



MUNICIPAL  
PROPERTY  
ASSESSMENT  
CORPORATION



# **METHODOLOGY GUIDE**

## **VALUING AIRPORTS IN ONTARIO**

**Valuation Date: January 1, 2016**

**AUGUST 2016**



**MUNICIPAL PROPERTY ASSESSMENT CORPORATION**

September 28, 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 airport 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.

Rose McLean, M.I.M.A.

Chief Operating Officer

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## 1.0 Introduction

The Municipal Property Assessment Corporation (MPAC) – [mpac.ca](http://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 the 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 airports and aerodromes in Ontario. An *aerodrome* is “any area of land, water (including frozen surface thereof) or other supporting surface used or designed, prepared, equipped or set apart for use either in whole or in part for arrival and departure, movement or servicing of aircraft and includes any building, installations and equipment in connection therewith.” An *airport* is “an aerodrome for which, under Part III of the Air Regulations, an airport certificate has been issued by the Minister.”<sup>1</sup>

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<sup>1</sup> *Aerodromes Standards and Recommended Practices (TP 312)*, 5th edition (revised July 2015), 1.1:  
<https://www.tc.gc.ca/eng/civilaviation/publications/tp312-chapter1-1-1-4793.html>

Airports vary from small, local airports to major international airports, with a variety of different-sized regional airports in between the two extremes. This guide shapes how MPAC uses the income approach and the cost approach in order to determine current value for assessment purposes.

This guide outlines the valuation process to be followed by an assessor, which contains 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.

There are many levels of infrastructure development at airports and aerodromes in Ontario. This guide explains the valuation approaches for all of the airports and aerodromes in Ontario as described by Transport Canada's National Airport Policy.<sup>2</sup> Properties with a primary use other than an airport or an aerodrome will have a market value estimate based on one of the three standard appraisal approaches that best suits the property type. These types of airports or aerodromes generally have grass airstrips and are located on recreational- or farm-type properties.

The airports and aerodromes within Transport Canada's National Airport System and described in the Assessment Act as "designated airport authorities" are covered by this guide when referring to the income approach to value. Billy Bishop Toronto City Airport is also valued using the income approach to value. While the value estimates of these airports are based on the income approach, some of the lessees may have a tenant tax liability value apportioned out using the cost approach, as described herein.

The federal government and Transport Canada regulate the operation of airports and aerodromes in Ontario. Transport Canada has a National Airports Policy that describes aerodromes in Ontario. There are primarily three types of airports in Ontario, as described by Transport Canada. The categories are:

- national airport system – annual traffic of 200,000 passengers or more
- regional/local airports – usually scheduled passenger traffic
- small airports – general aviation and recreational flying

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

- **737** Federal airport
- **738** Provincial airport

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<sup>2</sup> National Airport Policy, 1994: <https://www.tc.gc.ca/eng/programs/airports-policy-menu-71.htm>

- **739** Local government airport
- **740** Airport leasehold
- **741** Airport authority

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>3</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.”

Airport authorities are exempt from property taxes pursuant to section 3(1)24 of the Act which provides an exemption for “land that is owned or leased by an authority that operates an airport” (subject to certain conditions identified in the legislation). Section 3(1)24.iv indicates that “the exemption does not apply to any portion of the land leased by a tenant, other than a designated airport authority, to whom section 18 applies.” This exemption applies for the 2013 and subsequent taxation years. Note: despite being exempt from taxation, airport authorities are required to make a payment in lieu of taxes (PILT) to the municipality in which they are located.

Section 18 (1)a of the Act provides that “the tenant of land owned by the Crown shall be assessed in respect of the land as though the tenant were the owner if rent or any valuable consideration is paid in respect of the land.” This section applies to several airport authorities, including the five largest airports, which are owned by the Federal Government.

The Minister of Finance filed O. Reg. 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>3</sup> Assessment Act, R.S.O 1990, c A.31: <https://www.ontario.ca/laws/statute/90a31>.

### 1.3 Classification

Multiple classifications are used for airports and aerodromes. These classifications are determined by legislation and the use of the space that is occupied by the airport operator or tenant of the airport. The tenants of an airport are taxable in the commercial property class unless determined otherwise pursuant to Section 18 of the Act.

In Ontario, there are four designated airport authorities: Toronto Lester B. Pearson International Airport, London International Airport, Ottawa McDonald-Cartier International Airport and Thunder Bay International Airport. These four airport authorities make a payment in lieu of taxes (PILT) to the municipalities in which the airports are residents, as regulated under Section 45.1 of Ontario Regulation 282/98 of the Assessment Act. The regulation specifies that PILT payments are set out on a per passenger basis based on location. If the authority does not make the required PILT payments, they must pay the equivalent of municipal and school taxes that would have been payable if the property were taxable.

The Toronto Port Authority also makes a PILT payment based on the land it owns at the Billy Bishop Toronto City Airport. The Toronto Port Authority is listed in Schedule III Section 2 of the PILT Act. Schedule III identifies corporations who manage, charge and direct property by virtue of a lease with Her Majesty in right of Canada whose property is considered to be “Federal Property” for purposes of the PILT Act. The leased areas of the Billy Bishop Toronto City Airport are taxable under the same legislation as the airport authorities, pursuant to Section 18(1)(a) of the Assessment Act.

The commercial tax class is used for tenants that occupy space in the terminal buildings and also for commercial tenanted buildings on the field. However, if there is a part or parts of the property which is/are used for other purposes, it may be necessary to apportion the value of the property between the various uses.

In January of 2001, the Ontario Regulations were amended with a new definition under the residential class to include buildings used for private aircraft storage. Section 3(1)2.x of O. Reg. 282/98 includes in the residential property class buildings that are used exclusively for the storage of recreational private aircraft. This classification ensures that the appropriate property tax rate is applied to the relevant parts of the property.

If a portion of the property is used for other purposes, the total value of the property will be apportioned 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.
- 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

Residential property owners can access detailed information about their assessment through [aboutmyproperty.ca](http://aboutmyproperty.ca). Login information is provided on every 2016 Property Assessment Notice mailed.

## 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 an airport.

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 the 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.

In this guide there are two valuation processes that are referenced when valuing airports and aerodromes in Ontario.

The first valuation process in broad terms is the income approach, which estimates the annual revenue that can be generated by an airport, deducts the annual expenditure reasonably incurred, a Capex allowance for capital expenditures and then applies a capitalization rate to the net income to arrive at a current value for the property.

For the airport authorities and Billy Bishop Toronto City Airport, MPAC uses a proforma-based income valuation that uses the income approach predominantly and the cost approach for the infield structures. All of the airport authorities are non-profit enterprises, and the Billy Bishop Toronto City Airport is run by the Toronto Port Authority, which is also a non-profit enterprise.

The second valuation process is the cost approach, and it is based on developing reproduction or replacement costs for the materials used in construction of the existing improvements. Those costs are then adjusted to reflect any depreciation in the property being valued. Last, the value of the land is added to derive market value.

### **Highest and Best Use**

Airports consist of large tracts of land, often in close proximity to existing development. MPAC assessors must consider the highest and best use and development potential of the property. A property with a higher value under an alternate permitted use should not be valued as an airport.

The highest and best use of the property must be determined as vacant and improved. The four highest and best use tests will determine whether the alternative, higher value use of the property is physically permissible, financially feasible, legally permissible and maximally productive.

This guide assumes that the highest and best use of the property is the existing use, which is that of an airport.

## **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**

Different data is required for the two approaches used to value airports and aerodromes. There is specific data that is required for each approach, but there are also similar data elements that need to be collected from the airports regardless of approach to value.

Detailed financial information specific to the overall airport and to each individual terminal tenant is needed for the income approach.

Property specific information is required to value airports using the cost approach. The physical characteristics of the property, along with site information, are the basis for the cost approach.

The data requirements for airports to be valued using the two approaches (income and cost) are outlined below.

### **General Airport Data**

- airport statistics on annual number of passengers, aircraft movements and air cargo tonnage
- building and site improvement plans, site plans, the master airport plan, noise planning zones and aviation easements for the subject property

### **Airport Financial Data**

- tenant income and expense statements from the airport for the preceding five years
- annual reports showing airport revenues and expenses and other income valuation parameters
- income and expense statements from any operating tenants

### **Airport Rental Data**

- rents for concessions, retail, office and infield tenants, as well as ground lease information

### **Airport Improvement Data**

- details of all airport improvements, measured, quantified and cross-referenced to site and building plans as appropriate
- details of the function of all airport improvements, along with notes relating to any issues concerning their use

### **Airport Land Valuation Data**

- land values developed for airport land uses based on sales and/or recent land leases

## **Airport Exemption Data**

- exemptions to taxation as per the Municipal Grants Act.
- exemptions for the airport authorities based on legislation

## **Airport Sales Data**

Although sales of airports do not take place very often, where they do take place MPAC will analyze the sale price to assist in:

- airport sales, analyzed to obtain capitalization rates and, in some cases, earnings before interest, taxes, depreciation and amortization (EBITDA) multipliers
- airport sales, if available, analyzed to obtain information that may assist in ensuring that current value obtained through use of the cost approach is in line with available market information
- confirming final current values for property tax purposes

Sales data collected by MPAC will include:

- property address and legal description
- sales price
- date of transfer
- name and address of vendor and purchaser
- interests transferred (fee simple or other)
- purchaser motivation
- financing conditions

It is important for MPAC to ascertain as much information as possible regarding any sale of an airport. All interests in the property sale must be isolated and separated to derive realistic values for the assessable property. Airport sales will include non-assessable items, such as inventory, personal property, intangibles (business value) and the contributory value of the improvements. These items need to be excluded from the sale price so that data relating only to the realty can be analyzed.

- airport sales, analyzed to obtain capitalization rates and, in some cases, earnings before interest, taxes, depreciation and amortization (EBITDA) multipliers
- airport sales, if available, analyzed to obtain information that may assist in ensuring that current value obtained through use of the cost approach is in line with available market information

### **Airport Improvements**

Airport improvements include buildings that serve specialized aviation functions, including passenger and cargo handling and aircraft servicing and maintenance. The major classes of improvements associated with airports can be identified as:

- runways, taxiways, aprons, paving
- security fencing
- passenger and cargo terminals
- administration buildings
- aircraft maintenance hangars
- cargo handling
- runway vehicle maintenance facilities
- storage buildings
- power facilities
- sewage facilities
- tunnels

Many airports also contain improvements such as car rental facilities, parking facilities, retail shopping facilities (in the terminals), flight kitchens and airport hotels.

## **Services and Facilities**

Within the overall airport, a wide range of services and facilities are provided, which can be divided into three distinct groups:

- essential operation services
- traffic handling
- commercial activities

Passenger volume is the key factor at the major commercial airports, since it has the largest impact on an airport's revenue. Passenger volume will generally dictate airline demand for concession and commercial space, driving the airport's revenue potential.

Business activities and revenue from airport operations will typically be derived from airside and groundside activities. The proportionate contribution will vary depending on an airport's size.

### *Airside Activities*

These generally involve anything that is related to the operation of aircraft and aircraft movement while on the ground (including runways, taxiways and air bridges).

### *Groundside Activities*

These generally include the supply of parking, loading and terminal buildings for concessions and retailing, together with any other ground lease agreements.

As a general rule, analysis of airport financial statements indicates that the large international airports derive a greater percentage of income from groundside activities than from airside activities. In other words, a greater percentage of gross revenue is derived from retail, concessions, car parking and ground leases than from landing or aeronautical fees.

The level of departmental income also varies between airports. Airports with higher volumes of international passengers versus domestic passengers typically derive greater revenue from the trading or retail departments.

Airports with higher volumes of domestic passengers typically derive a higher percentage of gross revenue from landing or terminal fees.

## **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 (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 the appropriate valuation method to use and how it should be applied.

MPAC will analyze the data obtained in respect of the particular airport to determine whether it should be valued using the income approach or the cost approach.

If the income approach to value is being used, MPAC will analyze the data obtained in respect of revenues and expenses at a particular airport to ensure that it is reasonable in comparison



with other similar airports and in line with industry expectations. It is important to stabilize airport income and expenditures.

### **Stabilizing Income and Expenses**

Airport income and expenses can vary by a significant amount from one year to the next. While the valuation of an airport looks to the income returned over the long run, it would not be appropriate for MPAC to value airports on the basis of one poor performance year or one excellent performance year. By taking a weighted average of income and expenses over a three-year period, the peaks and valleys of incomes and expenses can be reduced and the value of the airport becomes based upon a more stable picture of the airport's performance.

If the data shows that it is not appropriate to value the airport using the income approach, it will be valued using the cost approach, as outlined in Section 4 of this guide.

## **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 Income Approach for Airports

### 3.1 Outline

MPAC uses the direct capitalization method to apply the income approach to airport properties. The direct capitalization method for the valuation of airports that are run by airport or port authorities have the following steps:

- Determine stabilized airside and landside revenues for the airport.
- Determine the potential gross income (PGI).
- Determine stabilized operating expenses to determine the operating income (OI).
- Deduct stabilized expenses,
- Determine net operating income (NOI) before municipal taxes.
- Determine the average ratio of capital expenditures being spent on large international airports around the world.
- Determine NOI, less capital expenditure.
- Determine the effective tax rate (ETR) used to represent property taxes. To determine the ETR, the municipal commercial tax rate is referenced and adjusted to account for the subsequent personal property deduction from the capitalized value.
- Calculate the effective tax rate.
- Add the effective tax rate to the capitalization rate.
- Capitalize the NOI (less capital expenditures) into an estimate of value.
- Deduct personal property from the capitalized value, with the result being the current value assessment.
- Allow for the addition of leasehold airport improvements (eg., infield hangars and buildings, structures only)

### 3.2 Apportionment of Value to Airport Tenants

MPAC is required to apportion the value of the airport to various tenants. This is done as follows:

- Collect rent rolls (tenant space and rents) from airport and port authorities management.
- Organize space lease tenants into logical classes (e.g., retail, office, concessions, industrial storage).
- Determine any market influences that may affect the rents.
- Apply the appropriate gross expense rate to rents or adjusted rents (if required).
- Apply the same capitalization rate from the total airport valuation to the NOI of the specific tenant.
- Using the cost approach, value tenants on the infield, who pay the airport authorities a ground lease rent and build their own structures from where they operate.
- Analyze land lease tenant rental patterns.
- Add the total value of the tenant improvements (buildings only) to the capitalized NOI value for the final valuation calculation.

### 3.3 Airport Revenues

There are various types of revenue available at airports:

#### **Landing Fees from the Entire Airfield Operations**

A landing fee is charged for each landing of an aircraft at the airport based on the arriving aircraft's maximum take-off weight (MTOW). The level of passenger activity at the airport directly affects aircraft movement, and, consequently, MTOW and revenues from landing fees will vary annually.

#### **General Terminal Charges**

These charges relate to the costs to operate the terminal, and are established on a cost per landed seat, which reflects passenger activity levels. Thus, these charges will also vary annually as a direct result of overall passenger traffic.

## **Car Parking Revenues**

Parking revenues are derived from the operation of the public parking lots or garages as well as remote and metered parking. An airport's parking revenue is directly related to the origin and destination traffic.

## **Concession Revenues**

Concession revenues are a function of passenger space devoted to concessions. The main sources of concession revenues are duty free sales, retail, food and beverage operations. The majority of concession arrangements provide for payment of a percentage of gross revenues with minimum annual payment guarantees.

## **Space and Office Rentals**

These include income from airport-leased land. The revenues are adjusted to reflect the space rented using the actual space leased according to the most recent information available. The rents applied should be derived from actual data provided by the airport authorities.

## **Land Rentals**

This refers to income generated from ground leases to aircraft maintenance facility operators, private airplane hangar operators, flight kitchens, de-icing facilities, cargo operations, car rental agencies, etc.

## **Other Operating Revenues**

Other revenues comprise electrical power, fines for airport traffic regulations and the federal Transportation Act collection expenses, interest on overdue accounts (variable and fixed rate), exchange gain/loss, recovery of airport maintenance charges, sundry services, telephone service, water, aircraft parking fees, aviation fuel, recoverable services, penalties issued under the Aeronautics Act and other miscellaneous revenues. De-icing revenues are also listed in this category.

## **Airport Improvement Fees**

Airport improvement fees (AIF) are collected under an agreement (the AIF Agreement) with the Air Transport Association of Canada and major air carriers serving the airport. The AIF Agreement provides for a consultation process with air carriers on airport development, as well as the collection of an AIF by air carriers. AIF revenues can only be used to pay for airport infrastructure development and related financing costs.

As already indicated, MPAC stabilizes this income to reflect the annual income generated from typical passenger loads over a period of three years.

In the valuation of airports, MPAC will select the revenues from calendar year figures that are the closest figures to the base year valuation date.

### **3.4 Airport Expenses**

As with revenues, MPAC will identify the expenses from three calendar years that are the closest to the base year valuation date. Typical expenses are outlined below.

#### **Salaries, Wages and Benefits**

The airport authority pays salaries and wages and provides benefits to its unionized and non-unionized employees, including pension plans, medical and life insurance benefits and certain other benefits, provided for under collective agreements with its unionized employees.

#### **Operations**

Operations related to repairs, maintenance, materials, supplies and services are assumed to apply to the whole airport. These expenditures are those costs associated with the operation and maintenance of the airport's facilities. Included would be utilities, supplies and services, equipment and property rental, repairs and maintenance, engineering and professional services, insurance, expenses related to the administration and management of the airport, as well as policing and security.

#### **Amortization**

Amortization as reported should reflect the amortization of capital assets, such as runways, buildings, roadways, operating equipment and improvements to leased land. Amortization is removed as an expense because it is an accounting construct, not a cash expense, and the capitalization rate must be applied to net cash income. Instead, a replacement allowance reflecting the stabilized cost for replacement should be deducted.

#### **Property taxes**

Property taxes are removed from expenses since the purpose of this analysis is to calculate the value of the airport for property assessment. An effective tax rate calculation is included in the capitalization rate to reflect this.

## Other expenses

Other expenses are miscellaneous expenses not falling into any of the above categories.

## Rent

Airport rent, which is the amount paid under a ground lease, is included as an expense. Airport authorities have signed ground lease agreements with the Government of Canada, which provides that the authorities will lease the airport facilities for an initial term of sixty years. A twenty-year renewal option may be exercised, but at the end of the renewal term, unless otherwise extended, the authority is obligated to return control of the airport to the landlord (the Crown) without debt.

The operating lease for an airport requires the authority to pay a PILT to the Crown based on a legislated calculation for each authority. The legislated rate is multiplied by the passenger count to calculate the payment.

As with revenues, MPAC stabilizes the expenses using three years of financial data to reflect typical annual expenditure for the airport concerned.

## 3.5 Capitalization Rate

The capitalization rate is the factor that connects the net income stream to the current value of the property. MPAC researches local, national and international market data for sales of airports. MPAC identifies the net operating income of the airport that sold and then analyzes the sale price to identify the capitalization rate for that sale.

The capitalization rate is derived by using the following formula:

$$\text{Capitalization Rate} = \frac{\text{Net Operating Income}}{\text{Property Purchase Price}}$$

Once the stabilized annual net income of the airport to be valued is established, the amount can be capitalized into an estimate of current value based on existing airport sales evidence.

The capitalization rate recognizes the future potential of the income stream to which it is applied. It measures the quality of an expected income stream at a single point in time, as well as opportunities for income enhancement and risks of income reductions known at that time.

The valuation arrived at through the direct capitalization of income will reflect a figure based on the actual adjusted income as reported; in other words, the value of the airport operation as a going concern.

MPAC then makes adjustments for personal property and any business enterprise value or goodwill.

The leasehold improvements of the infield tenants (i.e., physical structures on leased land outside the terminal buildings) are valued based on the cost approach to value and then added onto the value of the capitalized NOI to get an overall value of the entire airport.

There may also be excess land at airports, which does not contribute to the income stream and must therefore be valued separately and added to the value derived from the income approach. Such excess land is likely to be valued on the indicated current value of surrounding lands that have similar use and utility.

In this short guide, it is not possible to go into detail about the more complex aspects of the valuation of airports using the income approach, but it is hoped that the brief outline provided is helpful.

An example of an airport valuation using the income approach is contained in Appendix A.

## 4.0 The Cost Approach for Airports

### 4.1 Outline

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.

#### **Value the Land**

Land value is usually established through analysis of comparable market sales data. Airport land is usually extensive in size and may include land used for purposes other than direct airport use.

#### **Value the Improvements**

MPAC estimates the value of the improvements using the following process:

- Collect the physical and descriptive data about the airport site.
- Inspect the buildings 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 the online ACS system, estimate the reproduction costs new of the assessable improvements as of the valuation date.
- Deduct from reproduction cost new an amount reflecting all forms of depreciation, which may include:
  - physical (curable and incurable)
  - functional obsolescence (curable and incurable)
  - external obsolescence (economic and locational)

The resulting value will be an estimate of the contribution of the improvements to the current value of the subject, depreciated for all causes.

#### **Assessed Value**

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



## 4.2 Steps in the Cost Approach

The main steps in the cost approach used for valuing airport properties are as follows:

- 1) Determine the reproduction cost new of the building Improvements.
- 2) Determine depreciation (physical and functional and external obsolescence).
- 3) Calculate the net improvement value.
- 4) Determine the replacement cost new and all forms of depreciation of the airport site improvements.
- 5) Determine the land value for various airport land uses.
- 6) Calculate the current value.
- 7) Determine which improvements are tax exempt (if any).
- 8) Determine the assessed value of partitions.

## 4.3 Reproduction Cost New

The first step in the process is to establish the value of the improvements if they were to be reproduced as new. This step is accomplished by application of MPAC's ACS system, which enables the determination of reproduction cost new (RCN).

MPAC's ACS system includes rates that take account of physical depreciation based on the age of the existing improvements.

Separate exercises are undertaken to establish the RCN of both buildings and site improvements (referred to as "yardwork") at the airport.

## 4.4 Physical Depreciation

Physical depreciation acknowledges that all building improvements deteriorate over time and, as a result, have limited lifespans. Physical depreciation generally relates to the age of the property. Some forms of physical depreciation are curable while others are not economically viable to correct (incurable). The loss in value from deterioration is a reflection of the fact that a prospective purchaser would pay less for an older building in poor condition than a similar newer one in good condition.

Establishing the current condition of the property and estimating the effective age against the remaining physical life of the improvements determines such depreciation.

Physical depreciation can be analyzed in a very detailed manner by judging the condition and expected remaining physical life of each building component, including such items as plumbing, paint and roof covering. The amount of analysis required and the number of judgments concerning the condition and expected life of each component limits the applicability of this method; it is generally not appropriate for mass appraisal.

A more generalized approach requires a review of the condition of the property as a whole, determination of its effective age and, given the expectation of typical maintenance, a determination of the physical life of the buildings.

As airports constantly evolve to deal with security issues as well changing passenger and cargo volumes and aircraft movements, the traditional concept of physical life must be constantly compared to actual economic life of the facilities and adapted to the specifics of the airport business.

As already indicated, physical depreciation due to age is reflected in the ACS rates used by MPAC; this is shown in the sample airport valuation contained in Appendix B. (See the line described as “Life Table Depreciation”.)

#### 4.5 Obsolescence

Depreciation arising as a result of obsolescence can be broken down into two components:

- functional obsolescence
- external obsolescence (including locational and economic obsolescence)

Obsolescence is not necessarily related to the age of the property but arises out of analysis of property functionality and the external conditions that may affect the value of the property.

The *obsolescence factor* is a reflection of the simple proposition that people pay less for items or properties that are obsolete. A loss of functionality, attractiveness or utility translates to a corresponding loss in current value.

Many of the functional obsolescence factors arise as a result of inefficient layout and improvements that are poorly adapted to the function they are supposed to fulfill. Analysis of the functionality of a property addresses a number of the obsolescence issues.

## **Functional Obsolescence**

The following list of factors that may give rise to functional obsolescence is not intended to be all-inclusive, as many functional problems are property specific.

- inefficient layout
- lack of adaptability to current or future uses
- lack of suitability of buildings or site improvements for current use
- extra operating costs
- excessive or inferior construction
- inferior materials or construction

Quantifying any functional obsolescence requires knowledge of the existing deficiencies at the airport. This information may be obtained through a site inspection, but is likely to require input from the airport operator.

It may also require comparison between the airport being valued and a modern airport that may be used as the basis for costing a notional “replacement” of the existing facility.

## **External Obsolescence**

Arising from causes external to the property, and therefore outside the control of the airport operator, economic obsolescence is evaluated in relation to external issues, whether they are economic conditions or current airport performance standards. This type of obsolescence can be difficult to quantify and must rely, in many instances, upon the assessor’s judgment. There are several factors that may contribute to external obsolescence.

### *A Change in Market Demand for the Airport*

Examples of causes of external depreciation include the merger of two airlines (creating a decline in competition), increased competition from another airport or a permanent fall off in air travel demand due to changed demographics. In such instances, the property has lost some ability to generate revenue and therefore can incur a corresponding drop in value.

### *A Change in the Attractiveness of the Location*

Commonly referred to as locational obsolescence, this decline in value is caused by any number of factors that change the attractiveness, and therefore value, of a location. For example, the closure of a rail line serving the airport and locality.

### *A Change in Government Restrictions or Regulations*

Government regulations may be introduced to govern the airport, affecting the viability of the operation (for example, noise near residential properties). This situation may produce external obsolescence for an airport through increases to the cost of operations, without a corresponding increase in revenue.

### *Physical Site Restrictions*

The demand for the airport may be such that an expansion is desired. However, due to zoning or physical restrictions, this may not be possible on the existing site. Anything from the unfulfilled need for more parking spaces and hotel facilities to a desired yet unavailable building expansion may cause this form of external depreciation.

### *A Decline in General Economic Conditions*

A recession can cause a drastic and long-term fall in the demand for air travel, leading to a reduction in the value of airports.

Quantification of external obsolescence can be complex, and the various methodologies that may be used are too detailed for the purposes of this brief guide.

## **Application of External Obsolescence to Other Uses**

Obsolescence should also be measured for improvements that are not strictly related to the land's use as an airport. One example would be the presence of warehousing operations at the various aerodromes.

Warehousing operations at aerodromes must be reviewed with the same methodology as other warehouses. The capital improvements that form the components of the warehousing operation at an aerodrome may exceed a comparable market value.

Once a warehouse proforma has been completed, the resultant value can be compared to the replacement cost value of the improvements. Any differences between the income valuation of the warehouse operation and the replacement cost value can be calculated. An adjustment can

be made to the replacement cost new less depreciation for the golf course components to reflect obsolescence, if necessary.

#### 4.6 Land Valuation

The cost approach requires a value for land owned and used by the airport. Land is valued using the market sales comparison approach.

Land should be valued as if vacant. Preferably, the assessor will compare land sales of sites in a comparable location, area and zoning of the subject site.

Once comparable sales data has been obtained with reference to sales that occurred on and around the valuation date, it is possible to determine the airport site's market value using the market sales comparison approach.

While it is likely that an airport will be zoned for transportation uses, the actual uses in place will be more diverse (i.e., aviation-related, commercial or industrial). It is unlikely that sufficient sales of large sites equal to the size required for a modern urban airfield will be available. This, in turn, will require the use of land sales with other types of zoning to arrive at a value conclusion. For example, some land associated with airfields may be used for commercial purposes (such as office buildings), in which case the land can be valued accordingly.

Vacant land on airport sites is valued according to the uses designated on the airport master plan. Consideration is given to the designated use, level of servicing and timing of likely development. In the absence of a formal master plan, discussions with airport administrators can be used to ascertain likely uses and potential development horizons.

Adjustments to value may have to be made for the following points of comparison between the airport lands and the sites that have sold:

- location
- size of site
- site utilization or intended use
- zoning
- airport master plan designation
- aviation easements

- topography
- soil conditions
- date of sale

Once the land has been valued, its value can be added to the replacement cost new less depreciation, or net value, for the airport buildings and site improvements to give a final value for the airport.

A simplified example of a summary valuation of an airport using the cost approach is contained in Appendix B.

#### **4.7 Partition Value of Airport**

MPAC may also have to apportion the final value of the airport based on how the land is occupied and used. This is done as follows:

- 1) Collect rent rolls from airport management.
- 2) Organize space leased by tenants into logical classes (i.e., retail, office, concessions, hangars, etc.).
- 3) Analyze space rental patterns.
- 4) Organize the land leased by tenants into logical classes.
- 5) Analyze land lease rental patterns.
- 6) Create tables containing the median and range of rents, excluding outliers, which should apply to each type of space and land use in the airport.
- 7) Partition property value by percentage of occupied improvement along with associated land area.

The summation of the partitioned values by property class will be recorded on the assessment roll as required under Section 14(5) of Assessment Act.

When the subject airport is Crown-owned, the apportioned value for each tenant will be recorded on the assessment roll as required by Sections 17 and 14 of the Assessment Act, through the clause set out in Section 18(1).

## **4.8 Assessed Value**

Having arrived at the value of the airport through the above process, MPAC assessors will check the outcome of the valuation to ensure no errors have been made and that the approach to estimate value is in line with the valuation of similar airports.

## **4.9 Conclusion**

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

## Appendix A – Example of an Airport Valuation Using the Income Approach

<b>Revenue (stabilized)</b>	
Landing Fees	\$75,000,000
Airport Improvement Fee	\$150,000,000
Car Parking and Ground Transport	\$60,000,000
General Terminal Fees	\$100,000,000
Land and Space Rentals	\$35,000,000
Concessions	\$40,000,000
Other Operating Revenues	\$5,000,000
<b>Total Revenue</b>	<b>\$465,000,000</b>
<b>Direct Expenses (stabilized)</b>	
Salaries and Wages	\$50,000,000
Materials and Supplies	\$110,000,000
<b>Total Expenses</b>	<b>\$160,000,000</b>
Earnings Before Deduction of Interest, Taxes, Depreciation and Amortization (EBITDA)	\$305,000,000
Capital Expenditure	\$100,000,000
<b>Net Operating Income</b>	<b>\$205,000,000</b>
Capitalization Rate: 6%	
Adjusted for Tax: 2%	
Effective Capitalization Rate: 8%	
<b>Total Value</b>	<b>\$2,562,500,000</b>
Less: Reserves for FF&E	\$150,000,000
Final Estimate of Value	\$2,412,500,000
Leasehold Improvement	\$600,000,000
<b>Total Current Value</b>	<b>\$3,012,500,000</b>



## Appendix B – Example of an Airport Valuation Using the Cost Approach

Property Value Summary	Valuation of Buildings	Total Land Value
Total Building Net Value: \$2,235,000	Total Gross Floor Area (SF): 90,220 Total Buildings RCN: \$ 7,024,590	Site area: 950 acres Industrial: \$10,000,000
Total Yardwork Net Value: \$1,500,000	Functional Obsolescence: \$0 Life Table Depreciation: \$4,789,000	Farm 1: \$1,000,000 Farm 2: \$950,000
Total Land Value: \$11,950,000	Economic Obsolescence: \$0 <b>Total Buildings Net Value: \$24,500,000</b> <b>\$2,235,000</b>	<b>Total Land Value: \$11,950,000</b>
<b>Property Current Value:</b> <b>\$15,685,000</b>		
	Valuation of Yardwork	Excess Land
	Total Yardwork RCN: \$3,500,000	None
	Functional Obsolescence: \$500,000	
	Life Table Depreciation: \$1,500,000	
	Economic Obsolescence: \$0	
	<b>Total Yardwork Net Value: \$1,500,000</b>	

### Valuation of Buildings

Bldg#	Bldg Use	Level	Floor Area	Bldg RCN	Year Built	Int. Fin. Area	LifeTable	RCNLD
T-1-3	TERMINAL BUILDING	2	1784	166,090	1995		50 OR	114,648
T-1-2	TERMINAL BUILDING	1	1718	240,264	1995		50 OR	202,261
T-1-1	TERMINAL BUILDING	1	7298	1,345,700	1975		50 OR	630,501
NAV-1-5	NAVIGATIONAL SERVICES	3	435	39,140	1990		50 OR	24,490
NAV-1-4	CONTROL CAB	3	754	149,264	1990		50 OR	92,726
NAV-1-3	ADMINISTRATIVE	2	1950	214,021	1990		50 OR	128,600
NAV-1-2	SERVICE AREA	1	2000	262,120	1990		50 OR	164,618
H-5-2	AIRCRAFT REPAIRS	1		38,229	1990	3318	40 OR	22,175
H-5-1	HANGAR NO 5	1	36751	2,164,530	1939		50 OR	516,020
H-4-2	OFFICE/SCHOOL	1		22,013	1980	2542	40 OR	3,108
H-4-1	HANGAR NO 4	1	36910	2,314,983	1939		40 OR	300,683
GP-1	GLIDE PATH	1	125	14,730	1985		30 OR	6,752
FO-1	FUELING OFFICE	1	290	29,875	1990		50 OR	17,356
DF-1	DIRECTIONAL FINDER	1	80	10,163	1985		30 OR	4,866
LOC-1	LOCALIZER	1	125	13,468	1985		30 OR	6,537
	Total Gross Floor Area:		90,220				Total Building Net Value:	\$2,235,341

### Yardwork

Description	Improvement	Year Built	Quantity	Tax Class	Rate	RCN	L.T. Type	Life Table	% OBS	% Good	Amt. OBSOL	Net Value
RUNWAYS, APRON, TAXIWAY	PAVING ASPH	1975	1	E	2,512,000.00	2,512,000	OR	0		50		1,256,000
APRON	PAVING CONCRETE	1954	1	E	500,000.00	500,000	OR		100		500,000	0
PARKING	PAVING ASPHALT	1995	1	E	488,000.00	488,000	OR	0		50		244,000

Note: The above figures are for illustrative purposes only.