

Market Value Assessment in Saskatchewan Handbook

Warehouse

Valuation Guide



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Warehouse Valuation Guide

Market Value Based Assessment Legislation in Saskatchewan

Saskatchewan has different assessment legislation¹ than other jurisdictions in Canada that must be taken into account when valuing properties for assessment and taxation purposes. There are specific definitions in Saskatchewan for “base date”, “market value”, “Market Valuation Standard” and “mass appraisal”. It is important to understand how these definitions relate to one another and the requirement for market value based assessments to be determined in accordance with the Market Valuation Standard.

Base Date is defined as “...the date established by the agency for determining the value of land and improvements for the purpose of establishing assessment rolls for the year in which the valuation is to be effective and for each subsequent year in which the next revaluation is to be effective;”

Market Value is defined as the “...amount that a property should be expected to realize if the estate in fee simple in the property is sold in a competitive and open market by a willing seller to a willing buyer, each acting prudently and knowledgeably, and assuming that the amount is not affected by undue stimuli;”.

Market Valuation Standard means the “standard achieved when the assessed value of property:

- (i) is prepared using mass appraisal;
- (ii) is an estimate of the market value of the estate in fee simple in the property;
- (iii) reflects typical market conditions for similar properties; and
- (iv) meets quality assurance standards established by order of the agency;”

Mass appraisal is defined as “...the process of preparing assessments for a group of properties as of the base date using standard appraisal methods, employing common data and allowing for statistical testing;”.

Assessment legislation in Saskatchewan requires that non-regulated property assessments be determined pursuant to the Market Valuation Standard. Throughout this Handbook the term “market value based assessments” is used to refer to non-regulated property assessments. Unlike single property appraisals, market value based assessments must be prepared using mass appraisal and “...shall not be varied on appeal using single property appraisal techniques”. All Handbook references to market value are subject to the requirements of the Market Valuation Standard.

¹ The following Acts provide the statutory basis for property assessment in Saskatchewan:

- *The Assessment Management Agency Act*
- *The Interpretation Act, 1995*
- *The Cities Act*
- *The Municipalities Act*
- *The Northern Municipalities Act, 2010*

For more details on how to access this information refer to Appendix 2: Resources - Section 2a (Queen’s Printer).

1.0 Introduction

The primary functions of a warehouse are to store, mix, consolidate, and distribute raw materials, goods, and/or finished products. Warehouses can provide a number of these functions, or can be designed for one specific use.

Typically, warehouses are an integral part of a manufacturing or retailing operation, or act as trans-shipment points for goods and materials. Warehouses can be constructed of different kinds of materials (wood, concrete, metal). They can range in size from large, nation-wide distribution centres to small, local storage facilities. They can be owner-occupied, single tenanted, or multi-tenanted. They can be single-storey or multi-storey.

Although there is a wide variety of uses and styles of warehouses, such buildings are generally uncomplicated structures that can be adapted to a number of commercial and many light industrial uses. Warehouses are purchased, leased, or built to suit any or all of these conditions. Like any other property, the functionality of a warehouse is measured in terms of how well the facility serves its required purposes.

1.1 Warehouses Covered in this Valuation Guide

The methods described in this valuation guide are designed to suit warehouses ranging from storage warehouses up to mega-warehouses.

Although the methods presented here may be applicable to other types of industrial or commercial-industrial properties such as warehouse-showroom retail outlets, this valuation guide does not directly address these or any other types of properties.

1.2 Scope of Valuation Guide

- This valuation guide is designed as an aid in the valuation of warehouses for assessment purposes.
- It sets out procedures to follow to derive market value based assessments for warehouses using the:
 - income approach to value
 - sales comparison approach to value
 - cost approach to value
- This valuation guide provides a practical tool to evaluate and determine market value based assessments.
- Valuation parameters provide the guidelines that establish statistically sound market value based assessments for warehouses as of the base date.
- The valuation guide is designed as a tool to aid the assessor in deriving market value based assessments; it is not intended to replace the assessor's judgement in the valuation process.

- The methods presented in this valuation guide are aimed at deriving assessment values for a number of different groups of warehouses.

Hypothetical data and analysis are provided throughout this Valuation Guide in the narrative and in various examples, tables and forms. These examples are provided for illustrative purposes only. The exact form of the market value based assessment analysis is up to the discretion of the assessor subject to the Market Valuation Standard and other relevant legislation.

2.0 Analysis of Valuation Approaches

2.1 Approaches to Value

Sales Comparison Approach

Warehouses of all types and sizes are sold on the open market from time to time. However there are many types of warehouses and it may not always be possible to obtain a sufficient number of sales for a particular type of property (e.g. storage, distribution or transit warehouse) in every assessment valuation period. Where sales information is present and applicable, the sales comparison approach can be a useful tool for establishing market value based assessments. If sales information is not sufficient then other approaches to value may be considered.

Income Approach

Although many warehouses are owner-occupied and form part of an integrated manufacturing or distribution system, many others have lease arrangements so it is generally possible to obtain rental information for the various types of warehouses. Furthermore, there are generally sales available to indicate capitalization rates required in determining market value based assessments using the income approach. The income approach is an appropriate method for establishing market value based assessments for any warehouse property subject to adequate sales and rental information. Also, any warehouse building sale that does occur should be researched and verified as such analysis is useful in establishing capitalization rates and in confirming the values derived using other approaches to value.

Cost Approach

The cost approach method provides a good indication of value if the property is newer and this approach is useful in situations where there is insufficient income and sales data. This method is widely understood and with appropriate analysis of depreciation it produces good results. Although warehouses vary in size and function and can be constructed of many types of building materials, they are generally not complicated properties from a construction point of view. Therefore, the cost approach can be a useful tool for establishing market value based assessments.

The cost approach is based on the development of replacement models depicting the replacement costs to build typical warehouses. Such models can be developed from local warehouse construction data or obtained from cost publications such as *Marshall Valuation Service*. Usually a cost publication will utilize replacement cost rates to determine the cost of the warehouse improvements as new. Tables in these publications indicate normal depreciation due to aging. Other forms of depreciation and obsolescence may be established by research and comparison of property values established by using the sales comparison or income approaches.

2.2 Recommendation

For the valuation of warehouse properties for assessment purposes any one of the three approaches to value – income, sales comparison or cost – can be used, subject to adequate underlying income, sales or cost information.

The approach that best reflects the manner in which the market views these properties should be used, subject to the availability of sufficient data for analysis.

2.3 Practical Valuation Process

In this valuation guide, the income approach, sales comparison approach and cost approach have been developed into practical valuation tools with guidelines on:

- Collecting data;
- Analysing information;
- Developing valuation parameters;
- Determining market value based assessments; and
- Testing the quality of assessment values. (Refer to the Valuation Parameters Guide for a general discussion on statistical testing.)

3.0 Warehouse Valuation Process

3.1 Overview of the Procedure

- 1) Collect appropriate information.
- 2) Analyse data and classify warehouses into homogeneous groups.
- 3) Select the appropriate approach to value:
 - Income approach
 - Sales comparison approach
 - Cost approach
- 4) Apply method(s) to derive market value based assessments.
- 5) Add / deduct for other appropriate value, if required.
- 6) Determine a market value based assessment of the property.
- 7) Test results.

3.2 Collecting the Appropriate Data

More than any other factor, the type and quality of information available dictate the methods that can be used to value properties. Uniform and accurate valuation of property requires correct, complete, and up-to-date property data. The effort put in at the information collection stage will determine the quality of the final analysis.

Supporting Information

Sources of supporting information include: warehouse building owners/managers, real estate consultants and brokers, real estate publications, industry associations and government sources.

Property Information

To compare, classify and develop valuation parameters for warehouse buildings, it is necessary to obtain pertinent physical and descriptive information. Typical information that could be collected for a property and entered into the assessor's valuation system is shown on the Warehouse Data Entry Example. (*Refer to Figure 5.*)

Assessment Records

Where possible, the assessor will verify the existing assessment record information when inspecting the property. Where the information is not available or obtainable from inspection, the property owner (or the designated contact person) is typically contacted to provide the following information:

- Year built,

- Size,
 - area of site;
 - floor areas;
 - building dimensions;
 - heights;
 - number of floors; and
- Construction dates.

Property Inspection

To keep existing records up to date, all assessed properties are generally inspected from time to time. The following types of items may be noted when inspecting a warehouse property:

- Physical measurements of the warehouse;
- Type of warehouse/goods handled (e.g., storage, cold storage, distribution);
- Quality of building;
- Other buildings/improvements on site;
- Condition of improvement;
- Construction class (materials e.g. wood, concrete or steel);
- Floor loading/floor thickness;
- Wall height;
- Truck door/dock type;
- Quality and amount of office space;
- Type of heating/air conditioning;
- Sprinkler system;
- Location/access;
- Lot size site;
- Site characteristics (topography, drainage and utility lines)
- Layout / design;
- Recent renovations;
- Functionality of property;
- Photograph of the property.

Where there appears to be surplus or excess land, the assessor may note this on the record and review the zoning and land use by-laws governing the property to decide how to value the surplus or excess land.

An analysis of the property information and property inspection information will enable the assessor to arrive at conclusions about:

- The characteristics and nature of the warehouse building market in the jurisdiction and/or market area;
- Typical vacancy and collection loss factors;
- Typical management and operating expenses; and
- Typical market rents for various types of buildings and various types of space (office, retail, storage, etc.).

Income Data

If the income approach is to be used, then income and expense information is collected. However, even if the income approach is not used, information such as market rents and vacancy rates can assist in estimating depreciation and obsolescence. To collect the appropriate property income related information the assessor could send a Request for Information Form to the warehouse building property owner (or the designated contact person). (*Refer to section 9.0 for examples.*) If possible, request the following information.

- Gross leasable areas (GLA);
- Rents and financial information, including other income (if any);
- Records and details of tenant inducements;
- Vacancy rates and collection loss;
- Operating expenses;
- Copies of leases; and
- Unrecovered expenses.

Sales Data

Sales data should be collected whenever possible. Even though there may not be a sufficient number of sales to use the sales comparison approach for a certain class of warehouses, the sales information may still be useful in the development of market-based depreciation schedules in the cost approach, and in the derivation of capitalization rates or discount rates. The assessor can request the following type of information:

- Property address and legal description;
- Sale price;
- Date of transfer;
- Instrument number;
- Name and address of vendor and purchaser;

- Interests transferred (fee simple or other);
- Financing conditions; and
- Value of chattels.

Construction Costs

The construction costs of a building can be estimated from a number of different cost publications such as *Marshall Valuation Service* which are complete, authoritative guides for developing estimates of costs and depreciation for commercial buildings and other improvements. Current cost and depreciation data adjusted to the local market is also required for the cost approach.

In determining the value of a particular type of property, it is also useful to analyse local construction costs. Therefore, assessors may ask warehouse owners for construction cost data for all new warehouses and all major reconstruction work. It may also be useful to consider the information provided on any building permit. The analysis of local cost data may assist in confirming rates found in cost publications.

When analysing construction cost data, exercise caution to ensure that the local costs reflect the cost of all assessable items and only those items that are assessable.

An Issue to Consider in the Collection of Data: Measurements

Under ideal conditions, all building areas would be measured and reported in the same manner and all building heights would reflect the same measure. In reality, the reporting of such measures can vary greatly.

Building structures are usually measured by either square footage or volume. It is important that when collecting and analysing this information that the units of comparisons are classified into groups with similar units of measurement.

Heights often reflect either the clear height, which is the distance measured from the top of the floor to the bottom of the lowest hanging overhead obstruction, or the structural height, which is the distance measured from the floor (top or bottom of one floor or ceiling– depending on the cost publication) to the top of the next floor or the structural steel of the roof. The height of the structural steel can vary between one and eight feet in height (depending on the size of the building and the type of construction).

Data Analysis

For the assessor to gain full value from the data collected, the data should be organized in such a way that meaningful comparisons can be made and valuation conclusions drawn. By collecting and organizing the data on a number of warehouse buildings it becomes possible to establish the typical performance, characteristics, and valuation parameters to apply in the valuation of other warehouse buildings.

Collecting and tabulating such data also enables the assessor to distinguish between the typical value of real estate components and the actual performance of a specific property. A market value based assessment determined through mass appraisal methods demands the application of a property's typical performance in the marketplace, not its actual performance. As noted in the Valuation Parameters Guide,

this requirement is established in the Market Valuation Standard mandated in legislation in Saskatchewan's municipal Acts.

3.3 Classifying the Warehouse

The following is a list of various types of warehouses:

- Storage warehouses - Designed primarily for storage; small percentage of total area may be office space;
- Distribution warehouses - Designed to accommodate breakdown and transshipment of goods; a larger percentage of the total area for office/sales;
- Mega-warehouses – Designed as large storage-distribution facilities; interior build-out is typically a small percentage of total area;
- Transit warehouses - Designed for temporary closed storage, freight segregation and loading; will have additional facilities for transient personnel;
- Cold storage warehouses - Designed to keep stored commodities at various temperature levels; and
- Mini-warehouses - Designed primarily to be rented for small self storage or noncommercial storage; may include some office-living space.

To facilitate the valuation process, the assessor groups warehouses into homogeneous classes. This process is commonly referred to as stratification. The ability to compare properties is also crucial in the mass appraisal process because it allows the assessor to determine typical market conditions.

The functionality, viability, and value of a warehouse is largely dependent on its characteristics: area, height, accessibility, location, truck or rail connections, number of truck doors, floor height, turnover or processing abilities, and competition from other warehouses. Therefore, the valuation of a warehouse property is based on the analysis and comparison of similar properties.

Establishing Warehouse Classes

The following characteristics are examples of attributes that can be used to classify warehouses:

- Function;
- Size;
- Age/condition;
- Percent of office space;
- Floor thickness and loading capacity;
- Height;
- Location; and
- Land/building ratio.

Classes

When the cost approach is used the classes can be further stratified by type of construction (steel, wood and concrete) and subdivided according to the quality of the facility for example: (excellent, good, average and low cost).

4.0 *Income Approach to Value*

4.1 Application of the Income Approach

Income Approach Methods

In general, there are two methods available to convert future income into a present value:

1. Direct capitalization, and
2. Yield capitalization (discounted cash flow analysis).

The direct capitalization method is most applicable to the valuation of income-producing properties in a mass appraisal environment. It requires the least amount of data to apply, reflects typical rents and market conditions, and is best suited to the use of statistical analysis. The yield capitalization method is not suitable for use in mass appraisal valuations in Saskatchewan due to its consideration of individual investor preferences (reflects personal versus typical market conditions), its need for more market data and numerous estimates of rents, holding periods and projected reversions, and its lack of suitability for statistical analysis. For these reasons the yield capitalization method will not be further detailed in this Guide.

Overview of the Direct Capitalization Method

The analysis in this section presents a direct capitalization method that is suited for mass appraisal applications.

Direct capitalization converts or “capitalizes” the expected level of potential net income into a market value based assessment using an overall capitalization rate. The conversion factor or capitalization rate is a reflection of all of the investor’s relative and comparative feelings and aspirations about the property in light of the investment characteristics offered by the asset and in comparison to other investment opportunities on the market.

In its most basic form, the direct capitalization method is an elementary mathematical ratio involving the estimation of typical net operating income (NOI), as of the base date, which is then capitalized into value to produce a market value based assessment.

The Direct Capitalization Method

$$\text{Market Value} = \frac{\text{Net Annual Operating Income}}{\text{Capitalization Rate}} \quad V = \frac{\text{NOI}}{R}$$

For example

$$\begin{aligned} \text{NOI} &= \$100,000 \\ \text{Capitalization Rate (R)} &= 10\% \\ \text{Market Value} &= \$100,000 \div 0.10 = \$1,000,000 \end{aligned}$$

Although there are other methods of converting expected future income into an estimate of value (e.g. discounted cash flow), the direct capitalization method lends itself to mass appraisal applications. It is possible to develop market value based assessments under this formula through proper evaluation of the potential net income and through the selection of an appropriate capitalization rate.

In establishing market value based assessments using the income approach, the objective is to evaluate the typical income generated by the real estate. For warehouses, this process involves determining the net operating income for the space. Establishing net operating income may involve analysis of both income and expenses, as there are a number of different types of leases ranging from net leases to gross leases. Where there is insufficient lease data, another approach should be used.

4.2 Income Approach Analysis

Using Market Rents

In determining potential income, the assessor is not bound by the contractual rent between the landlord and the tenant. Market rents should be used to form the basis of valuation as opposed to actual rents because actual rents may reflect what market rents were at the time a given lease was negotiated (before the base date). Therefore, in order to capture the fee simple value of the real estate as of a particular date, typical market rents that reflect the market conditions as of the base date should be employed.

Fee Simple Interest

For assessment purposes, the market value of a property is its fee simple value. Fee simple estate is defined (*The Appraisal of Real Estate, 3rd Canadian Edition, 2010*) as “absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the four powers of government: taxation, expropriation, police power, and escheat.” A fee simple title is the ultimate ownership estate in real property and reflects all rights, title and interests in the property.

Leasehold Interests

Leasehold interests are created in a property where tenants pay less than the market rent. Such tenants could conceivably sublet their space for higher rents and enjoy some of the value of the property. To obtain a proper market value under these circumstances it is necessary to value interests of both the property owner and the tenants.

Following this line of thought, if all warehouse space is valued on the basis of market rents, the expected potential income represents both the income collected by the owner and the fee simple estate in the property.

Analysing Market Rents for Warehouse Buildings

The assessment valuation procedure for warehouse buildings relies upon the derivation of typical net rent for the typical leased space in a building and the application of these appropriate net rental rates to each space type to derive the potential net income of the property. The essential task in this procedure is to determine the typical rent commanded by the market for the space as of the base date.

This task requires two steps:

- Determine the types and amount of space in the warehouse building; and
- Determine the market rents for that space.

Establishing Net Market Rents

Rents and expenses are typically determined on the basis of rents per square foot.

Lease arrangements for warehouse space can vary from net to gross; they can include charges for the handling of goods and management of the property or the lessee can be fully in charge of all property operations. Because lease arrangements vary so much, financial statements and lease arrangements must be analysed in the determination of rent.

Net Leases

Where leases are net (tenant pays all operating expenses including property taxes), rental rates reflect the net market rent at the time the lease was signed.

Gross Leases

Where the lease rate includes some operating charges (for example, landlord pays taxes or operating expenses), the effective operating charges should be deducted from the lease payment to obtain the net market rent, so that all rents are converted to a common comparable basis.

Example of Net Lease Calculation from Gross Lease Rates

Gross Lease Rate	\$7.20	per square foot
- Heat / utilities	-0.40	
- Admin & mgmt.	-0.25	
- Other operating	-0.10	
- Taxes	-1.10	
Net Lease Rate	\$5.35	per square foot

Leases Including Handling Charges or Other Fees

Any lease that stipulates rent for purposes other than rental of the real estate should be adjusted to reflect the net market rent for fee simple real estate. For example, a lease may include a payment for the internal movement and management of goods (in effect, the tenant simply parks a truck at the door and the warehouse owner handles the storage and sorting of goods). To establish the net market rent in this situation the handling and management fees should be determined and deducted from the lease payment.

Establishing Typical Market Rents for a Class of Warehouses

For mass appraisal purposes, typical net market rent can be established by analysing the net market rents that reflect the market conditions as of the base date for a number of similar properties, i.e., warehouses within one class.

4.3 Steps in the Income Approach

Estimation of Potential Gross Income (PGI)

The estimation of the potential gross income (PGI) is derived by valuing all leasable volume or areas in the warehouse and multiplying this value by the market rent for that space.

$$\text{All Areas} \times \text{Market Rent for Space} = \text{PGI}$$

Determine Effective Gross Income (EGI)

Effective gross income (EGI) is equal to PGI less the typical vacancy and collection loss. Vacancy and collection loss allowances are generally expressed as a percentage of gross income.

Vacancies

Vacancies reflect the amount of space that is typically vacant in a type of warehouse. All classes of warehouse do not necessarily have the same vacancy rates. (*Refer to Figure 1.*)

Collection Loss

Collection loss represents rental and other payments that tenants owe but do not pay. In this valuation approach, deductions for collection loss are considered part of the allowance given for typical vacancy rates.

$\text{EGI} = \text{PGI} - \text{Vacancy and Collection Loss}$
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Figure 1: Warehouse Valuation Parameters Example

Parameter (areas in 1,000 cubic feet)	Storage				Distribution		Transit		Mini
	<500	500 - 1,000	1001 - 2,500	>2,500	<1,000	≥1,000	<500	≥500	>500
Typical rent per cubic foot	\$0.175	\$0.155	\$0.147	\$0.135	\$0.171	\$0.141	\$0.193	\$0.167	\$0.216
Vacancy Allowance	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.5%	8.5%
Unrecovered Operating Expense	7.0%	7.0%	7.0%	7.0%	7.5%	7.5%	7.0%	7.5%	8.5%
Capitalization Rates	10.0%	9.0%	9.0%	8.5%	9.0%	9.0%	9.0%	9.5%	11.0%

Establish Net Operating Income (NOI)

The operating expenses that are not recovered are deducted from the effective gross income (EGI) to obtain the net operating income (NOI) from the property.

Even on a net rental basis there are unrecovered operating expenses, i.e., expenses, not paid for under the operating agreements that must be covered by the owner. The effective gross income must be reduced by the total amount of these unrecovered expenses to determine the net operating income received by the owner.

Unrecovered Operating Expenses

Unrecovered operating expenses is the term used in this Handbook to refer to the total of the operating expenses that are not recovered from the tenants. This includes non-recoverable operating expenses and vacant space shortfall.

Non-Recoverable Operating Expenses (typically not included in a lease)

The non-recoverable operating expenses that are typically not recovered from tenants under the terms of a lease are as follows:

- Legal and audit fees
- Structural repairs and capital repairs that are outside standard maintenance and repair work (e.g., roof and wall repairs and parking lot resurfacing). In the general operation of a warehouse, these types of expenses do not normally occur every year.

- Advertising and promotion – This only includes only advertisements by the management in the operation of the warehouse, for example, advertising to fill vacant space.
- Leasing commissions - In times of high vacancies and when the building is first being leased up, leasing commissions, even though amortized over the term of the lease for which they are incurred, can have a large effect on the net income generated for the property. Leasing commissions should be taken into account when establishing the net effective rent paid by a tenant, but if they have not been properly accounted for in the determination of rent, they form part of the deduction for unrecovered operating expenses.

Vacant Space Shortfall

Expenses related to the cost of carrying vacant space may not be chargeable to other tenants under typical lease arrangements. When space becomes vacant, the owner of the warehouse carries the operating costs of that space. These costs include such things as heating and security associated with the unoccupied space, as well as some operating expenses and realty tax payments that would otherwise have been made by a tenant. The expense represents a shortfall to the owner and, therefore, a deduction from the amount of income received from the warehouse. In assessing the warehouse, the vacant space expense shortfall should be based on typical vacancy levels; that is, the same vacancy factor that is used to determine EGI.

Studies completed as part of the warehouse valuation parameters indicate the typical amount of costs to be deducted due to vacant space shortfall.

$\text{Vacant Space Shortfall} = \text{Typical Vacant Space} \times \text{Vacant Space Operating Cost Per ft}^2$
--

Determination of Net Operating Income

$\text{NOI} = \text{EGI} - \text{Unrecovered Expense}$
--

The objective of this valuation process is to determine the annual net operating income (NOI). When making deductions for typical unrecovered operating expenses from the EGI, the assessor may annualize expenses such as structural and other extraordinary repairs over a reasonable period of years. By deducting the annualized portion of these expenses from the EGI provides a more realistic picture of the NOI and a foundation for a more stabilized market value based assessment for the warehouse. (*Refer to Figure 2.*)

Figure 2: Net Operating Income Calculation Example

Procedure	Area SF	Rate	Amount
1. Establish PGI with typical net rent	50,000	\$5.35	\$267,500
2. Deduct typical vacancy		5.0%	- \$13,375
3. Establish EGI			\$254,125
4. Deduct typical unrecovered operating expense		9.0%	- \$22,871
5. Net Operating Income			\$231,254

Capitalize the Net Operating Income into Value

The value of the rental income stream is determined by capitalizing the net operating income.

$$\text{Value} = \text{Net Operating Income} \div \text{Capitalization Rate}$$

Establishing Capitalization Rates

Sales of Warehouse Buildings – Recommended Approach

Turning the equation in the income approach around produces the appropriate formula for establishing capitalization rates:

$$\text{Capitalization Rate} = \text{Net Operating Income} \div \text{Value (Sale Price)}$$

In the same manner that income and rents are analysed for property valuation purposes, the income and other data should be analysed for warehouse properties that have sold as of the base date in order to establish the capitalization rates to be applied to warehouse buildings.

Other Approaches

If there is insufficient market sales evidence to establish capitalization rates, there are other possible ways such as mortgage-equity or band of investments to derive rates. These other approaches are not suitable for use in mass appraisal valuations in Saskatchewan.

Other Sources

Published capitalization rate studies and similar reports may be used in some markets as a general check on the rates determined by the assessor.

Selection of a Capitalization Rate

Selection of an appropriate capitalization rate is essential to the estimation of an equitable and realistic value for a property. The selection task starts with an analysis of the capitalization rates demonstrated in the sales of similar warehouse properties.

The following comments are guidelines for selecting an appropriate capitalization rate.

A number of factors can affect the capitalization rate to be applied. In general, favorable conditions may lower the capitalization rate and raise the value; negative conditions may raise the capitalization rate and lower the value. Some of the issues to consider when establishing a capitalization rate are:

- Competition, and expected changes in competition,
- Location – access by roads, rail, etc.,
- Age and condition of the property,
- Design of the property, and
- Expansion capabilities.

After a review of the available information, appropriate statistical measures (median, mean, and range, etc.) can be determined for capitalization rates for each type of warehouse building. From this the typical capitalization rates can be determined for the group of properties being valued.

Effective Tax Rate

In some income valuation procedures, the capitalization rate is adjusted for taxation considerations. However, in the examples used in this valuation guide this adjustment is not required because net incomes are being used and taxes have been deducted as an expense.

4.4 Add / Deduct Other Values

There may be certain properties where the entire value of the property is not completely captured by the foregoing application of a given valuation approach. In these situations a lump sum adjustment may be required. For example, a property may have surplus or excess land which is not developed due to current market conditions. This land may be valued separately and added to the market value based assessment for the entire property. A similar lump sum adjustment may also be applied for improvements if warranted.

4.5 Market Value Based Assessment of Property using the Income Approach

When using the income approach, a market value based assessment is determined by establishing the typical net operating income generated through the foregoing analysis and applying the appropriate typical capitalization rate to this. Then if required, any additional value is added to this total to determine an overall market value based assessment for the property.

An example of a warehouse building valuation using the income approach is presented in *Figure 3 – Warehouse Income Analysis Example*.

Figure 3: Warehouse Income Analysis Example

Address		Base Date	
Assessment Roll #		Class	Mega-Whse
Type of Space	Rentable Area in sf	Net Market Rent per sf	Rent - Total
Warehouse	265,000	\$3.50	\$ 927,500
Cold Storage	78,800	\$4.00	\$ 315,200
Basement	10,000	\$1.00	\$ 10,000
Other	250		\$ 0
Operating Expense Recoveries			
Other Income			
Potential Gross Income			\$1,252,700
Valuation Parameters		Comments	
Other Net Income			
Other Value			
Vacancy Rate %	4.0%		
Unrecovered Operating expense %	6.00%		
Capitalization rate %	11.00%		
Effective Gross Income			
Potential gross income		\$ 1,252,700	
Vacancy rate	4.0%	- \$ 50,108	
Sub-total		\$ 1,202,592	
Other net income		\$ 0	
EGI		\$ 1,202,592	
Net Operating Income			
Unrecovered expense	6.0%	\$ 72,156	
NOI		\$ 1,130,436	
Market Value			
Capitalization rate		11.00%	
Value sub-total		\$10,276,669	
Other value		\$ 0	
Market Value Based Assessment		\$10,276,000	

5.0 Sales Comparison Approach to Value

5.1 Application of the Sales Comparison Approach

The sales comparison approach to value models the behavior of the market-place by comparing a property with similar properties that have recently sold. (Refer to the Introduction Chapter for a general discussion on the Sales Comparison Approach).

In mass appraisal, the sales comparison approach is applied by developing a property valuation model that develops estimates of value, based on physical and location characteristics such as building area, age, lot dimensions, and immediate neighbourhood.

All value adjustments are derived directly from the local marketplace. A mass appraisal process results in estimates of value that are accurate in comparison to actual sales in the local market, and uniform in comparison to similar properties.

To establish market value based assessments multiple regression analysis (MRA) is a statistical technique that is commonly used in the sales comparison approach. MRA is used to analyze market (independent) variables, such as lot size, building size, building quality and location to predict the value of a single (dependent) variable, that being sale price (market value estimate). MRA is an effective tool for mass appraisal where there are adequate sales available for analysis. (Refer to the Introduction chapter for a general discussion on MRA.)

Apart from the investigation of properties and the collection of data, the key to a successful sales comparison analysis in a mass appraisal environment is to stratify or classify all the warehouse properties into common groups and allow for statistical testing (Refer to the Valuation Parameters Guide for a general discussion on statistical testing).

6.0 Cost Approach to Value

6.1 Application of the Cost Approach

Two principle tasks are involved in estimating the value of a property using the cost approach:

- 1) Valuing the land, and
- 2) Valuing the improvements.

Land value is usually established by analysing comparable market sales data.

To value the improvements:

- Estimate the cost new of the assessable improvements as of the base date.
- Deduct from the cost new value an amount that reflects all forms of physical deterioration. (Refer to the Depreciation Analysis Guide for a detailed discussion of depreciation and obsolescence.)
- Apply a market adjustment factor (MAF) that adjusts for all normal functional and external obsolescence not already accounted for in the replacement cost through physical deterioration adjustments. (Refer to the Depreciation Analysis Guide for a general discussion on the MAF.)

The resulting value will be an estimate of the contribution of the improvements to the market value based assessment of the property, depreciated for all causes.

The final sum of land value plus improvement value establishes the market value based assessment for the property.

Establishing Cost New

Cost new can be estimated from a number of sources including:

- Nationally recognized cost publications such as *Marshall Valuation Service*
- A study of actual costs (local contractors).

Actual cost information is useful in verifying the estimates generated by using a cost publication.

The cost of improvements is estimated using either the reproduction or replacement cost method. (Refer to the Depreciation Analysis Guide for a general discussion of replacement versus reproduction costs.)

In the case of common properties such as warehouses that are reasonably similar in nature, the replacement cost approach is an acceptable and appropriate method of arriving at a market value based assessment.

If a reproduction cost analysis is used, the assessor must ensure that all forms of depreciation are considered to arrive at a market value based assessment.

6.2 Overview of the Procedure

- 1) Determine the market value based land assessment using the sales comparison approach.
- 2) Classify the warehouse buildings into homogeneous groups.
- 3) Estimate the replacement cost new of improvements.
- 4) Determine normal age-related depreciation and if present, any typical functional and external obsolescence. Deduct from cost new.
- 5) Determine market adjustment factor for the comparable buildings and structures.
- 6) Add / deduct other appropriate values, if required to determine a market value based assessment of the improvements.
- 7) Add the market value based assessment of land to the market value based assessment of the improvements to determine a market value based assessment of the property.
- 8) Test results.

6.3 Establishing Land Values

The cost approach requires valuation of the land along with analysis of building values. Land is typically valued using the sales comparison approach.

Preferably, the comparable land sales will be of sites having approximately the same area with similar zoning and situated in a comparable location.

Land values can be established on the basis of dollar(s) per square foot or dollar(s) per acre.

Adjustments to value may have to be made for the following points of comparison:

- Location;
- Size of site;
- Zoning;
- Topography;
- Soil conditions; and
- Date of sale.

6.4 Estimating Replacement Cost New

Since warehouses are usually not complex properties in terms of construction, the cost new should be evaluated on the basis of a replacement cost analysis. The replacement model of a warehouse is based on the square foot area, volume, size, floor height, quality of offices, and other pertinent physical characteristics.

Cost of Warehouse

The *Marshall Valuation Service*, for example, provides two methods to determine cost new:

- The calculator method: summary approach providing average base costs for typical building plus refinements so that the base costs can be modified to fit buildings different from the standard description.
- The segregated method: more detailed cost analysis by building component, suitable for complex properties.

Either the calculator or segregated cost approach can be used. The example provided in this valuation guide is based on a calculator method. (*Refer to Figure 4 Warehouse Valuation Cost Summary Example.*)

The costs so developed would include the value of all assessable items typically associated with a warehouse operation.

The following are common additions and rate adjustments:

Additions:

- Heating, ventilation and air conditioning,
- Sprinkler,
- Floor (truck height, loading), and
- Elevators.

Rate Adjustments:

- Floor area/perimeter multiplier,
- Height multiplier,
- Required multipliers.

Cost of Other Improvements

Other improvements include such things as mezzanines, offices and gate houses. These items are classified and costed according to their quality. Costs per square foot or cubic foot (or linear foot) can be found in cost publications.

Figure 4: Warehouse Valuation Cost Summary Example

Address		Base Date		Warehouse area sq.		389,200
Municipality		Local Cost Multiplier (LCM) X		Volume (Ht. 19.64)		7,643,400
Assessment Roll #		Current Cost Multiplier (CCM)		Type / Class		Mega-Whse

Replacement Cost Analysis															
Item	Units in square feet	Base Rate	HVAC Addn	Sprkler Addn	Misc. Addn	Total Rate	Area Mltpler	Height Mltpler	LCM X CCM	Final Rate	Costs New	Effective Age	Life Expcty.	Dpn %	Costs New less Dpn
Warehouse	265,000	\$20.96	\$2.00	\$1.00		\$23.96	0.859	1.181	1.2416	\$30.18	\$7,997,700	1966	50	43%	\$4,558,689
Cold Storage	78,800	\$51.09				\$51.09	0.859	1.181	1.2416	\$64.35	\$5,070,780	1966	50	43%	\$2,890,345
Basement	10,000	\$17.38	\$2.00	\$1.00		\$20.38	0.859	1.000	1.2416	\$21.74	\$217,400	1976	50	23%	\$167,398
Other	0					\$0.00	0.859	1.000	1.2416	\$0.00	\$0			0%	\$0
Gate House	250	\$62.00				\$62.00	1.000	1.000	1.2416	\$76.98	\$19,245	1966	40	68%	\$6,158
Garage	0					\$0.00	1.000	1.000	1.2416	\$0.00	\$0			0%	\$0
Other	0					\$0.00	1.000	1.000	1.2416	\$0.00	\$0			0%	\$0
Elevator	1	\$35,000				\$35,000			1.2416	\$43,456	\$43,500	1975	40	43%	\$24,795
Scale	1	\$18,000				\$18,000			1.2416	\$22,349	\$22,300	1982	30	46%	\$12,042
Pavement	190,000	\$1.50				\$1.50			1.2416	\$1.86	\$353,900		yard	50%	\$176,950
Fence (linear)	5,000	\$8.10				\$8.10			1.2416	\$10.06	\$50,300		yard	50%	\$25,150
Other Yard	0					\$0.00				\$0	\$0		yard	50%	\$0
Total											\$13,775,125			42.9%	\$7,861,527

Obsolescence Note			
There does not appear to be any abnormal depreciation or obsolescence.		Less Obsolescence% (see note)	0.0%
Value per square foot is within the range of the market sales evidence.		Value of Improvements	\$7,861,527

Land Value	
Site Area	978,300
Value/ sq. foot	\$ 1.45
Land Value	\$ 1,418,535

Value Summary	
Land Value	\$1,418,535
Building Value	\$7,861,527
Market Value Based Assessment	\$9,280,000

6.5 Deduct Depreciation and Obsolescence

Depreciation due to age reflects the physical deterioration of the property over time and the normal decline in value as the functionality of a property also declines. Such depreciation is usually expressed as a percentage of cost new. Obsolescence reflects the “abnormal” depreciation that arises in some properties due to functional and/or externally generated economic problems.

Deduct from the cost new value an amount that reflects all forms of depreciation. (See the Depreciation Analysis Guide for a detailed discussion of depreciation and obsolescence.)

Market Adjustment Factor (MAF)

Market adjustment factors are often required to adjust values obtained from the cost approach. This adjustment is developed to ensure that the estimated values are consistent with the overall market level of value as of the legislated base date. These adjustments should be applied by type of property and area based on sales ratio studies or other market analyses. (Refer to the Depreciation Analysis Guide for a general discussion on the MAF).

6.6 Add / Deduct Other Values

There may be certain properties where the entire value of the property is not completely captured by the foregoing application of a given valuation approach. In these situations a lump sum adjustment may be required. For example, a property may have surplus or excess land which is not developed due to current market conditions. This land may be valued separately and added to the market value based assessment for the entire property. A similar lump sum adjustment may also be applied for improvements if warranted.

6.7 Market Value Based Assessment of Property using the Cost Approach

When using the cost approach the market value based assessment of improvements is the product of subtracting depreciation from cost new. The market value based assessment of the land is added to this figure to determine the total market value based assessment of the property.

7.0 Validation of Results

The strength of an assessment system rests on two tenets: (1) its ability to produce appropriate market value based assessments, and, (2) its treatment of similar properties in a fair and consistent manner.

To accomplish these ends, the valuation process reflects the views and methods used in the marketplace. The process is applicable to all properties.

There are two areas where the quality of the results can be ensured quickly and efficiently:

- 1) Valuation parameters; and
- 2) Check against sales values.

Valuation Parameters

The assessor's valuation system has valuation parameters that have been researched, collected and analysed by local assessors. Appropriate statistical measures (median, mean, range, etc.) can be determined for each valuation parameter. When the assessor applies these valuation parameters to all similar properties, then the market value based assessments will be fair and consistent.

Check against Sales Values

To ensure that the market value based assessments developed are in line with the local market, the assessment values will typically be checked against any sales of similar properties that took place. Such sales also have inferences for values of similar properties.

8.0 Warehouse Valuation Example

The following two pages present a hypothetical example of a market value based assessment analysis of a warehouse.

Figure 5: Warehouse Data Entry Example

Example of typical pertinent physical and descriptive data about the property.

Figure 6: Warehouse Property Valuation Summary Example

Example of summary data that would enable the assessor to calculate the appropriate market value based assessment for the property.

Figure 5: Warehouse Data Entry Example

Address										
Company Name										
Municipality										
Assessment Roll #										
Occupancy Code	Area in sq. feet	Flr. Ht: feet	# Flrs.	Volume in cubic feet	Dimensions	Perimeter feet	Build Date	Occupancy Type	Const. Class	Const. Quality
Warehouse	265,000	23.0	1.0	6,095,000	435 x 610	1,596	1974	Storage	S	Average
Cold Storage	78,800	18.0	1.0	1,418,400	150 x 525	1,350	1977	Cold Strg	C	Good
Basement	10,000	13.0	1.0	130,000	50 x 200	500	1974	Standard	C	Average
Other				0						

Base Date:	
Type / Class:	Mega-Whse
Measurements in:	feet

Other Bldg										
Gate House	250	10.0		2,500			1982			Good
Garage				0						
Other				0						

Yard		Comments
Elevator	1	Freight elevators
Scale	1	
Pavement	190,000	Paved truck parking area
Fence (linear)	5,000	
Other Yard		

Land	
Site area: square feet	978,300
Coverage Ratio	36.2%
Value per square	\$1.45

Inspection Notes	
Inspection date	Sept. 12, 1996
Bldg. construction	Steel frame, metal and brick walls
Office/ construction/ quality	Drywall partitions, carpeting, average, 9.1% of total space
Floor height/ Loading	On grade, standard loading, site excavated for truck dock height
Heating/ cooling	Heating and ventilation - moderate weather, A/C in office
Sprinklers	Wet system throughout warehouse & office, none in cold storage
Docking doors	Sealed doors with levellers
Extra features - yard	Large paved apron & scale
Condition	Good
Comment on use/ vacancy	Close to full at inspection
Internal goods movement	Forklifts
Comment on access	Close to hwy. 17, rail siding - used intermittently
Comment on location	Good - serves a wide area

Figure 6: Warehouse Property Valuation Summary Example

Address		Base date	
Municipality		Class	Mega-Whse
Assessment Roll #			

Description	
Total Area in square feet	353,800
Warehouse volume	7,643,400

Land / bldg ratio	36.2%
Year built	1974
Condition	Good

Value by Sales Comparison Approach		
Value per sq. Feet	\$30.13	\$10,660,000
Value per cubic feet	\$1.42	\$10,853,600
Value Estimate (by sq. ft.)		\$10,853,600

Value Summary by Income Approach		
Gross potential income		\$1,252,700
Vacancy allowance	4.0%	(\$50,108)
Other income		\$0
Effective gross income		\$1,202,592
Unrecovered operating expense	6.0%	(\$72,156)
Net operating income		\$1,130,436
Overall capitalization rate		11.00%
Value Estimate		\$10,276,000

Value Summary by Cost Approach		
Improvements cost new		\$13,775,125
Depreciation	42.9%	\$5,913,598
Obsolescence	0.0%	\$0
Improvement market value		\$7,861,527
Land value		\$1,418,535
Value Estimate		\$9,280,000

Market Value Based Assessment (Income Approach)	\$10,276,000
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9.0 Appendices

A. Request for Information Form – Warehouse Example

As part of the ongoing assessment process, certain income and expense information is required from you pertaining to the property identified as:

Building Name	
Address	
City	
Assessment Roll #	

Any information received will be treated in a confidential manner.
Failure to provide information has potential consequences.

Information Required - If building leased

Tenant Information

Tenant	Leased Area	Clear Height	Volume	Lease Start Date	Term / Years	Lease Amount per sf.

Income and Expense Information

- * 20__ Income and Expense Statement
- * 20__ Income and Expense Statement

Containing the following:

- Rental Income Totals (all forms of rent)
- Other Income
- Expense Recoveries
- Tax Recoveries
- Other Recoveries
- Operating Expense Total
- Property Taxes

Vacancy Rate

- * 20__ Vacancy Rate
- * 20__ Vacancy Rate

Information Format

Information can be submitted in either electronic (by computer disk), or paper format, or by filling in the enclosed forms.

B. Income and Expense – Request Form Example

THE INFORMATION REQUESTED ON THIS FORM CAN BE SENT IN YOUR OWN FORMAT (HARD COPY)

THIS FORM TO BE FILLED OUT IN CASES WHERE INCOME AND EXPENSE INFORMATION IS OTHERWISE NOT AVAILABLE

Building Name:
Address:

RENTAL INCOME	20	20
RENTAL INCOME		
OTHER INCOME		
TOTAL RENT		

EXPENSE RECOVERIES		
RECOVERIES - OTHER		
RECOVERIES - PROPERTY TAXES		
MISCELLANEOUS		

TOTAL INCOME		
---------------------	--	--

OPERATING EXPENSES		
INSURANCE		
OPERATING EXPENSE		
MAINTENANCE		
CLEANING		
UTILITIES		
ADMINISTRATION		
MANAGEMENT		
LEASING AND PROMOTION		
OTHER EXPENSE		
TOTAL OPERATING EXPENSE		

PROPERTY TAXES		
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TOTAL EXPENSE		
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