic area and expanding the sales analysis period.

To address the concerns that have been expressed about the accuracy of the assessment of farmland, MPAC has implemented both of these recommendations for the 2016 CVA.

MPAC, in consultation with municipal and industry stakeholders, developed an enhanced sales verification and analysis process for the 2016 Assessment Update. This enhanced sales verification process ensured that only sales of farmland to farmers are used in the analysis. As part of this process, a mandatory review of all vacant farmland sales of 10 acres or more was completed. A standard letter and farm sales questionnaire is sent to all new owners of farmland each month. MPAC reviews the farm sales questionnaires and conducts follow-up phone calls and/or property inspections to obtain more detailed information, as required.

To strengthen the accuracy and equity of the farm valuation process and to ensure an adequate sample size of farm sales were used in the analysis for the 2016 CVA, MPAC made the following adjustments to its process:

- increased the sales period to 8 years (it was previously 5 years)
- included sales of properties 10 acres or larger (it was previously 20 acres or larger)
- included sales of properties with minimal outbuilding value (less than 25%)

Including the sales of smaller parcels of farmland and farmland with minimal outbuildings assists with developing land rates for organic soils. Properties with minimal outbuildings sell very similarly to vacant farmland. These changes increased the number of farm sales reviewed by 39% and allowed MPAC to gain greater market evidence.

In addition, to ensure equity of the farmland valuation process, MPAC undertook a comprehensive review of farm neighbourhoods. This review included refining boundaries and examining where combination or expansion of farm geographic neighbourhoods needed to occur. Combining farm neighbourhoods provided MPAC with more market transactions to analyze in determining land rates in specific geographic areas. As part of this process, MPAC also reviewed fringe and bordering areas to ensure equity of farm neighbourhoods between geographic regions.

## 2.5 Valuation

The key elements of a farm's assessment are provided below.

### **Farmland**

The farmland is assessed according to its agriculture capability (i.e., its ability to produce crops and/or maintain livestock). Farmland is classified into six different quality classes, with Class 1 farmland having the highest agricultural capability and therefore the most valuable type of farmland. All farms in Ontario are assigned to a farm neighbourhood for establishing a current value. Farm neighbourhoods capture differences in location and seek to take into account common factors such as climatic region, soil type and suitability, and similar properties selling for similar prices per acre. Within each farm neighbourhood, adjustments are made to reflect different soil quality classification.

### **Residence**

The value of the residential structure is determined by establishing a replacement cost of the building less any depreciation. This approach takes into account the age, size, type and quality of the residence.

### **Residence Site**

If the farm residence is occupied by the person farming the property, one-acre of farmland is typically attributed to the residence for classification purposes and is valued at the highest class of farmland rate present on the property. The farm residence and the one acre of farmland are classified in the Residential Tax Class, providing they are used solely for residential purposes.

If the residence is occupied by someone other than the person farming the property, it is treated as a non-farm residence and any land associated with the residence not being farmed is valued at residential land values. The non-farm residence and any land associated with it, is classified in the Residential Tax Class, provided they are used solely for residential purposes.

### **Farm Outbuildings**

A farm outbuilding is any improvement, other than a residence, that is used for farming operations (e.g., a barn, silo, grain bin, etc.). Farm outbuildings are valued on the depreciated replacement cost approach, taking into account their design, age, size, quality of construction, etc.

## **Other Buildings**

All other buildings (e.g., a retail store) not used in the farm operation are valued on the depreciated replacement cost approach, taking into account their use, design, age, size, quality of construction, etc. Other buildings are classified according to their use (ie: residential, commercial, industrial, etc.).

### **2.6 Validating the Results**

In validating the assessment, it is necessary to carry out a series of checks to ensure that all relevant parts of the property have been included in the valuation. The next part of the process is to compare the valuation with market evidence available in relation to similar properties.

## 3.0 The Valuation

### 3.1 The Cost Approach – Main Steps

The cost approach derives a value by estimating the cost to replace the functionality and utility of a property, in this case, a farm property. In broad terms, this requires three main steps.

- 1) Establish the costs as new to construct the improvements.
- 2) Deduct all forms of depreciation – the difference between the cost as new and the market value of the improvements (i.e., the amount the improvements would sell for as of the valuation date).
- 3) Add the current value of the land to the depreciated value of the improvements.

### 3.2 Cost Guides

MPAC uses various cost guides to value all structures on farm properties. Residential structures are valued using the 1980 provincial cost manual indexed to the legislated valuation date. Farm structures are valued using the MPAC Agricultural Cost Guide, and commercial and industrial structures are valued using commercial and industrial cost rates. The use of cost guides, standardized physical depreciation tables and adjustments for other forms of depreciation ensures that a consistent approach is used by MPAC when valuing all structures on farm properties.

All cost guides contain data that reflects the cost of labour, equipment and materials for each structural element of an improvement.

### 3.3 Replacement Cost New

Replacement cost new is the current cost of a similar new asset that has the nearest equivalent utility as the asset being valued.

Using existing records and/or carrying out an inspection of a property to collect physical and descriptive data about the existing land and buildings (i.e., age, size, use, etc.), MPAC is in a position to carry out the costing exercise.

MPAC uses its various cost guides to determine the replacement cost of all buildings and structures on farm properties.

Having determined the replacement cost new of the property by applying the cost guides to the actual improvements (i.e., buildings, structures, etc.), or their modern equivalent, the next step is to consider any adjustments to replacement cost new to reflect depreciation.



### 3.4 Depreciation

The difference between the cost of a new building (or other improvement) and the amount the market would pay for the improvements is the depreciation inherent in the building.

Depreciation can be quite complex, and making adjustments to replacement cost requires knowledge, analysis and judgment to accurately reflect depreciation.

There are three classes of depreciation to consider:

- physical (resulting from wear and tear due to use and exposure to the elements)
- functional obsolescence (resulting from some defect in the existing property)
- external obsolescence (resulting from adverse factors outside the property)

Both physical and functional depreciation can be sub-divided into two types:

- curable (cost effective to fix)
- incurable (cannot be fixed or cannot be fixed cost effectively)

All elements of depreciation affect the value of a property. Depreciation can be quantified in a number of ways, but in order to help with the quantification process, it is important to identify all forms of depreciation present from the onset.

### 3.5 Identifying Depreciation Due to Age or Condition

All properties suffer physical decline as they age. The amount of depreciation applied depends on three factors:

- the expected useful life assigned to the building or structure
- the quality of the construction
- whether any variance to the effective age has been identified

Age-related depreciation is generally applied on the basis of the effective age of a building or structure. A brand new building has very little depreciation (if any), whereas a building or other improvement approaching the end of its useful life has a significant amount of depreciation.

Most buildings would be assigned a typical expected useful life based on construction style. However, there are some uses that tend to shorten the life of a property due to greater physical wear and tear.

A determination of effective age is completed by an evaluation of the physical state and condition of the improvements. If the condition of the improvements is typical for the age of the structure, then no adjustments are required. If the improvements are worse than typical, then an age variance can be applied. Assigning an older effective age increases the depreciation. If the improvements have recently been upgraded or renovated, then the effective age can be decreased. This lowers the amount of age-related depreciation applied by the cost system.

Consideration also needs to be given to whether any repairs may be necessary or whether there is any deferred maintenance that may impact the value of the existing buildings or other improvements. When accounting for deferred maintenance, the assessor must ensure that the loss in value is not already being accounted for as age-related depreciation.

### **3.6 Identifying Functional Obsolescence**

Functional obsolescence relates to some defect in the existing buildings or structures that make them less valuable than a modern equivalent.

There are two main forms of functional obsolescence:

- The building size, construction and/or height are overbuilt for current requirements.
- Other elements of the property make it less efficient to operate than more modern farm properties (e.g., design or layout).

### **3.7 Identifying External Obsolescence**

External obsolescence is a loss in value that results from factors that are external to the property itself and outside the control of the property owner.

Farm properties may experience external obsolescence as a result of changes in feed costs, commodity prices or diseases, which impact the agricultural industry as a whole or within a specific segment. External obsolescence may impact the value of agricultural buildings on a farm property.

### 3.8 Quantifying Depreciation

Physical deterioration and some elements of functional obsolescence may be taken into account by the use of a replacement cost that assumes a modern farm building is replacing the existing property.

However, the valuation relates to the *actual* property so adjustments still need to be made in the valuation to reflect such factors as defects, outstanding repairs and deferred maintenance.

As is often the case, the detailed information needed to calculate the impact of functional obsolescence may not be readily available. In these situations, the functional obsolescence may be recognized by a qualitative adjustment made by MPAC's assessor as to the impact it is likely to have on the current value of the property. This type of deduction can be applied as a percentage deduction on a component-by-component basis or by a property-wide deduction.

In terms of external obsolescence, MPAC analyzed microeconomic and macroeconomic forces that would impact each sector's economic viability for farm buildings across Ontario.

Having made all appropriate adjustments to the replacement cost for depreciation and obsolescence, the resulting value will be an estimate of the contribution of the improvements to the current value of the subject property.

### 3.9 Valuing Farmland

Farmland values are based on the land's agricultural capability and other factors, such as location. The value of a farm is not based on other potential uses for the land (e.g., development). In determining farmland rates, only sales of land to be used for farm purposes are analyzed.

#### **Farmland Neighbourhoods**

A farmland neighbourhood may be defined by natural, man-made or political boundaries and may be reviewed and updated as changes impact an area.

Each farm property in Ontario is assigned a farmland neighbourhood for the purposes of establishing a value. These geographic areas capture differences in location and attempt to address commonalities such as:

- climatic zones or regions
- soil quality
- similarities in market value
- similarities in farm operations

Soil parcels are groupings of acreages of farmland with similar characteristics. Factors that affect agricultural capability are the most critical element to be considered when valuing farmland. By identifying soil parcels on the farm that have similar characteristics, we can assign an associated soil classification based on agricultural capability. Each class of soil on the farm is then valued according to its respective capability.

### Soil Classification

The land is assigned to different classifications based on factors that measure the agricultural capability of the soil.

MPAC uses a Land Classification Point System as a guide for valuing farmlands based on its agricultural capability. MPAC’s soil pointing process allocates and deducts points from 100 in increments of 5, the upper limit is 95 and the lower limit is 5. The points are determined using the following seven factors that affect mineral soils: soil texture, topography, stoniness, drainage, flooding, erosion, depth to bedrock.

#### Soil Texture

Texture refers to the amount of sand, silt and clay in the soil. MPAC uses five texture classifications. Soil texture is a major influence on the type of crops grown, as well as on crop yield, and varies considerably across Ontario.

Characteristic	Description	Points
Loam, Silt Loam	This soil has approximately equal amounts of sand, silt and clay. Silt Loam feels somewhat gritty but is fairly smooth and slightly plastic when wet.	0
Sandy Loam	This soil is predominantly sand with some silt and clay. It feels gritty but is not as loose as sand.	5
Clay Loam	This soil contains enough clay to be sticky. It is often lumpy when dry.	5
Clay	This soil contains a high proportion of small soil particles (clay). It feels smooth and is sticky and plastic when moist, and hard and cloudy when dry.	10–15
Sand	This soil contains a high proportion of the largest soil particles (sand). It is usually porous and open. It has a coarse, gritty feel.	10–20

## Topography

Topography refers to the lay of the land. Five topography classifications are used:

Characteristic	Description	Points
Level	This land has 0–2% slope (i.e., the slope is 2 feet or less per 100 feet of horizontal distance). Land is flat or nearly flat.	0
Gently Sloping	This land has 3–6% slope. The erosion hazard is greater than level land.	5
Rolling	This land has considerable slope, 7–12%, and usually has some irregularity. A moderate erosion hazard exists. It presents no serious handicap to farm machinery.	10
Hilly	This land has 13–20% slope. A moderately severe erosion hazard exists. Farm machinery can be used, but with difficulty.	15–25
Steep	This land has 21–30% slope. It is susceptible to severe erosion and is not suited for extensive use of farm machinery.	30–65

The steeper the slope, the harder it is for farm equipment to access the lands for crops and the harder it is for livestock to access the land for grazing; therefore, the greater the slope, the greater the point deduction for soil classification.

## Stoniness

Stoniness refers to the amount of stones in the soil profile. Three stoniness classifications are used.

Characteristic	Description	Points
Stone Free	This land has little or no stone in the soil.	0
Moderate Stone	This land has sufficient stone to interfere with the cultivation of some crops and the use of certain machinery, but can be used for regular rotation.	5–15
Very Stony	This land has too much stone to allow cultivation, but is suitable for use as pasture.	20–40

## Drainage

Drainage refers to the ease of movement of water and air in the soil or to the height of the water table. Four drainage classifications are used.

Characteristic	Description	Points
Good	Good drainage is determined when soil layers are well defined, uniform, and bright reddish or yellowish brown. Movement of air and water through the soil is not restricted. "Fair" or "Poor" drainage soils may be included in this class if they have been effectively tile drained.	0
Fair	Fair drainage is determined when the surface soil is darker than in well-drained soil. Underlying layers are dull, yellowish brown, mottled or blotched with reddish brown. They are not as well defined as well-drained soils, although they do provide fairly favourable conditions of air and water movement.	5
Rapid	Rapid drainage usually occurs on sand or gravel soils with no finer texture overburden. Horizon colours are bright and uniform. It sometimes occurs on soils on steep slopes.	5–15
Poor	Poor drainage is determined when the surface soil is very dark and the underlying layers are dull grey with reddish-brown blotches. Water and air movement through the soil is restricted.	20–40

In instances where certain crops are best suited to sandy or sandy loam soils, points should not be deducted automatically for rapid drainage (i.e., ginseng, peanuts and tobacco).

## Flooding

Flooding refers to the periodic flooding of land by an overflow from streams or rivers.

Characteristics/Description	Points
No Flooding	0
Flooding	10–30

## Erosion

Erosion refers to the loss of soil by water and wind. Three classifications are used.

Characteristic	Description	Points
None	No surface soil removed. No noticeable erosion takes place.	0
Moderate	Most of surface soil removed. Some subsoil ("B" horizon) material is present in the cultivated layer.	10
Severe	All of the surface soil has been removed. Subsoil material ("C" horizon) predominates in the cultivated layer.	20

## Depth to Bedrock

Depth to bedrock refers to the depth of the soil over the underlying bedrock. Where this distance is very small (i.e., less than one foot), the soil is often susceptible to erosion and may lack topsoil.

Characteristic	Description	Points
Deep	Over 3'	0
Moderate	2' to 3'	20
Shallow	3" to 1'6"	30–65

Once all the factors are considered, the points are deducted and the final "score" is used to determine the soil class.

General descriptions of soil classes are listed below. It is important to remember soil classes can change region to region and municipality to municipality. Class 1 in one municipality can be different than Class 1 in another municipality.

## Soil Quality

The two types of soil found throughout Ontario are mineral and organic soils.

### *Mineral Soil Classification*

Mineral soil is the inorganic layer of earth composed of sand, silt and clay, in varying amounts, with less than 20% organic matter in the surface layer. It is the most predominant soil type found throughout Ontario.

Mineral farmland is classified according to the following variables: topography, soil texture, stoniness, drainage, flooding, erosion and depth to bedrock.

There are six classes of mineral farmland.

<b>Mineral Soil Class</b>	<b>Description</b>	<b>Points</b>
1	This land has good drainage; good loam texture; and is nearly level. No physical limitations to a high level of farm production exist.	95–85
2	This land is subject to moderate limitations in use for farm crop production. These limitations may be drainage, rolling topography, moderate erosion, moderate stoniness, or a combination of two or more factors.	80–70
3	Similar limitations to those of Class 2 above only to a greater extent. This land has moderately severe limitations that restrict the range of crops or may require some development or management practices.	65–55
4	This land is subject to severe limitations for use in farm crop production such as: too susceptible to erosion, too stony, or too poorly drained to be cultivated frequently. .	50–40
5	This land is generally unsuited to cultivation, but can be used for grazing. It is subject to similar but more severe limitations than those of Class 4.	35–25
6	This land should be kept in vegetation because of steepness of slope, severe erosion, shallow soil, or other features that make cultivation impractical. This land is capable of producing only indigenous crops and is suitable for moderate grazing.	0–20



### *Organic Soil Classification*

Organic soil is developed from plant residues that have been preserved by the presence of a high water table (commonly called *peat* or *muck*). As with mineral soils, organic soils are classified using a similar pointing system. These points are allocated in an increment of 5, which are deducted from 100. The upper limit for soil classification points is 95; the lower limit is 5.

There are five factors that are used in the classification of organic soils:

- decomposition
- reaction
- woody layers
- depth
- substratum texture

### *Decomposition*

There are 3 stages of decomposition:

<b>Characteristic</b>	<b>Description</b>	<b>Points</b>
Humic	The most highly decomposed of the soil types. It has a rubbed fibre content of less than 10% of the organic volume.	0
Mesic	In the intermediate stage of decomposition. It has rubbed fibre content between 10% and 40% of the organic volume.	20
Fibric	The least decomposed of all organic soil materials. There are large amounts of well-preserved fibre that are readily identifiable as to botanical origin. A rubbed fibre content of more than 40% of the organic volume exists.	35

### *Reaction*

Reaction refers to the acidity or alkalinity of the soil, as expressed by a PH factor. The PH factor for Southern Ontario is generally between 5.0 and 7.0.

Characteristic	Points
PH between 5.0 and 7.0	0
PH under 5.0	20
PH over 7.0	20

### *Woody Layers*

Wood located within 20 inches of the surface will probably interfere with cultivation of the land. Wood content is expressed as a percentage of the organic volume.

Characteristic	Points
None	0
1% to 25% of organic volume	5
26% to 50% of organic volume	10
More than 50% of organic volume	20

### *Depth*

Depth refers to the depth of organic material over sand, silt, loam, clay, marl or bedrock. Limitations occur when any of these materials occur within six feet of the surface.

Characteristic	Description	Points
Deep	More than 72"	0
Moderately Deep	52" to 72"	20
Shallow	36" to 52"	35
Very Shallow	Less than 36"	50

### Substratum Texture

Substratum texture refers to the granular texture of the subsoil. It may be composed of sand, silt, loam, clay, marl or bedrock. Points are deducted if the granulation is medium or coarse.

Characteristic	Points
Fine	0
Medium or Coarse	20

### Organic Farmland

There are six classes of organic farmland:

Organic Soil Class	Description	Points
1	This land has no water, topographical or PH limitations and is deep and level. These soils are at an intermediate stage of decomposition.	95–85
2	This land has one limitation that restricts its use in a minor way. The limitation may be woodiness, extreme acidity or alkalinity expressed by a PH factor, flooding, topography, depth or climate.	80–70
3	This land has moderate to severe limitations that restrict the variety of crops or require special development and management practices, such as crop rotation and fertilization.	65–55
4	This land has severe limitations that restrict the variety of crops or require special development and management practices, such as crop rotation and fertilization.	50–40
5	This land has such severe limitations that it is restricted to the production of perennial forage or other specially adapted crops.	35–25
6	This land is capable of only producing indigenous crops. Improvement practices are not feasible.	0–20

Within each farm neighbourhood, adjustments are determined for each soil classification. Soil classifications quantify the factors that contribute to the agricultural capability of the soil.

In order to determine the current value of a farm property, only open market, arm's length sales of farmland to farmers are used. Farms sold for non-agricultural potential use (i.e., development) are not considered for this purpose.

All farmland sales are analysed from across the province using Computer Assisted Mass Appraisal (CAMA) techniques.

By definition, CAMA is the valuation of a group of properties as of a common date using standardized methods, common data and statistical testing. The results of the mass appraisal analysis are often in the form of valuation equations and parameters (mass appraisal models) applied to individual property data in order to establish an estimate of current farmland value for all farmland across Ontario.

MPAC uses a statistical tool known as multiple regression analysis (MRA) to apply the direct comparison approach to value. Mass appraisal is used to develop the valuation parameters, which explain the value influences in order to estimate the current value of farmland from real estate data compiled by MPAC.

The mass appraisal model will typically allocate value based on a property's agricultural capability, size, and location (i.e., farmland neighbourhood).

The value of land for non-agricultural purposes is determined using an analysis associated with the non-agricultural use. For example, a residential land portion will be derived from an analysis of residential sales.

The value of all land is then added to the depreciated replacement cost of the buildings or other improvements to arrive at the current value of the property. See example below.

### **3.12 Example of Valuation of Farm Property**

The following provides a simplified outline of what the valuation may look like for a farm property located in Southwestern Ontario:

- 100-acre farm property with a mix of Class 1, 3 and 6 farmland
- farm residence
- two farm outbuildings

Estimated replacement cost new of residence	\$250,000	
Estimated depreciation of residence	<u>-\$85,000</u>	
Depreciated value of residence		\$165,000
Estimated replacement cost new of farm outbuildings	\$300,000	
Estimated depreciation and obsolescence of farm outbuildings	<u>-\$120,000</u>	
Depreciated value of farm outbuildings		\$180,000
100 acres of farmland		
50 acres of class 1 land at \$15,575 per acre	\$778,750	
30 acres of class 3 land at \$10,875 per acre	\$326,250	
20 acres of class 6 land at \$2,475 per acre	\$49,500	
Estimated land value		\$1,154,500
Total farm property value		<u>\$1,499,500</u>

### 3.13 Checking the Outcome

Having completed the valuation using the cost approach, MPAC's assessor will review the outcome to ensure that it is an accurate assessment of the current value of the property and is in line with the assessment of other similar farm properties.

### 3.14 Conclusion

This guide sets out how MPAC assessors approach the valuation of farms for property assessment purposes.

Although it outlines the general approach adopted, it does not replace the assessor's judgment and there may be some cases where the assessor adopts a different approach for justifiable reasons.

For further information about MPAC's role, please visit [mpac.ca](http://mpac.ca).