

**METHODOLOGY GUIDE**  
**VALUING LANDFILLING SITES IN ONTARIO**

**Valuation Date: January 1, 2016**

AUGUST 2016



**MUNICIPAL PROPERTY ASSESSMENT CORPORATION**

August 31, 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 landfill 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).

Sincerely,

A handwritten signature in black ink, appearing to read "Rose McLean", is enclosed within a thin black rectangular border.

Rose McLean, M.I.M.A.  
President and Chief Administrative Officer

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## 1.0 Introduction

The Municipal Property Assessment Corporation (MPAC) 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.

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 properties containing a landfill site approved under the *Environmental Protection Act* for landfilling activities.

For the 2016 Assessment Update, O. Reg. 282/98 has been amended to provide rules affecting the valuation and classification of landfilling sites, excluding hazardous waste landfilling sites and landfilling sites only approved for the receipt of waste generated by the primary business operation of the landfill operator (i.e., ancillary landfilling sites).

Despite landfilling sites that are ancillary to another use, the following MPAC property code is used to categorize most landfill properties in Ontario:

- 592 – Dump/transfer station/incineration plant/landfill

It should be noted that this property code also includes transfer stations and incineration plants, which are subject to the valuation approach prescribed in the regulations and are outside the scope of this Methodology Guide. These should be valued according to practices for these property types and according to the specific circumstances of a particular property.

## 1.2 Legislation

The Assessment Act governs the assessment of properties in Ontario for property tax purposes.<sup>1</sup>

The Act contains important definitions and states that all property in Ontario is liable to assessment and taxation, subject to some exemptions. 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.”

Section 19(2.1) of the Act provides the Minister of Finance with the authority to, by regulation, prescribe a method of determining the current value of land. For the 2016 Assessment Update, the valuation of landfilling sites has been prescribed by regulation. Sections 43.2 and 43.3 were added to Ontario Regulation 282/98 to define the valuation treatment applicable to open and closed landfilling sites as follows:

### ***Open Landfilling Sites***

Section 43.2 provides the valuation rules applicable to the portion of an open landfilling site that is used exclusively for landfilling activities. Landfilling activities are defined to include any activities related to the operation of a landfilling site excluding the thermal treatment, transfer, sorting, shredding, recycling or composting of waste.

The current value of open landfilling sites is to be determined in accordance with the following:

- The value of the land is to be determined as if it were vacant industrial land;
- The value of the buildings and structures used exclusively for landfilling activities are to be determined using the replacement cost new approach to valuation, less depreciation; and,
- The value of cell liners, structures, machinery, equipment or fixtures associated with leachate and gas collection systems and structures, machinery, equipment or fixtures used to pre-treat or process hazardous waste are to be excluded from the determination of current value.

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

### ***Closed Landfilling Sites***

A landfilling site is considered closed once either of the following situations apply:

- Final cover material has been applied to the site in accordance with the closure requirements of its ECA; or,
- The capacity of the landfilling site has been reached as defined by its ECA.

Section 43.3 does not prescribe a particular methodology to be used in determining the current value of a closed landfilling site; however, the same items excluded from the valuation of open landfilling sites are excluded from the valuation of closed valuation sites: Cell liners, leachate and gas collection systems and items used to pre-treat or process hazardous waste.

For the 2016 Assessment Update, MPAC will continue to value the closed wastefill area and buffer area of a closed landfilling site at 10% of industrial land values until the monitoring period ends and/or the land has been sufficiently remediated to be put to another use.

### **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 O. Reg. 282/98 of the Assessment Act sets out how various property uses are classified.

Section 14.3 of O. Reg. 282/98 defines a new landfill property class for 2017 and subsequent taxation years.

The landfill property class applies to the portion of an open landfilling site that is approved for the deposit of waste pursuant to a current environmental compliance approval (ECA). This includes the area for active cells, closed cells and approved future cells but excludes buffer areas. Additionally, the landfill property class does not apply to any portion of the following categories of landfilling sites:

- **Closed landfilling sites:** A site that is no longer able to receive waste under an ECA. This can occur either because final cover material has been applied to the site in accordance with closure requirements or the site has no remaining capacity.
- **Ancillary landfilling sites:** A site that is approved under its ECA for the deposit of waste primarily generated in the course of the owner/operator's business operations.

- **Hazardous waste landfilling sites:** A site that is approved to receive and deposit hazardous waste under its ECA.

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 classification 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.
- 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

While the valuation process typically begins with a determination of the highest and best use of the subject property, landfilling sites are regulated as per sections 43.2 and 43.3 of Ontario Regulation 282/98.

Therefore, in the case of landfilling sites, the approval and use of the site for landfilling activities requires the application of the cost approach according to the regulated valuation and classification treatment, notwithstanding alternative uses to which the site could be put.

### 2.1 Outline

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.

For the 2016 Assessment Update, MPAC is required to apply the cost approach to value landfilling sites. The regulated approach is described in section 1.2 of this Guide.

This approach determines the assessed value by means of estimating the replacement cost of the buildings and structures, adjusting that cost for any depreciation in the actual property being valued (which includes physical deterioration and obsolescence), then adding the value of the land.

The theory underlying the cost approach is to determine *value in exchange* by applying the *principle of substitution*, which means that no rational buyer will pay more for the property than that amount for which the buyer can obtain a property of equal desirability and utility, assuming no undue delay.

This current value framework includes the existing property owner as a potential purchaser. However, the value to the current owner can be no greater than the cost of a substitute property of equal utility.

When carefully applied by assessors, the cost approach is an appropriate method of determining current value.

This valuation method is widely recognized by experts in the appraisal profession.

## The Main Steps of the Cost Approach

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

1. Determine the functionality and utility of the property (i.e., what the property can do and how well it does it).
2. Establish the cost to construct the improvements that can complete these functions.
3. Deduct all forms of depreciation (i.e., the difference between the cost as new and the amount the improvements would sell for as of the valuation date).
4. Add the current market value of the land to the depreciated value of the improvements.

## 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 landfilling site valuations come from a number of sources:

- MPAC conducts periodic inspections of landfilling sites.
- MPAC issues questionnaires to operators of landfilling sites.
- Ministry of Environment and Climate Change data respecting landfilling sites.
- MPAC also collects information about sales and transfers of landfilling sites.

MPAC generally collects the following types of data for landfilling sites:

- general data
- property description
- sales data

- construction data
- gross floor area
- Environmental Compliance Approval (ECA) details: landfill location, status, landfilling and total site area, total and remaining capacity, type of waste permitted, operator details, etc.

### **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 them 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, with notice to the third parties, requesting that the Assessment Review Board order production of the requested information. The release of such information is at the discretion of the Assessment Review Board.

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 will adopt the cost approach and use the data collected to ensure that the cost approach is properly applied in accordance with the regulations.

## **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 Functionality and Utility

The value of an industrial property relates to its functionality. The better a property fulfils its required functions, the more valuable it is to the owner or prospective purchaser.

This principle requires that the utility of the property be established – a process that includes analysis of the highest and best use, as well as a determination of how well the property fulfils its desired functions, or current utility.

The regulation of landfill assessment methodology for the 2016 Assessment Update simplifies this analysis, as MPAC is required to apply the cost approach to determine the value of landfilling sites, and the land is to be valued as if it were vacant industrial land.

### 3.2 Automated Cost System

MPAC has developed a system called the Automated Cost System (ACS) for use when a property is being valued by the cost approach. ACS ensures that a consistent approach is used by MPAC when valuing landfill or other properties valued according to the cost approach. The cost of labour, equipment and materials for each structural element of an improvement are all included in this data.

### 3.3 Replacement or Reproduction Cost

It is important to establish whether a potential buyer would consider an exact replica of the asset being valued. This determines whether the replacement cost would be the same or less than the reproduction cost.

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

Reproduction cost is the current cost of producing a replica of the asset being valued using similar materials.

When deriving a cost new, the options are:

- replication of the existing improvements (including the layout, quantity and materials found at the subject property)
- replication of the existing improvements with more modern substitutes (i.e., no changes to the layout or quantity)

- replication or substitution of the existing improvements with a modern design, quantity and layout

For the majority of the subject properties, the steps taken to derive the reproduction cost new will also produce the replacement cost new. This is based upon the probability that most of the buildings found at the subject properties would be replaced in a manner that is very similar to the existing buildings.

In accordance with the regulations, some items at landfilling sites are excluded from the valuation. Please see section 1.2 of this Guide for more detail on these exclusions.

### **3.4 Estimated Cost New**

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

MPAC uses ACS to determine the replacement cost of the industrial buildings and structures.

Having determined the replacement cost new of the property by applying ACS 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.

### **3.5 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 any adjustments require knowledge, analysis and judgment to be accurate.

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 (where it is cost effective to fix)
- incurable (where it 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. It is important to identify all forms of depreciation present in order to help with the quantification process.

### **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 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 general landfill 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.

## 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 (e.g., design or layout) make it less efficient to operate than more modern industrial properties.

## 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.

Landfill properties may be affected by economic or other external factors relating to the particular industry.

## Quantifying Depreciation

The cost approach broadly takes physical deterioration into account; however, additional adjustments may need to be made in the valuation to reflect the property's defects, outstanding repairs and deferred maintenance.

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 uses a method called *allocation of market-extracted depreciation* to determine the adjustment that may be necessary for external obsolescence. MPAC assessors analyze all sales of similar landfill properties and determine the following at the time of sale: land value, cost new, physical deterioration and functional obsolescence. The outcome of this analysis is compared to the sale price to identify any external obsolescence. Using this method, MPAC assessors are able to use market evidence to adjust for any external obsolescence in preparing their assessed values.



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.

**3.6 Valuing the Land**

As described in section 1.2 of this Guide, MPAC is required to value the land as though it were vacant industrial land.

Accordingly, the land is valued as if it were vacant. Its current value is established through an analysis of market sales data. MPAC collects information about the sale of land principally zoned for industrial use and analyses this data so it can be used to value all comparable land being used for industrial purposes. A landfilling site may have other uses on the same property. The value of the land used for other purposes may be determined in accordance with other Methodology Guides. The value of the land is added to the depreciated replacement cost of the buildings or other improvements to arrive at the current value of the property.

The following example provides a simplified outline of what the valuation may look like:

Reproduction cost new	\$1,400,000
Excess capital costs (cost of overbuilt areas)	-\$0
Replacement cost new	\$1,400,000
Cost-to-cure deferred maintenance	-\$0
Subtotal	\$1,400,000
Physical depreciation	-\$420,000
Replacement cost new less depreciation (RCNLD)	\$980,000
Additional functional obsolescence	-\$0
Subtotal	\$980,000
External obsolescence	-\$0
Depreciated value of improvements	\$980,000
Land value	\$486,000
Current value estimate	\$1,466,000

### **3.7 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 regulated valuation approach for landfilling sites and the assessment of similar properties.

### **3.8 Partitioning**

A new landfill property class was created for 2017 and subsequent taxation years, the definition of which is described in section 1.3 of this Guide.

In general, the wastefill area of an open landfilling site will be included in the landfill property class and the buffer area will be included in the commercial property class. Other portions of the property, if any, will be classified on the basis of their use.

### **3.9 Conclusion**

This guide sets out how MPAC assessors approach the valuation of landfilling sites 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).