



MUNICIPAL
PROPERTY
ASSESSMENT
CORPORATION



METHODOLOGY GUIDE

VALUING PITS AND QUARRIES 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 pits and quarries 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. Login information for aboutmyproperty.ca is provided on each Property Assessment Notice mailed this year. Additional information about MPAC can be accessed at mpac.ca.

A handwritten signature in black ink, appearing to read "Antoni Wisniowski".

Antoni Wisniowski

President and Chief Administrative Officer

A handwritten signature in black ink, appearing to read "Rose McLean".

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

This Methodology Guide applies to pits and quarries in Ontario. A pit or quarry is where aggregate (i.e., sand, stone and gravel) is extracted. The following MPAC property codes are used to categorize the various types of pits and quarries in Ontario:

- 228 Farm with gravel pit
- 593 Gravel pit, quarry, sand pit

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.¹

The Act contains important definitions and states what property is taxable and how it should be valued. Section 19(1) requires that the land be assessed at current value, which is 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.” Land as defined in the Act includes “all mines, minerals, gas, oil, salt quarries and fossils in and under land.”

Section 3(1)20 of the Act provides an exemption from taxation for mineral land and minerals including “the buildings, plant and machinery in or on the land only to the extent and in the proportion that the buildings, plant and machinery are used for obtaining minerals from the ground, and all minerals that are in, on or under land.”

In 2008, the Assessment Act was amended to exempt **all** minerals from taxation. As a result, paragraph 20 of Section 3(1) of the Assessment Act provides an exemption from taxation for “the buildings, plant and machinery under mineral land and the machinery in or on the land only to the extent and in the proportion that the buildings, plant and machinery are used for obtaining minerals from the ground, and all minerals that are in, on or under land.”

Prior to 2008, the Act provided exemption for “all minerals, other than diatomaceous earth, limestone, marble, peat, clay, building stone, stone for ornamental or decorative purposes, or non-auriferous sand or gravel that are in or under land.”

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.

1.3 Classification

MPAC’s role is to accurately assess and classify all properties in Ontario in accordance with the Assessment Act and regulations established by the Government of Ontario.

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

The classification of pits and quarries are covered in various sections of Ontario Regulation 282/98² as follows:

Section 3(1)3 includes in the Residential Property Class “the portion of land that is licensed or required to be licensed under Part II of the Aggregate Resources Act that is not in the farm property class or the industrial property class.”

Section 6(2)2 includes in the Industrial Property Class “for the 1998 and 1999 taxation years, land used for mining, quarrying, producing oil or gas or extracting anything from the earth.”

Sections 6(2)2.1 and 6(2)2.2 also includes in the Industrial Property Class with some exceptions “land used for mining, quarrying, producing oil or gas or extracting anything from the earth.”

As stated above, the exemption from taxation for minerals, which includes sand, stone and gravel, is contained in Section 3(1)20 of the Assessment Act.

Classification is based on use, so if a portion of the property is used for other purposes, it may be necessary to value those components separately and sum the component values to achieve the correct total current value. It may also be necessary to apportion the total value of the property between the various uses to ensure that the appropriate tax rate is applied to the relevant parts of the property.

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.

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

- 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

2.0 The Valuation Process

The valuation process always begins with a determination of the highest and best use of the subject property.

Any reliance upon this guide is made only after the assessor has determined that the highest and best use of the subject property is that of a pit or quarry.

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 pits or quarries. This approach separately values improvements and land to produce a current value for the property.

2.2 Approach

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

- data collection
- analysis of the data collected
- valuation

2.3 Data Collection

The data required for gravel pit and quarry valuations come from a number of sources:

- MPAC conducts periodic inspections of pits and quarries.
- MPAC sends land use questionnaires to owners of pits and quarries.
- MPAC also collects information about sales and transfers of gravel pits and quarries.
- There are a number of guides and other published information about pits and quarries.

MPAC generally collects the following types of data for pits and quarries:

- general data
- financial data
- property description
- sales data for marginal farmlands

Land

The pit or quarry site may be categorized according to the following uses:

- extraction
- future extraction
- depleted
- farm

Site Improvements

Site improvements may include:

- exterior access roads
- interior access roads
- berms
- fencing
- tunnels

Building Improvements

Building improvements may include:

- screening plants
- hoppers
- conveyors
- wash plants
- tanks
- weigh scales
- electrical rooms
- office
- garage
- transformer station

The land will be measured in terms of its size in acres. Buildings will normally be measured in square feet.

MPAC will record details not only of the size and capacity of the buildings and structures, but also their age, condition and use.

MPAC will either prepare a plan of the site and buildings or obtain one from the site operator. The site plan will identify all the different buildings, structures and other improvements by a reference number for ease of identification.

These reference numbers will be used in the valuation of the pit or quarry to ensure that all parts of the property are properly included in the current value assessment.

Confidentiality

As outlined above, it is important to be aware that, in order to enable MPAC to produce an accurate valuation of the property concerned, information needs to be obtained from a variety of sources.

This will include information from MPAC's records, from the owner or operator of the property, from the municipality in which the property is located, from the assessor's visit to the property, and from other sources.

All stakeholders in the property tax system have an interest in ensuring that the current value provided by MPAC is correct; in order to achieve this, it is necessary for all parties to cooperate in the provision of information.

It is appreciated that some of the information outlined above may be of a commercially sensitive nature. MPAC recognizes the need to ensure that any information provided to it is properly safeguarded and only used for the purpose for which it is supplied. Assessors must appreciate the nature of this undertaking and ensure data is treated accordingly.

If, after an appeal has been filed, MPAC receives a request for the release of actual income and expense information, or other sensitive commercial proprietary information, the usual practice is to require the person seeking the information to bring a motion before the Assessment Review Board (ARB), with notice to the third parties, requesting that the ARB order production of the requested information. The release of such information is at the discretion of the ARB.

The Assessment Act outlines in Section 53(2) that disclosed information may be released in limited circumstances "(a) to the assessment corporation or any authorized employee of the corporation; or (b) by any person being examined as a witness in an assessment appeal or in a proceeding in court involving an assessment matter."

2.4 Data Analysis

Having carried out the data collection outlined previously, the assessor needs to analyze it and reach a conclusion regarding how it should be applied using the cost approach to value.

The cost approach for pits or quarries has the following main steps:

1. Determine the land value for the pit or quarry complex.
2. Determine reproduction cost new (RCN) of the pit or quarry buildings and structures.
3. Determine physical depreciation of the pit or quarry buildings and structures.
4. Determine functional obsolescence for the pit or quarry buildings and structures.
5. Determine external obsolescence for the pit or quarry buildings and structures.
6. Determine net improvement value for the pit or quarry buildings and structures.

7. Determine RCN of the pit or quarry site improvements (yard work).
8. Determine physical depreciation of the pit or quarry site improvements.
9. Determine functional obsolescence for the pit or quarry site improvements.
10. Determine external obsolescence for the pit or quarry site improvements.
11. Determine net improvement value for the pit or quarry site improvements.
12. Add values for other purposes (e.g., excess land).
13. Determine current value assessment.

2.5 Valuation

Having undertaken the necessary steps outlined above, the assessor should now be in a position to apply the appropriate valuation model.

2.6 Validating the Results

Once the assessor has completed the valuation, 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, there has been no double-counting of any adjustments made for depreciation, the resulting valuation has been compared with any market evidence that may be available in relation to similar properties and the final valuation is in line with the valuation of other similar properties in Ontario.

3.0 The Valuation

3.1 Cost Approach Overview

The theory behind the cost approach to value follows the principle of substitution: the value of a property is equal to the amount it would cost to replace it with a substitute of equal utility.

There are two main tasks in estimating current value using the cost approach: valuing the land and valuing the improvements.

The sum of land value plus depreciated improvement value is the estimated current value of the real estate at the subject location.

3.2 Land Valuation

The determination of land values for pits and quarries can be broken into two steps:

- Determine the value of the raw land.
- Determine the costs associated with obtaining the necessary zoning and licencing needed to permit extraction.

Raw Land Value

The first step involves the determination of what the raw land is worth. A pit or quarry is often a large tract of land comparable to marginal farmland. As a result, the potential purchasers of the subject properties often compete with farmers to acquire the large parcels of land.

The sand, stone or gravel is exempt from taxation. When arriving at the value of the raw land, the assessor must be careful to exclude the contributory value of the aggregate. It is recommended that assessors disregard sales of pits and quarries when they are estimating the worth of the raw land, as the value of the sand, stone or gravel could be reflected in the sale price.

As a basis for the value of the raw land, the assessor makes reference to the sales of marginal farmland in the vicinity of the pit or quarry. Farmland is classified by MPAC on a scale of one to six, with Class 1 being the most productive and Class 6 being the least productive. The marginal farmland most comparable to the raw land used for pits and quarries is generally Class 5.

MPAC's reliance on the sales of Class 5 farmland will ensure that the value of the sand, stone or gravel is not included in the estimates of current value for the pits and quarries.

For more information about the determination of farmland values, reference should be made to the Methodology Guide *Assessing Farms in Ontario*.

Zoning and Licencing Costs

The second step involves the determination of what costs are associated with converting raw land into land where extraction of aggregates is permitted.

The following list contains many of the steps required before any extraction may occur:

- official plan amendment
- zoning bylaw amendment
- licence application to the Ministry of Natural Resources
- consulting fees
- hydrogeology study
- environment impact study
- archaeological assessment
- noise and vibration study
- traffic impact study

The costs will vary depending on the locations of the pits and quarries. In order to determine the costs of each requirement, the assessor should consult with both the owners of the subject properties and the municipalities where the subject properties are located.

The current value of the land is equal to the value of the raw land plus the cost of obtaining permission to extract aggregate.

3.3 Building and Site Improvements

Improvement value is established in four steps:

- Collect the physical and descriptive data about the pit or quarry. Inspect the buildings, structures and other improvements, quantify areas, note conditions and analyze their utility.

- Quantify the building areas from plans and layouts, or, if necessary, during the property inspection.
- Using MPAC's automated cost system (ACS), estimate the reproduction cost new of the assessable improvements as of the valuation date.
- Deduct from the reproduction cost new value an amount reflecting all forms of depreciation, which may include:
 - physical deterioration (age-life depreciation)
 - functional obsolescence (curable and incurable)
 - external obsolescence (economic and locational obsolescence)

The resulting value will be an estimate of the contribution of the improvements to the current value of the subject,

Note that the assessor gathers information about both the nature of the improvements and the way in which they are used. The assessor talks to the operator of the pit or quarry to ensure he or she understands how the improvements are used and their efficiency.

3.4 Establishing Cost New

Three approaches can be used to establish cost new:

- historical construction cost – actual costs indexed to the valuation date, which may be useful for relatively new buildings or structures (up to 5–10 years)
- reproduction cost techniques – applied in the valuation of most buildings or structures and obtained from cost manuals, such as the Automated Cost System (ACS) developed for MPAC
- replacement cost techniques – may be applied when estimating the cost of a modern facility that is different than the existing pit or quarry and may be used in connection with quantifying any functional obsolescence

The assessor will select the most relevant option for the subject property depending on its functional utility. MPAC will use reproduction cost new (RCN) as the starting point for the valuation.

3.5 Deducting Depreciation and/or Obsolescence

Depreciation may include physical deterioration due to age, condition and/or use of the property. Depreciation may also include obsolescence.

Obsolescence reflects the abnormal depreciation that arises in some properties due to functional and/or externally generated economic problems.

Functional obsolescence can be the result of numerous factors, including poor or outdated designs, inadequate areas, excess operating costs, etc.

Obsolescence is not related to the age of the buildings and site improvements but to their ability to adequately perform the intended functions.

The assessor asks the following question when determining a property's obsolescence: "Could the existing facility be replaced with a more modern, efficient substitute, and if so, what would constitute this modern facility?"

The assessor must have knowledge of current trends and building and structure designs for pits or quarries to recognize obsolescence. Functional obsolescence can usually be recognized through poor design and layout, poor or inferior construction, unused areas, and the existence of excess operating costs.

External obsolescence results from a change of circumstances outside the control of the pit or quarry operator.

This could be a large-scale factor such as economic recession or a change in the price/value of the aggregate, or a more localized factor such as a change in the local transportation infrastructure, which makes the location of the pit or quarry less attractive and less valuable.

A variety of methods can be used to quantify depreciation. A description of these methods is outside of the scope of this Methodology Guide. However, while it is important to quantify all aspects of depreciation, it is equally important not to double count for the same aspect of depreciation.

After the amount and degree of depreciation have been determined and quantified, if any, the end result should reflect the reproduction cost new of the building and site improvements less any depreciation (RCNLD) found in the present improvements.

3.6 Current Value Conclusion

Adding the value of the land plus the value of the depreciated building and site improvements produces the current value of the property based on the cost approach.

The final step in the process is to consolidate a current value assessment for the property. Once the determination of value has been completed following the cost approach, the assessor will consider whether there is any other value in the real estate that has not been captured by the analysis.

3.8 Quality Control

Having arrived at the value of the pit or quarry through the above process, MPAC assessors will check the outcome of the valuation to ensure no errors have been made and that the value is in line with the valuation of other similar pits or quarries in Ontario.

3.9 Conclusion

This guide sets out how MPAC assessors approach the valuation of pits and quarries 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.