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CHAPTER 22

DIRECT COMPARISON (COMPARATIVE) AND COST APPROACHES OF APPRAISAL

Learning Objectives

After studying this chapter a student should be able to:

- ☑ Describe the basis of the direct comparison approach of appraisal
- ☑ Define and discuss the terms “recent” and “similar” in the context of appraisal
- ☑ Explain the effect on value of different building and lot characteristics, and conditions of the sale
- ☑ Explain how and why adjustments are made to comparable properties
- ☑ Apply the comparative approach of appraisal using the rating grid
- ☑ Give examples of properties the comparative approach is most useful in appraising
- ☑ Discuss the limitations of the comparative approach of appraisal
- ☑ Describe how the cost approach of appraisal estimates value
- ☑ Illustrate where cost does, and does not, equal market value
- ☑ Explain how the cost of constructing improvements are represented and estimated
- ☑ Discuss the different categories of depreciation and provide examples of each
- ☑ Apply the cost approach of appraisal
- ☑ Give examples of properties the cost approach is most useful in appraising
- ☑ Discuss the limitations of the cost approach of appraisal

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PURPOSE OF THE APPRAISAL

This chapter will describe the direct comparison and the cost approaches of appraisal. These approaches will be used to calculate market value where the current use of the subject property represents its highest and best use. This is the most commonly encountered appraisal problem. Real estate licensees are usually asked to estimate "the value of a property for listing purposes". While the comparative and cost approaches can be applied to numerous types of properties, the discussion in this chapter focuses on how they are used for valuing single-family homes.

DIRECT COMPARISON (COMPARATIVE) OR MARKET APPROACH

direct comparison (comparative) approach
a property valuation method that is based on the principle that the price paid for a commodity will be equal to the cost of acquiring a substitute under the same market conditions

The *direct comparison approach*, also referred to as the comparative or market data approach, is based on the principle that the price paid for a commodity will be equal to the cost of acquiring a substitute under the same market conditions. The premise is that an informed buyer will pay no more for a property than the cost of acquiring an existing property that provides the same utility. However, since no two properties are identical, adjustments must be made for any differences between comparables and the subject property.

To apply the comparative approach, the appraiser estimates the market value of the subject property (the property being appraised) using evidence of sale prices of *similar* properties (comparables) that have been sold recently. The comparative approach of appraisal is built on the premise that the market value of the subject property will be equal to the prices recently paid for similar properties.

Assume there are two identical houses that stand on adjacent lots of identical size. The owner of each house has a similar title, free from encumbrances. If one of the houses is sold for $465,000 after adequate advertising and negotiation, it would be reasonable to assume the other house would sell at the same figure, if market conditions remain unchanged. That is, the *value* of the other house would be $465,000 as well. This is an over-simplification because there is seldom a near identical house, particularly one that has just sold. It is also unrealistic to use one sale as adequate evidence of value.

Market value is determined by analyzing market transactions where the buyer and seller have no special relationship (i.e., the sale occurred at arm's length) and the properties sold are similar (or comparable) to the subject property. The main difficulty lies in finding these recent sales of similar properties and then demonstrating that the properties are comparable to the subject property.

The usefulness of this approach depends on the definition of market value used and the degree to which buyers and sellers are influenced by the sale prices at which substitute properties are available. Market value has been defined as the *expected sale price under ordinary market circumstances*. This definition is the link between sale price and market value. It has also been demonstrated that the sale prices at which alternative properties trade influence buyers and sellers in setting their ceiling and floor prices. Thus, the individual's assessment of a property's worth is also related to the sale prices of other properties.

Licensees typically employ the comparative approach in a Comparative Market Analysis (CMA). The following sections are equally applicable to the licensee's selection and analysis of comparable properties.

ANALYSIS OF MARKET TRANSACTIONS

To understand the analysis used in the comparative approach, the meaning of *the prices recently paid for similar properties* must be explained.

Search for Market Transactions

In carrying out the search for recent sales, the best source of information is the appraiser's personal knowledge. The appraiser who is associated with, or a member of, a real estate agency has an advantage because of their close contact with the current market. Multiple listings sales are useful sources of information since they usually represent open market transactions. Details can be obtained from the selling licensee.

Real estate agencies may be willing to supply information about properties they have sold. They may include enough information about the circumstances of the sales for the appraiser to determine if the conditions necessary for market value are represented by the prices. In British Columbia, information concerning each sale made by a real estate licensee must be recorded on a trade record sheet and kept on file by the licensee. The details that must be recorded are outlined in the section 84 of the *Real Estate Services Rules*. Appraisers, or

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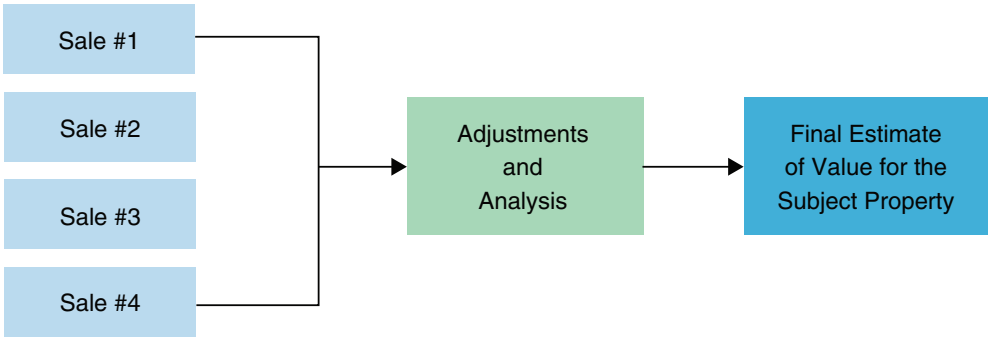
licensees completing a CMA, can also directly contact the listing agent from a property transaction. The listing agent might be willing to answer some questions and provide additional insight pertaining to the sale. This can be particularly helpful in the interpretation of outlier sales, in identifying non-arm's length transactions, and in uncovering information beyond what is available on the MLS or in trade record sheets.

Information obtained from direct contacts with market sources is preferred. Additional, less-comprehensive information can be obtained from the Land Title Office. For a small fee, any person may examine the Certificate of Title and any charges with respect to a particular property. When an application to register a Transfer of an Estate in Fee Simple is made, the applicant is required to state their estimate of the value of the property. The declarations of value are not conclusive evidence of actual value but may be an indication of value. The weakness with using values or prices obtained from the records in the Land Title Office is that the circumstances of the sale are not clear. For example, if a father sells a house to his daughter at a very low price, their relationship is not noted in the documents.

Listing prices of properties currently for sale on the market are poor evidence of market value since they are typically higher than the expected selling prices. Sometimes they are so far above market value that the eventual sale price is not near the listed price. The spread between listing and selling prices varies according to the amount of market activity; no reliable and consistent proportion of the listing price can be used as an estimate of the sales price.

Because unidentified factors may affect the prices paid, it is necessary to use as many comparables as possible. *Four comparable transactions should generally be regarded as a minimum.*



Definition of "Recent"

Demand and supply conditions in the market determine property values and prices. Since demand and supply conditions fluctuate over time, a price determined under one condition of the market may not be evidence of market value under different market conditions. Recent refers to a time period during which demand and supply conditions in the market are relatively stable or do not change. The term recent does not suggest a regular time period that can be equated with a set number of weeks, months, or years. Recent, measured in time, is likely to vary; it may be only a few weeks or it may extend to six months or one year, though seldom longer. For example, during the mid-2000's leading up to the global economic crisis, residential values in several Canadian cities were very robust; *recent* to the appraiser during this time was only a matter of months or perhaps weeks.

recent
in appraisal, that time period just prior to the date of valuation over which demand and supply conditions have remained relatively stable

For our purpose, recent is that period of time, immediately preceding the appraisal date, during which property values in the region have remained stable. One purpose of analyzing market conditions is to assist the appraiser in determining whether there have been any changes in the market between the transaction dates of the comparable sales and the date of the appraisal.

Price Indices

It is sometimes suggested that price indices can be used to adjust a non-recent sale price to the appropriate level of value at the appraisal date. However, an ideal index cannot be computed for adjusting real estate prices. An index can only be developed satisfactorily for homogeneous commodities and commodities whose values are easily determined. Real estate is not a homogeneous commodity and its value is not easily

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determined. General price indices, such as the consumer price index or the shelter price index, are irrelevant to the appraisal of one particular property since changes in the value of consumer products are not necessarily the same as changes in the value of property. The subject property will probably be a different type of property, or located in a different market, than the property used to calculate the index. In practice, the definition of recent relies on the appraiser's knowledge of the market in which they are appraising and price indices should not be used.

Definition of "Similar"

The term *similar* is more difficult to define than the term recent. In looking for evidence of market value, it is not necessary that the properties (comparables) recently sold be similar to the subject property in every respect. Similarity is only required for those factors that have a major influence on buyers and sellers, and consequently, on the sale prices they negotiate. For example, the fact that one property is painted white and another blue is not likely to affect their prices and can be ignored by the appraiser.

similar
in appraisal, two properties are similar if the actual differences between the properties will not have a material effect on their selling price

If an appraiser wants to establish similarity in all respects that are important to buyers and sellers, considerable measurement problems are involved. It would be impossible to identify all the market factors important to buyers and sellers, and assuming all factors could be identified, it would be very difficult to accurately and consistently measure their impact on sale prices.

The appraiser can overcome some difficulties by limiting their search for market evidence to the neighbourhood in which the subject property is located. If the appraiser can identify recent sales of similar properties in the same neighbourhood, all the factors important to the neighbourhood can be ignored since they should influence the sale price of the subject property in the same way they influenced the sale prices of the comparables. However, if there is limited market data within the subject neighbourhood, the appraiser faces the additional task of finding comparables from another neighbourhood that is similar in the eyes of the buyers and sellers.

Assuming the appraiser can either find enough transactions from the neighbourhood of the subject property or another neighbourhood that is considered similar, specific items of the properties to consider include the following:

- Building characteristics
- Lot characteristics
- Title and conditions of sale

Building Characteristics

Design: Similarity of design is concerned with such features as the size of the structure, number of rooms, and floor plan rather than with the architectural style. Architectural style is only important if a house is unattractive, an unpopular style, or extremely attractive in the eyes of the market. Architectural design does not appear to significantly affect purchasers' decisions.

When considering size, room number, floor plan, etc., it is clear the stock of houses represents a wide range of designs in any city. However, these numerous variations do not present as much of a problem to the appraiser as might be imagined. For example, most houses in a new subdivision are built in a similar pattern; this is also true of older residential areas. Consequently, the appraiser does not usually have to look very far from the subject property to find others of similar design.

It is important for the appraiser to establish similarity of design between the comparables and the subject property. For example, a five-room split-level home of 1,000 sq. ft. cannot be compared with a four-room bungalow of 900 sq. ft.. Likewise, a four-room bungalow of 900 sq. ft. cannot be compared with a seven-room bungalow of 1,800 sq. ft.. The appraiser must classify houses into separate design categories using judgment that has been developed through experience and observation of the market.

Construction and maintenance: The quality of construction and the standard of maintenance have an important but subtle impact on similarity. A buyer of a house in today's market is less concerned with the quality of workmanship and materials used than a buyer of a previous generation. Plywood subfloors with wall-to-wall carpet have largely replaced first-quality hardwood floors. Wall studs are placed farther apart and cheaper wall finishes are used. An appraiser should be cautious in assessing differences in the quality of construction. Due to their greater knowledge of building construction, they could easily overestimate the

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effect of such variations on the minds of buyers and sellers. For example, in the medium price range, the difference in value between a house with a cedar shake roof and one with asphalt shingles would not be as great as the difference in the cost of installing these roofs. Experience must guide the appraiser in judging the boundaries of similarity in the quality of construction.

When advising a client whether the going market price of a property is justified (i.e., advising on value to the owner), the appraiser's views on the importance of the quality of construction may affect the advice they provide. The appraiser must discover what aspects of construction their client considers important and then address these aspects, as they relate to the subject property, in their report.

Example

An appraiser has been asked to appraise a newly built single-family residence. This house is designed such that there is no bearing wall supporting the living room floor; instead, a beam that has been kiln dried and varnished provides support. Typically supporting beams are comprised of laminated 2×12's that have not been kiln dried and are instead, covered in gyproc.

If the appraiser is estimating market value, they will not make an adjustment for this difference because the market is indifferent between houses with kiln dried support beams and houses where laminated 2×12's provide support. In other words, buyers in the market will not be willing to pay more for this house than an identical house where laminated 2×12's provide the support.

Now assume the appraiser is estimating the value to a potential owner of this house who happens to be a carpenter. As a carpenter, they would recognize, and attach value to, the kiln dried support beam as they are aware there would be no chance of shrinkage. They would be willing to pay more for a house with this feature than an identical house without this feature. In this case, the appraiser will make an adjustment to the estimated value to reflect the superior materials that make up the beam.

A house should be in a state of repair normal for its type. While it would be unreasonable to expect exact similarity in standards of maintenance, it is generally possible to adjust for minor differences in standards of maintenance. In cases where the difference in levels of maintenance is extreme, the property should not be used as a comparable.

Equipment: Equipment refers to fixtures such as fitted cupboards and counters, built-in refrigerators, stoves, laundry machines, dishwashers, inter-communication systems, air conditioning, swimming pools, patios, heating systems, expensive forms of lighting, and bathroom fittings. While there are usually differences in the equipment of comparable houses, adjustments can be done quite readily.

Age: In many ways the design and quality of construction are determined by the age of the building; it is also possible that standards of maintenance and equipment reflect the age of the property. However, there are good reasons for considering age separately. Some mortgage lenders may regard older houses with disfavour and establish qualification requirements where the age of the property has an impact on the mortgage loan available. If this practice is common, and known by buyers and sellers, it would create a wide gap between the price paid for older houses and the price paid for newer houses. How buyers regard the age of a property is also important; buyers may believe it is fashionable to own a new house with modern conveniences or buyers may consider it important to buy an older house with distinct character and charm. In order to predict the effect of a building's age on its value, the appraiser must understand how the local market regards the age of a building.

Lot Characteristics

The single most important quality of real estate is location or the geographical position of the lot. Because geographical position cannot be duplicated, each lot is unique. Although it is impossible to find lots with identical locations, it is usually possible to find lots with enough characteristics common to the subject property's lot to regard them as similar for the purpose of appraisal. The principal characteristics considered here are natural features, proximity to man-made amenities, and size.

Natural features: Include the soil, elevation, contours, and other features such as streams or ravines. Not all of these items are important in every case, but they should be considered. For example, the quality of the soil may be responsible for a considerable variation in the market value, and a site with a particularly attractive view may be worth much more than a lot without a view.

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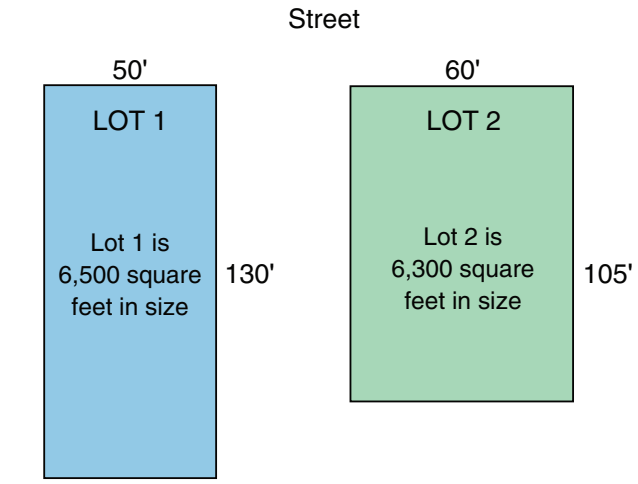
Proximity to man-made amenities: Refers to man-made locational advantages and disadvantages. For example, a residential property that is located near stores, schools, parks, transport routes, and places of employment is generally considered to have an advantageous location because of its proximity to man-made amenities. Unlike geographical position, the man-made amenities of a lot can be changed because they depend on a man-made environment.

Example

- An elementary school built near a subdivision would change the amenities available to those lots and likely increase their value.
- The construction of the Coquihalla Highway has changed the amenities of businesses located along the Fraser Canyon Highway that relied on the traffic flow. These businesses have lost their trade because of a change in man-made amenities.

Since the man-made environment changes constantly, the proximity of different lots to man-made amenities also changes. These changes are generally slow and predictable. In assessing the man-made amenities of a property, it is necessary to consider both the present conditions and those that consumers believe will exist in the future. Taking comparables from the same neighbourhood as the subject property eliminates the need to establish similarity in man-made amenities.

FIGURE 22.1: Comparison of Lot Sizes



Lot size: Is the main factor in determining the kind of building that can be erected on that lot. The amount of space around a residential building has a bearing on the market value of a house. Since most houses are built parallel to the street, the lot frontage is a more important aspect of size than either depth or total area; that is, market value usually varies more directly with frontage than with depth or area. Consider two lots located in the same neighbourhood:

Although slightly smaller, Lot 2 will probably sell for more than Lot 1 because it is wider (by 10 ft) across the front. In comparing lot sizes for residential purposes, particular emphasis should be placed on frontage and, within limits, variations in depth and area can be disregarded.

Appraiser/Licensee Relationship

The appraiser relies on comparable sales data to determine value and the licensee may use the appraiser's analysis when providing a service to either the

Buyer:

- Neighbourhood trend – values either stable or improving otherwise there may be concerns about sustainability.
- Area analysis – available amenities and suitability of area since some buyers consider location first.
- Negative attributes – disclosure before showing so no surprises and the buyer forewarned.
- Physical and functional features of the property identified that assist in the buyer qualification process – needs versus wants such as numbers of rooms or type of heating desired. Proper qualification of buyers sets a stage for a successful showing.

OR Seller:

- Explanation provided for market value versus sentimental value.
- Explanation for a realistic selling price versus an overpriced listing that could lead to the sales of other homes in the area.
- The importance of a reasonable differentiation between the asking price and selling price otherwise the seller may risk the loss of a genuine buyer.

continued next page

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OR Both:

- Environmental hazards disqualify a property from financing in most cases.
- Contamination level – modest mold due to poor ventilation is acknowledged but a red flag is raised when the mold has gone into the walls and effervescence is evident.
- Wall or block construction – the cost to cure is much greater for block construction.
- Code compliance – should a second entrance or walkout be discovered as newly created, the likelihood of its legality.
- Highest and best use is its current use if not, then further investigation required to determine if the area is going through a transition or some other anomaly exists representing a temporary land use and not sustainable.
- Zoning – residential, in an area that is predominantly single family, other forms of housing may also permitted such as multi-family developments that may adversely impact market values of single family housing.
- Quality of comparables – considerations such as the dates of sale, and location.

Title and Conditions of Sale

Similarity of title and conditions of sale between the subject property and the comparable properties must be established. Mortgages are a common cause of differences in price for residential properties. Adjustments must be made for any vendor take-back mortgages, assumed mortgages, or agreements for sale where the contract rate of interest is different from the prevailing market rate of interest.

Where mortgages or agreements for sale with contract rates below market rates are involved, the sale price will be higher to take into consideration the "cheap" financing provided by the vendor.

Example

Assume the stated sale price of a property is $1,500,000. The purchaser provides a down payment of $500,000 cash and the balance is financed by the vendor who "takes back" a mortgage for $1,000,000. If the vendor takeback mortgage is written at a contract rate of 5% when the current lending rate, or market rate, for similar mortgages is 7%, the market value of the vendor takeback will be something less than $1,000,000. If this property were being used as a comparable, the sale price of $1,500,000 would have to be adjusted downward to reflect the below-market financing. That is, the cash-equivalent price of the house is less than $1,500,000.

To establish a standard unit of comparison, property prices should be adjusted to a "cash only" basis, or their cash-equivalent prices. This is the most accurate method of comparison because different vendor take-back or assumed mortgages are likely to represent different amounts of the purchase price and they will have a variety of terms, causing their cash value to vary.

Besides comparing prices on a uniform basis, an appraiser must know the conditions of sale. Sales made where a special relationship exists between the buyer and seller should not be used for comparison.

Example

ABC Company Ltd. builds a lead refinery in the interior of BC. The company hires a contractor to build houses and then sells the houses to its employees. The price paid for these houses is probably lower than the price paid for a comparable home on the open market because of the special relationship that exists between the company and its employees.

No reference is made to similarity of real property tax assessments and public services. If the comparables are selected from within the same neighbourhood, tax assessments and public services should be the same for all comparables and the subject property. If comparables are selected from outside the neighbourhood, some adjustments may be necessary for variations in services, location, accessibility and, in some instances, local taxation. "Services" refers to electricity, gas, water, drainage, garbage collection, and roads. In some cases, variations in these items cause large differences in price. A house fronting on a gravel road would sell for more if the road was black-topped. Similarly, a house with a septic tank would sell for more if it was connected to the public sewer system instead.

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In summary, it is vital that the appraiser select similar properties that have recently sold. A three-point test should be applied to every possible comparable:

1. Is the time of the sale recent?
2. Are the lot and improvements similar?
3. Is the comparable similar in terms of title and conditions of sale?

ADJUSTMENTS FOR VALUE

The estimate of value using the comparative approach will only be as good as the analysis of the market transactions. The accuracy of the appraisal will depend on the appraiser's knowledge of the market; they should be wary of completing an appraisal in an unfamiliar market. Similarly, a licensee's interpretation of comparable sales in a CMA relies on an extensive knowledge of the local market. A licensee's analysis in a CMA typically includes qualitative analysis, as opposed to the primarily quantitative adjustments made by an appraiser. As such, a licensee is required to make assumptions, adjustments, and analyses based on their own market expertise. This further enforces the concept of working with a target market, as identified in Chapter 25: specializing in a particular market allows the licensee to gain a thorough understanding of that market's intricacies, ensuring that the licensee can service clients with an expert's authority.

While there may be recent transactions of properties substantially similar to the subject property, *minor points of difference* may influence market value. The appraiser cannot adjust the physical attributes of a property or the conditions that existed at the time a property sold, but they can make adjustments to the sale price of a property. To make a comparable property more similar to the subject property, the sale price of the comparable property can be adjusted for any physical differences between the two properties or any difference between the sale conditions.

Example

George recently purchased the most basic model of a brand-new Toyota. George's neighbour, Andy, also purchased a brand-new Toyota but he bought a model that included the following options: air-conditioning, a CD-player, a sun-roof, and a plush interior. George's car had none of these options.

George would like to appraise the value of his car to decide whether or not the purchase was a good deal. Using the market approach of appraisal, he could make a comparison of his car with Andy's car. However, their two cars are not identical physically. George cannot change the physical attributes of Andy's car but he can make adjustments to the price Andy paid to account for any physical differences between the cars.

Andy paid $15,000 while George paid $13,000. Based on installation costs and market data, George makes estimates of the value of the options included in Andy's car. If George subtracts the value of these options from the price Andy paid for his car, the result will be an adjusted sale price that can be used for a comparison.

Sale price of the Comparable (Andy's car)		$15,000
Adjustments:		
Air-conditioning	$600	
CD-player	300	
Sun-roof	800	
Interior	250	(1,950)
Adjusted sale price		$13,050

In this example, it appears George paid a fair price as the adjusted sale price of the comparable, $13,050, is very close to the price of George's car, $13,000.

One way of organizing the adjustments made to real property comparables is to use a rating grid such as the one used in the Case Study 1 of this chapter. A rating grid plots each adjustment made on the comparable properties to calculate their adjusted sale prices. The adjusted sale prices for each comparable are their actual sale prices plus or minus the adjustments needed to make the comparables more similar to the subject property.

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The adjustment to the prices paid for the comparable properties are made according to the table in Figure 22.2. It should be kept in mind that *the subject property is the standard of comparison and each comparable sale is adjusted towards it*. The subject property is not adjusted towards the comparables nor are the comparables adjusted towards each other. Each comparable is examined individually and adjusted to make it more like the subject property.

FIGURE 22.2: Table of Adjustments Made to the Comparable Property

ADJUSTMENT	SUBJECT PROPERTY	COMPARABLE PROPERTY
ADD to the Sale Price of the Comparable Property when:	a feature of the Subject Property is SUPERIOR to the Comparable Property	a feature of the Comparable Property is INFERIOR to the Subject Property
SUBTRACT from the Sale Price of the Comparable Property when:	a feature of the Subject Property is INFERIOR to the Comparable Property	a feature of the Comparable Property is SUPERIOR to the Subject Property

Features of the subject property that are superior to the comparable property (e.g., the subject property has a built-in outdoor barbecue while the comparable property does not) cause the value of the subject property to be higher than the value of the comparable property. To adjust for this difference, the value of the feature (the barbecue) is added to the sale price of the comparable property.

Features of the subject property that are inferior to the comparable property (e.g., the subject property has no landscaping while the landscaping of the comparable property is complete) cause the value of the subject property to be less than the value of the comparable property. To adjust for this difference, the value of the feature (landscaping) is subtracted from the sale price of the comparable property.

Features of the comparable property that are inferior to the subject property (e.g., the interior of the comparable property needs to be repainted while the interior of the subject property does not) cause the value of the comparable property to be less than the value of the subject property. To make the adjustment, the value of the feature (painted walls) is added to the value of the comparable property.

Features of the comparable property that are superior to the subject property (e.g., the comparable property has a fireplace while the subject property does not) cause the value of the comparable property to be higher than the value of the subject property. To account for this difference, the value of the feature (the fireplace) is subtracted from the value of the comparable property.

ALERT

Quality of Comparables: a general rule is "the fewer the adjustments, the better the comparable." You may think of the comparable's sale price as the trunk of a tree, – solid support for a market value estimate. Each adjustment is another branch from this trunk. With each additional adjustment, the branches become thinner and thinner – and eventually it is questionable if the adjusted sale price truly provides useful support for the subject's value estimate.

CASE STUDY 1

Subject Property

The subject property lot size is 60ft × 110ft. The single family dwelling includes a living room, dining room, master bedroom, bathroom, kitchen, and den on the main floor; two bedrooms and a washroom on the second floor, and an unfinished basement. Heating is by natural gas heat and an electric hot water tank. Appliances include a built-in dishwasher and a refrigerator.

Ken, the owner has requested an appraisal for sale purposes. You have found four similar comparables that have recently sold, and since they are in the same neighbourhood no adjustment for neighbourhood differences is necessary.

Comparable A. The kitchen in Comparable A has recently been remodelled while the subject property's kitchen is older. The estimated market value of this remodelled kitchen is $40,000; that is, the market is willing to pay $40,000 "extra" for Comparable A because of its remodelled kitchen. To make the comparable more like the subject property, the comparable's sale price must be decreased by $40,000 to account for the remodelled kitchen.

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The subject property has a dishwasher and built-in refrigerator while the comparable property does not. Research shows that the market will pay an extra $8,000 for these items. In other words, if the comparable had a dishwasher and built-in refrigerator, the market would have paid an extra $8,000 to buy the house. To make this property more comparable to the subject, $8,000 is added to the sale price of the comparable.

Similarly, the heating system of the subject property is superior to the heating system of this comparable property. The comparable's sale price is adjusted upward by the amount of value the market attaches to the superior heating system, $17,000.

Comparable A was sold subject to a vendor take-back mortgage. The mortgage, for $250,000, was amortized over 25 years with monthly payments and had a 5 year term. Payments were rounded to the next higher cent. The contract rate of interest on the mortgage was j_2 = 5% while market lending rates for similar mortgages were j_2 = 6%. You calculate the market value of the vendor take-back mortgage to be $239,987.75. (See Appendix 22.1 for a detailed account of the calculations.) To equate the sales price of Comparable A to its cash-equivalent price, an adjustment of $10,012 ($250,000 - $239,988) is made. Since the vendor take-back mortgage is written at a below-market interest rate, the purchaser of Comparable A has received the benefit of lower mortgage payments than they would have made at the market rate. In this respect, Comparable A is superior to the subject property and therefore this benefit (or premium) of $10,012 that the purchaser of Comparable A paid, must be subtracted from the sale price of Comparable A, as shown in the rating grid.

Comparable B. The comparable has a finished recreation room while the subject property does not. To account for this difference, the sale price of the comparable is decreased by $30,000, which is the amount of value you estimate the market adds to Comparable B because of the finished recreation room.

Comparable B requires exterior painting, does not have a dishwasher or built-in refrigerator, and has a heating system that is inferior to the subject property. Separate adjustments for all of these items are shown in the rating grid.

Comparable C. The kitchen is smaller than that of the subject property. The sale price of Comparable C is adjusted upwards by $15,000, the extra amount estimated that the market would be willing to pay for this feature. Drapes and carpets were included in the sale of Comparable C. These items are not included in the sale of the subject property; Comparable C is adjusted downwards by $7,500. Comparable C does not have a dishwasher or built-in refrigerator; an upwards adjustment of $8,000 is required.

Comparable D. Comparable D requires painting and is also adjusted because it does not have a dishwasher or built-in refrigerator. Comparable D has a patio while the subject property does not; the market value estimate of $14,000 is deducted from Comparable D's sale price.

Rating Grid				
	Comparable A	**Comparable B**	**Comparable C**	**Comparable D**
SALES PRICE	$425,000	$395,000	$385,000	$397,500
ADJUSTMENTS:				
Transactional:				
Conditions of Sale				
Building:	–$10,012			
Finished Recreation Room		–$30,000		
Small kitchen			+$15,000	
Remodelled kitchen	–$40,000			
Exterior painting required		+$5,000		+$7,000
Dishwasher and built-in refrigerator	+$8,000	+$8,000	+$8,000	+$8,000
Heating System	+$17,000	+$16,000		
Drapes and Carpets included in sale			-$7,500	
Lot:				
Patio				–$14,000
TOTAL ADJUSTMENTS	–$25,012	–$1,000	+$15,500	+$1,000
ADJUSTED SALES PRICE	$399,988	$394,000	$400,500	$398,500

Close inspection of the type of adjustment will lead to the conclusion that some comparables are more reliable than others. For example, the value of a second-hand dishwasher and refrigerator can be estimated fairly accurately. This is also true for the adjustments made for the obsolete heating system, external painting,

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and the drapes and carpets. However, it is difficult to know that a remodelled kitchen is worth exactly $40,000, a patio $14,000 and that a small kitchen requires an upward adjustment of $15,000 to the sale price of the comparable property. The costs spent give some indication of the value of an item to the person who paid for it; but another person may not place the same value on the item. For instance, a swimming pool may cost thousands of dollars to build but may not add this same dollar amount to the value of the property.

The dollar amount adjustments must be supported in the market. An experienced appraiser will be able to find comparative sale transactions that illustrate how many dollars a sundeck or a built-in air conditioning unit adds to an otherwise comparable house. Without any comparative market data, the appraiser may use the cost of installation as the basis for adjustment; but it should be understood that the amount spent on an item may often be greater than the amount this item adds to the total market value of the property.

In conclusion, if the comparables have been properly selected, the range of adjusted sale prices will not be great. Generally, the fewer the number of adjustments made to the comparables, the more accurately the comparables approximate the value of the subject property. As a rough guide, the net adjustments should not exceed 20% of the sale price of each comparable, with a possible exception for adjustments due to vendor take-back or assumed mortgages. More importantly, the value range in the net adjustments and the reliability of the final estimate of value depends on the appraiser's or, in the case of the CMA, the licensee's knowledge of the market, and the comparables selected and which will determine. In our rating grid example, the net adjustments amount to the following percentages of the sale prices:

Comparable A $\frac{\$25{,}012}{\$425{,}000} = 5.9\%$

Comparable B $\frac{\$1{,}000}{\$395{,}000} = 0.3\%$

Comparable C $\frac{\$15{,}500}{\$385{,}000} = 4.0\%$

Comparable D $\frac{\$1{,}000}{\$397{,}500} = 0.3\%$

These are considered reasonable, indicating a value in the range of $394,000 to $400,500 for the subject property.

The estimated value of the subject property should be based on the adjusted sale prices of the comparables that are *most like the subject property*. The appraiser makes their final judgment and selects the figure that seems to be the most probable selling price. This figure is usually rounded to the nearest $1,000, $10,000, or $100,000 depending on the total value of the property. In the example, the appraiser estimates the market value of the subject property, Ken's house, to be $400,000.

Although it may appear that appraisers use averaging (whether it be the mean, median or mode) to arrive at a final market value, this should not be the case. Rather the approach is to determine which of the comparables is most like the subject property and to use that as the main evidence. Occasionally appraisers eliminate the highest and lowest of the comparable figures, but there is no reason for doing this if the comparables are similar and adjustments have been made carefully.

The rating grid method should be used with care and regarded more as a device to make detailed comparisons than a device to make delicately balanced adjustments to value. Because there are limitations in using the rating grid, some experienced appraisers do not use this method and make their comparisons on an all-inclusive basis instead. Given sufficient skill and experience, the all-inclusive practice is reliable. However, for the beginning appraiser, the rating grid is helpful if used carefully.

FURTHER APPLICATIONS OF THE COMPARATIVE APPROACH

The comparative approach of appraisal is most frequently used for single detached house appraisals because there is a lot of market data available. In principle, there is no difference in the adjustment process used in the comparative approach for appraisals of residential, commercial, or industrial property. In practice, however, there may be variations in form because of the different kinds of adjustments required in each case.

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Net and Absolute Adjustments: watch for offsetting positive and negative adjustments in appraisal reports. If they cancel each other out, the comparable's net adjustment may seem smaller than the true adjustment made, ignoring positives and negatives. Consider an appraisal of a new, large west-side Vancouver house on a small lot. The comparable is a vacant waterfront property in West Vancouver sold for $2,000,000. Because the comparable has no house, the appraiser deducted $1,000,000. Because the comparable is waterfront, the appraiser added $1,000,000. Net adjustment = $0. Gross/absolute adjustment = 100%. What appears to be a perfect comparable is probably actually not comparable at all!

The application of the comparative approach to condominiums, other improved properties, and vacant lots will be examined next. The appraisal purpose will remain the same: find market value expressed as a capital sum for properties representing highest and best use.

Condominiums

A condominium is a special kind of legal interest in land that presents some unique appraisal problems. It consists of both a fee simple interest in the unit purchased, including all attributes of a fee-simple ownership, as well as a tenancy in common interest in the common areas of the development including the responsibilities of a common ownership.

Our discussion will focus on residential condominiums that account for approximately 95% of all condominiums. The comparative approach of appraisal can be applied if the market for sale or resale of condominiums is active. However, care must be taken in determining similarity.

In appraising condominiums, the term "recent" has the same meaning as discussed previously, but "similarity" must be expanded to account for the benefits and responsibilities outlined in the condominium corporation bylaws. In particular, the subject property and all comparables must have the same common facilities and common area charges, the same basic limitations on occupation and use, and the same terminal values (values on destruction).

For instance, an appraiser may find two condominium units in separate projects that have identical floor plans, are the same age, and are in the same proximate location. However, because they are condominiums, an appraiser must also check on the limitations and responsibilities established in the bylaws of the condominium corporation. The following cases illustrate how real differences in market value occur because of the responsibilities arising from the condominium status:

1. Two condominium units may be in separate projects affording quite major differences in common area amenities, e.g., tennis courts, pools, meeting halls, and parking. These amenities will have an effect on the market value.
2. Two condominium units may be in separate projects that have major, but not obvious differences in common areas. For example, one condominium project may, through the condominium corporation, own extra property that has considerable value, but is not presently in use. Conversely, another project may have liens or mortgages on the common areas that are ultimately the (proportional) responsibility of the unit owners.
3. The allocation of unit entitlement (common area charges) may vary from one project to another. In one unit the common area charges may be shared on a square footage basis, but in another project the basis of allocation may be quite different.
4. The items included in common area charges may vary from project to project. For example, one project may include heating as a common area charge while another project leaves heating to the individual unit owners.

These problems of similarity fall into one of two categories: benefits or charges. The appraiser must first ask, "Are the benefits included in the common area similar for the units used as comparables?" and then, "Is the method of allocating and financing common area charges similar for the units used as comparables?" These two additional factors of similarity must be carefully investigated when using the comparative approach for condominium appraisals.

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While the comparative approach is applied for the valuation of an individual condominium unit, the cost approach (discussed later) is not considered a reliable and cost effective method because:

- The valuation requires the site to be vacant and available, costing of all structures, landscaping and site improvements, estimation of soft costs, developer's fees and entrepreneurial profit, and only once depreciated value of the entire project is known can it be allocated to the individual unit. The fee required for the time involved to properly complete this valuation far exceeds what clients are prepared to pay.
- When valuing a single unit, the appraiser may not inspect the building's roof, heating plant, basement, parking garage, and so on. This can be a particular problem if standard appraisal forms being used are generic forms that contain checkboxes related to age or condition of the roof, age of the hot water tank, or if they call for simple overall conclusions of condition; they can be misleading, at best.

Do determine if a Reserve Fund Study has been done, and its impact on value. How sound is the building?

Other Improved Properties

The comparative approach can be applied to improved properties other than houses and condominium units. For instance, it could be used to value an apartment building or a warehouse. However, in these cases, there are typically a large number of items that are different between the comparables and, therefore, a large number of adjustments are required. Appraisers usually value these properties on the basis of their income-producing ability using another method of appraisal – the income approach.

While it is beyond the scope of this course to detail the adjustments to be made for apartment buildings and warehouses using the comparative approach, you should know that this method of appraisal can be used. Rather than using the total price paid for a similar apartment or warehouse building, these sales are usually analyzed on the basis of unit of comparison as shown in the following examples:

Example

Apartment Building	Sale Price	Number of Units	Price per Unit
Sale # 1	$3,200,000	20	$160,000
Sale # 2	$3,750,000	20	$187,500
Sale # 3	$4,000,000	24	$166,667
Sale # 4	$4,150,000	22	$188,636

The comparables indicate a range of $160,000 to $188,636 per unit for the subject property. If the appraiser thought Sale # 4 was most like the subject property that had 21 units, a price of $188,636 per unit would suggest a value of $3,961,356 for the subject property.

Warehouse Building	Sale Price	Size of Building (sq. ft.)	Price per sq. ft. of Building
Warehouse # 1	$1,800,000	13,750	$130.91
Warehouse # 2	$2,120,000	15,725	$134.82
Warehouse # 3	$2,160,000	16,000	$135.00
Warehouse # 4	$1,978,000	14,975	$132.09

The comparables indicate a range of $130.91 to $135.00 per sq. ft. for the subject property. If the subject property had 14,000 sq. ft. and was most like Warehouse #1, a price of $130.91per sq. ft. would suggest a value of $1,832,740 for the subject property.

Subdivided and Serviced Residential Lots

As discussed in the previous chapter, generally the residual technique is utilized for undeveloped land in or near urban areas possessing development potential. However, vacant but subdivided lots in a fully developed subdivision are different. These lots have been fully developed in that roads and other services have been constructed; the lots are ready for the house-builder. Subdivided and serviced lots are at their highest and best use and may be valued using the comparative approach.

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The general points of similarity affecting lots have already been described. They are: natural features, amenities available, lot size, and financing considerations. Problems in establishing similarity between lots occur because of the variety of lots avasilable. Lots differ in geographical location, size, shape, and topography.

Another problem that arises in attempting to establish similarity is whether corner lots have a greater value than interior lots. There is no definite answer to this question. There will be circumstances in which corner lots will be preferred because they may offer extra light and air. In other cases, they will not achieve higher prices because of the loss of privacy and quietness. If the typical lot frontage is narrow, corner lots have an advantage. If interior lots have what is thought to be an adequate width, the corner lots may not have an advantage. In older neighbourhoods, corner lots are often wider than interior lots and frequently have higher value. The appraiser must be guided by their knowledge of an imperfect market since there is no definite rule to follow.

Consideration must also be given to differences in the financing of lot services. Generally, current practice requires a developer to pay for all servicing costs in advance including, in some cases, an impost fee for off-site costs. Occasionally, the service costs may be financed through a local improvement tax and amortized over a number of years. Where the market discriminates between these two practices in establishing market prices, the appraiser must consider the effects on value.

SCOPE AND LIMITATIONS OF THE COMPARATIVE APPROACH

The main advantage of the comparative approach in estimating market value is that it is simple and direct. It rests on a valid principle of substitution. It represents the actions of buyers in many types of real estate transactions. The application of the comparative approach requires the appraiser to distinguish between:

1. "recent" and "not recent" sales;
2. sale prices that occur under conditions consistent with the definition of market value and those that do not; and
3. properties that, in the eyes of buyers and sellers, are "similar" and those that are not.

Thus, the appraiser must have experience and knowledge of the market in which the appraisal is being made. The number of people who have a competent knowledge of the real estate market in relation to the number of people who participate in this market is small. Real estate licensees and some investors and dealers in real estate often acquire a very comprehensive knowledge of a specific sector of the real estate market. Hence, they are very able to accurately estimate market value within their area of expertise in conditions where the comparative approach can be applied.

If the comparative approach was applicable to all types of appraisal problems, there would be relatively little content in studying the principles of appraisal. However, the comparative approach has considerable limitations which are noted below. As a result, other methods are required which call for more than a knowledge of market conditions.

The comparative approach cannot be used when there have been *insufficient market transactions* to provide evidence of market value. This situation may occur because:

1. the subject property is of an unusual kind that is sold or leased infrequently; or
2. economic conditions exist such that there are very few sales taking place under open market conditions.

The first situation is more common than the second situation because of the low turnover of real estate in general. Since many types of property sell infrequently, the necessary data for the comparative approach is not always available.

On the other hand, the comparative approach of appraisal is of little use during a time of rapidly changing market conditions. For instance, if the prices of single-family residences increase rapidly from one month to the next, it may be difficult to find comparables whose sale prices can be considered recent.

Another problem in applying the comparative approach is the difficulty in establishing similarity. This problem becomes more significant as the number of comparables diminishes. Establishing similarity for comparison is most difficult for properties owned for investment purposes (i.e., income-producing properties). The amount of net income and the degree of risk are two significant elements in the value of an investment property and vary considerably between properties. For instance, although an apartment building

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that sells for $2,400,000 yields a net income of $100,000 per annum, it does not follow that one that produces a net income of $50,000 is worth $1,200,000. The required rates of return might be different. In addition, variations in the unexpired term of existing leases may cause a difference in value. Finally, the variations in the amount of net income, period of the income, and degree of risk are usually quite large, making comparability difficult to establish.

In summary, the comparative approach is most suited to the appraisal of owner-occupied, single detached houses and condominiums. These markets are not as imperfect as other real estate markets and there is a sufficient volume of transactions in most price ranges to make the approach practicable. For other appraisal problems, such as those pertaining to income-producing property and values of leases, the comparative approach is much less reliable. Two questions test the validity of the comparative approach in any particular case:

1. Are there comparable properties?
2. Have there been enough recent sales of comparables to provide evidence of value?

The answer to both questions must be "yes" if the comparative approach is to be used with confidence. If the answer to either question is "no", an appraiser may need to use another valuation approach. Alternatively, the appraiser may have to widen expectations for comparables that may be considered recent and similar. A licensee preparing a CMA might look beyond the traditional scope of the comparative approach to establish a value range for a property. After discussing the limited property information with the client, a licensee could create a range of the property's estimated market value using comparable sales that are clearly inferior, establishing the lower end of the range, and comparable sales that are clearly superior, establishing the higher end of the range. The licensee can draw on their expertise, experience, and market knowledge to suggest where a property might fit within that range. If the range is still too great and the licensee is unable to come up with a suitable market value for the property, which might be the case in very specialized or unique properties, the licensee could introduce an alternative pricing strategy: for example, selling the property in an auction format. This approach allows potential buyers to bid on a value they feel is suitable for the property.

Note that these approaches are typically not suitable for the purposes of a formal appraisal. The licensee should discuss the limitations of valuation estimates and alternative pricing strategies with the client.

THE COMPARATIVE APPROACH AND THE COMPARATIVE MARKET ANALYSIS

Real estate licensees rely primarily on the comparative approach in the preparation of a comparative market analysis (CMA). The CMA is typically a shorter, less detailed version of an appraisal report, and involves a more qualitative approach than most appraisals. CMAs are part art, part science, but the art element plays a much larger role than in an appraisal report. The CMA is, in essence, a boiled-down analysis created to set realistic pricing and market value expectations for the seller of a property.

Appendix 22.3 provides an example of a CMA for a hypothetical condominium unit. Consider the comparable properties used in the analysis, the additional information provided, and the conclusion of the CMA. The CMA is only part of the package of information that a licensee will present to their client: the licensee must also discuss market conditions, trends, and other information with the client. These discussions are typically more informal than the formal written reports provided by an appraiser.

As the CMA in Appendix 22.3 refers to a unit within a condominium, factors beyond the individual unit must be included in the analysis. For instance, when comparing the subject unit against a unit in another condominium, the licensee must consider differences in building amenities in the analysis and interpretation. A CMA for a single family home would focus primarily on the unique characteristics of the property, but would also consider the subject property's location, neighbourhood, and proximity to schools, transportation, etc. relative to the comparable properties.

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As a Licensee...

Much is written about a licensee relying on his expertise and experience. For a new licensee, it can be difficult to know how to go about gaining the knowledge and skills needed to become an expert.

New licensees should devote time to learning as much as possible about the local market. They should explore data provided by the MLS® or the local listing service, and study current listings, past sales, and historical market trends. Licensees should analyze historical and current market statistics, and read local publications to stay abreast of policy changes, new developments, and other news that might affect the local market. New licensees can also learn by attending open houses, taking the time to walk through neighbourhoods and buildings, studying strata documents, and reviewing municipality documents like zoning and the Official Community Plan (OCP). Finally, new licensees should try to find an established licensee willing to serve as a mentor.

As a new licensee, there is clearly a lot to learn: this furthers the ongoing recommendation throughout this course to focus on a single target market. The licensee who attempts to cover multiple markets will find themselves spread too thin, and will have difficulty attaining a level of expertise in any market.

THE COST APPROACH

The assumption on which the cost approach of appraisal rests at first appears logical. The cost approach assumes:

	Site Value
+	Cost of Improvements
–	Depreciation
=	Market Value

Site value is simply the market value of the land without any improvements. The *cost of the improvements* includes all costs of construction (i.e., buildings, landscaping, fences, etc.), the builder's profit, all professional fees, and a normal developer's profit. If the improvements are not new, an allowance is made for depreciation, which is a reduction in value due to any cause, e.g., normal wear and tear, necessary repairs, or simply the market's preference for newer improvements.

The reliability of the cost approach depends on the validity of the assumption that cost and value are equal; there are circumstances in which such an assumption is not justified.

Relationship Between Cost and Value

Let us first consider applying the cost approach to new buildings to eliminate any need for an estimate of depreciation. As long as the new buildings represent highest and best use, one would expect cost and value to be equal.

If the cost of constructing a building is greater than what it will be worth on completion, new development will cease until building values rise. Alternatively, if it costs less to construct a building than what the building will be worth on completion, there will be an increase in new development. This increase in new development will cause construction costs to rise until a point is reached where the cost of constructing a building is equal to its value on completion (assuming no artificial restrictions on new construction exist). This concept is an over-simplification of the way in which the market works but it illustrates the basics.

However, there are exceptions to this generalization. For example, if a large hotel was built in a remote part of the Arctic Circle, the cost would not be recovered if the owner tried to sell it. The reason is obvious; the building is not in that location because the cost spent is not justified by market demand (i.e., the structure is not the highest and best use of the land).

Another example includes houses constructed by eccentric owners in the form of mock medieval castles, Chinese pagodas, or Greek temples. These types of houses are expensive to build and are not very practical to live in. When offered for sale, there are usually not enough prospective buyers to bid the price up to a point where the price equals the costs of construction plus the site value.

These unusual cases indicate that cost and value are likely to be equal only when the cost represents the kind of expenditure that conforms to the wishes and tastes of the market. In other words, the building must represent the highest and best use of the site. Under any other circumstances, the value will not likely equal the cost.

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DETERMINING MARKET VALUE BY THE COST APPROACH

There are two basic components in the cost approach:

1. the site value; and
2. the costs of the improvements.

The appraisal process consists of estimating the amount of value attributable to each component.

Site Value

Site value represents the market value of the land. Site value is usually estimated using the comparative approach of appraisal. Land cannot be manufactured so it is impossible to find the "cost of production" of a site in the sense of a manufacturing cost. Frequently, work is carried out on raw land to make it suitable for use. For example, it may have to be cleared of timber, levelled, and drained; these costs do not represent raw site value although they may form part of the market value of a lot based on the comparative approach.

site value
the market value of the land

Cost of Improvements

Cost of improvements generally includes the costs of planning, designing, and construction of the buildings. Although these are not the only improvements that may be done, the following discussion focuses on building costs rather than other kinds of improvement costs.

historic cost
the cost incurred when the building was erected

current cost
the cost of the same construction at the date of appraisal

reproduction cost
the cost of providing an exact replica of the subject property

replacement cost
the cost of building a modern equivalent of the subject property

Historic Versus Current Costs. In considering the costs of construction, the appraiser must decide whether to use historic or current costs. Historic cost means the cost incurred when the building was erected, and current cost means the cost of doing the same construction at the date of the appraisal.

Historic cost is not relevant. For one reason, the value of money changes over a period of time and, apart from changes in the purchasing power of the dollar, construction costs also vary. Thus, the construction cost of a house built 25 years ago is not relevant to the values of today. Accordingly, the current cost of construction is always used in the cost approach of appraisal.

Reproduction Versus Replacement Cost. What kind of building is to be priced? Immediate reaction might suggest that the building to be valued is exactly as it exists at the date of the valuation (a duplicate). However, this definition does not apply when appraising older properties. The appraiser must decide to use either reproduction cost or replacement cost in estimating the construction cost of the building. Reproduction cost is the cost of providing an exact replica of the subject property. Replacement cost is the cost of providing a building that would represent the modern equivalent of the house to be appraised in determining the construction cost of a building.

The objection to using reproduction cost is that it may be impossible to provide an identical reproduction of an older building. Often the materials and equipment used years ago are not available today. If they are available, the specialized labour required may no longer exist. In addition to the changes in construction techniques, designs and tastes have also changed. Therefore, an exact replica might not only cost more to construct than its contemporary equivalent, but be worth less when finished. For example, years ago every room in a house had its own door. Modern houses generally have less doors and more open spaces. A house with separate doors for each room will cost more to build than one with fewer doors but may be worth less when completed since many buyers would look on this feature as outdated and inconvenient.

The appraiser must determine the cost of constructing a building that provides the same amenity, convenience and shelter. The theory underlying the cost approach of appraisal is that the price any purchaser will pay is the cost of providing alternative accommodation with the same utility.

From the discussion, it is clear that *current costs on a replacement basis* should be used to represent the costs of construction. It is now necessary to show how the cost data are obtained.

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Sources of Cost Data

The most frequently used method of costing is the unit cost method in which the cost of improvements is reduced to some convenient unit of measurement such as the cost per square foot or cubic foot of accommodation. The unit cost per square foot is calculated by dividing the total cost of building a house by its area, measured in square feet. If cost per cubic foot is required, total cost will be divided by the volume of the house instead of its area. In practice, the square foot unit is typically used for residential buildings, whereas the cubic foot basis is used for industrial space.

Cost estimates for a number of categories are obtained from houses typical of the properties in an area. Known cost figures relating to the construction of these "sample houses" are obtained, and the unit cost is established for each type of house using the costs appropriate for a building of average efficiency. Sometimes the appraiser may obtain this cost information from a quantity surveyor's report similar to the "Construction Cost of a Single Family Residence" in Appendix 22.2. It must be emphasized that cost data are generally applicable only to houses that fit in the appropriate category. These data do not provide the range and detail of construction pricing the appraiser requires for buildings of different design and quality.

In the appraisal, the subject property is compared with the sample property that it most closely resembles. The unit price for a house in the appropriate category is applied to the area (or volume) of the subject property. It will usually be necessary to make a final adjustment regarding small differences between the house to be valued and the sample.

Example

Appendix 22.2 provides a sample of unit costs for a 1,280 sq. ft. residence in St. John's, NL. The total unit cost per sq. ft. is calculated to be $156.60. If an appraiser is estimating the value of the improvements for a similar property where the residence is 1,900 sq. ft., they could use the unit cost method as follows:

Total cost = cost per sq. ft. × number of sq. ft.
= $156.60 × 1,900
= $297,540

This estimate may require further adjustments.

DEPRECIATION

When a property was built some years prior to the date of the appraisal, replacement cost at current prices requires adjustment to reflect the fact that the building is no longer new. The adjustment required is a deduction for depreciation.

Depreciation can be either roughly estimated based on the relationship between building age and life or it can be more finely detailed with the breakdown method.

Age-Life Method

Age-life methods rely on the relationship between a building's age and its expected life to estimate how much value has been lost over time. They present a quick and easy means to roughly estimate a building's depreciation over time and are the most commonly applied methods in appraisal reports.

The age-life method calculates a property's overall depreciation rate as the building's effective age divided by its economic life. A depreciation rate per year can also be calculated by dividing this percentage rate by the effective age.

Age-Life Method
Percentage Depreciation = Effective Age ÷ Economic Life

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Example

- Replacement cost new of subject house: $750,000
- Actual age of 15 years
- Effective age of 10 years (with recent renovation)
- Economic life of 50 years
- Depreciation is estimated at 10/50 or 20% (or 2% per year)
- Age-life depreciation estimate: $750,000 × 20% = $150,000
- Depreciated replacement cost: $750,000 – $150,000 = $600,000

Note that effective age is used in this calculation, not the actual age. The effective age reflects the appraiser's estimate of the subject's condition relative to market norms. Using effective age in the age-life ratio avoids over-estimating depreciation: e.g., if the 15 year actual age were used here instead, the depreciation is 30%, not 20% – this would not accurately account for the contribution of refurbishment towards extending the subject's economic life.

Market extraction is a variation of age-life that is more directly market-focused. The subject's depreciation is estimated by examining the value loss over time seen in recent sale comparables. First, the improvement value is isolated by appraising the land's market value and subtracting this from the sale price. The remainder is the contribution of the aged improvements. Second, comparing this to the replacement cost new will indicate how much the building has depreciated over time. Third, examining this depreciation figure against the building's age provides an estimate of the depreciation rate per year. Analyzing this same relationship across numerous sale comparables provides strong market support for the value loss over time due to depreciation.

Example

Comparable 1 sold for $350,000. The land value is estimated at $100,000. Therefore, the indicated value of the house alone is $250,000. The cost to build the house new today is estimated at $300,000. This means it has depreciated $50,000 over its 10 year life. The $50,000 depreciation is 16.7% of its cost new. Therefore, the annual rate of depreciation indicated by this sale is 16.7% ÷ 10 = 1.67% per year. This same market extraction technique is then applied to several properties with indicated depreciation rates that range from 1.5% to 2% per year. The appraiser concludes that the average of these, 1.75%, is the market-supported annual depreciation rate for the subject house. Given the subject is 15 years old at the date of appraisal, then it is reasonable to conclude that it has depreciated by 26% (1.75% per year × 15 years).

Breakdown Method

The breakdown method is the most detailed and comprehensive way to measure depreciation. This method details the specific value losses in three categories: physical, functional, and external. The depreciation can be further broken down into *curable* and *incurable* categories. A curable depreciation element can be corrected economically, so the depreciation experienced is the cost to cure the item. A building element is said to be incurable if it cannot be correctly economically, i.e., the cost of repair or renovation would exceed the anticipated increase in value.

curable
physical or functional depreciation that can be corrected economically

incurable
physical or functional depreciation that cannot be corrected economically

These are illustrated in Figure 22.3 and discussed in detail below.

FIGURE 22.3: Categories of Depreciation

	PHYSICAL	FUNCTIONAL
CURABLE	*Physical Curable:* physical wear and tear that can be corrected economically such as old paint	*Functional Curable:* An outdated feature that can be corrected economically such as outdated bathroom fixtures
INCURABLE	*Physical Incurable:* physical wear and tear that cannot be corrected economically such as a decaying foundation	*Functional Incurable:* an outdated feature that cannot be corrected economically such as a poor floor plan

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Physical Depreciation

Physical depreciation represents the accumulated loss in market value caused by physical wear and tear since the date the building was completed. *Physical curable depreciation* refers to issues that can be relatively easily and inexpensively repaired or replaced such as poor decorative condition, broken fittings, loose boards, etc. On the other hand, *physical incurable depreciation* refers to significant issues where correcting the issue would likely exceed the value gained from the repair or replacement.

Curable issues are readily estimated, since the estimated costs of carrying out the necessary repairs should reflect their impact on market value.

Example

An appraiser may estimate that a building, whose current replacement cost is $60,000, has an economic life of 50 years and no salvage value at the end of that time.

$$\text{Depreciation per year} = \frac{\text{Cost} - \text{Salvage Value (if any)}}{\text{Economic Life (years)}}$$

$$= \frac{\$60{,}000\text{-}0}{50}$$

$$= \$1{,}200 \text{ per year}$$

If the effective age of the building is 20 years old at the time of the appraisal, the estimate for incurable physical depreciation is $24,000 (20 × $1,200).

Another appraiser may recognize the weakness in estimating the economic life of a structure and simply prefer to directly estimate a depreciation factor of, say, 40% then:

.40 × $60,000 = $24,000 (estimate of depreciation)

Incurable physical depreciation is more difficult to estimate. Because the costs of these corrections are so great that they do not make economic sense to pursue, the cost to cure does not accurately reflect their impact on value.

Functional Depreciation

Physical depreciation includes building elements that are tangibly inadequate, whether broken, defective, or worn out. Functional depreciation describes building elements that may still be adequately fulfilling their purpose, but are deemed to be below the standards expected in the market, i.e., they are functionally inadequate for modern design.

Curable functional depreciation includes items such as the cost of replacing outmoded fittings, addressing inadequate kitchens or bathrooms, or renovations to address shortcomings of the existing plan such as opening up the living area. Similar to curable physical depreciation, the cost of updating these items can be considered an adequate estimate of their impact on market value.

There are limits to what can be done to cure functional depreciation. For example, if a house represents an architectural style that has gone out of fashion, nothing can be done to update the architectural style and some deduction must be made to reflect this fact. Incurable functional depreciation reflects elements that cannot be economically addressed, meaning the cost to cure these elements exceeds the value contribution of the renovation or refurbishment. These value loss due to incurable items is much more difficult to estimate.

External Depreciation

External depreciation refers to items outside the property itself that impact its value. These are generally outside the owner's control and therefore considered incurable. They can be temporary or permanent in nature. External depreciation can result from locational factors, such as neighbouring uses, or from economic factors. These externalities will have the greatest impact on the land value, but any associated impact on the improvements is reflected in the external depreciation adjustment.

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External Depreciation Examples	
Locational	Adjacent to a 24-hour convenience store
	Near an airport with noise pollution from the aircraft taking off and landing
	Downwind from a sulphur plant that generates rotten gas odours
	Abutting a railroad line with noise and traffic delays.
Economic	Major industry shut down in the community
	Period of excessively high mortgage rates

Example

An appraiser has been asked to estimate the market value of a single-family residence in a rural area using the cost approach of appraisal. After examining the neighbourhood and zoning regulations, the appraiser is satisfied the current use of the site represents its highest and best use – although the noise from the neighbouring gun club has negatively impacted its value. The 1,800 square foot house is five years old and is in need of some repairs: the interior needs to be repainted, the kitchen requires new, modern cabinets, and the basement floor has some cracks and uneven sections.

Using the methods described above the appraiser makes the following estimate:

A.	REPLACEMENT COST (new) 1,800 square feet @ $145.00 per sq. ft. (based on contractors' estimates)		
	Total replacement cost if new		$261,000
B.	LESS DEPRECIATION		
	(1) Physical		
	(a)	Curable (painting)	$2,200
	(b)	Incurable (basement floor; estimated 2% value loss)	$4,500
	(2)	Functional	
	(a)	Curable (new cabinets)	$4,000
	(b)	Incurable*	0
	(3)	External (detrimental use; estimated 5% value loss)	$13,000
	Total Depreciation		$23,700
	Depreciated Replacement Cost		$237,300
C.	ADD SITE VALUE (estimated using the comparative approach of appraisal)		$163,000
D.	MARKET VALUE		$400,300

* Incurable functional depreciation is assumed to be zero since the structure is only five years old and represents highest and best use of the site.

SCOPE AND LIMITATIONS OF THE COST APPROACH

The cost approach has limited practical appeal, however, it may be useful for certain appraisal problems that require separate estimates of value for the land and improvements of a property (e.g., insurance or property tax assessment). The cost method is most applicable to appraisal problems where data is lacking for the income or comparison approaches such as churches, public buildings, and other special use properties.

The main difficulty in using the cost approach of appraisal is in deciding whether, in relation to the subject property, cost and market value are likely to be approximately equal. Only when this condition is satisfied may further consideration be given to the use of the cost approach. In order to fulfil this condition, the property must represent highest and best use.

Another concern are the deductions needed for depreciation, particularly incurable physical and functional depreciation. Calculation of these two items requires the considered judgment of the appraiser since the criteria to be taken into account cannot be definitely expressed. It is difficult to objectively test the validity of the appraisal when much of the estimate relies on the appraiser's judgment.

Both of these difficulties represent greater problems for the appraisal of older property. Therefore, the cost approach is likely to provide a more reliable answer when applied to newer developments.

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Reliance on the Cost Approach

Most often, the cost approach is used as method of last resort, in situations where there is inadequate market data, or where market data is so poor that it cannot be relied upon. These may become very risky lending situations, as there is little certainty or confidence in the resulting lending value conclusion.

Where reference to the cost approach is made, review it closely. What is the basis or support for: land value, cost estimate, depreciation estimate? For any type of single family residential appraisal, the link between cost and value can become questionable. Unless an appraiser has skills in construction cost estimating, sufficient data for land valuation, and direct market evidence is available to measure depreciation, the cost approach ought never to be used for market value appraisals, i.e., for mortgage or value in exchange purposes.

Be aware of the strengths and weaknesses of the cost approach, and the research and analysis necessary to complete a meaningful valuation. Appraisals In which the cost approach is completed ought to make clear the limited weight that can be placed on the results.

CONCLUSION

The comparative approach is most commonly applied in valuing single-family residential properties when there are sufficient open market transactions. It is also effective in appraising vacant land. The cost approach is most commonly used in residential appraisals as support for a value indication derived from the comparative, but it may be relied on for unique properties, in situations with insufficient sales or lease data available, or where a separate estimate for land and improvement is required such as in the case of insurance or property tax assessment.

The comparative and cost approaches have limited applicability for commercial and industrial properties, given difficulties in finding reasonably comparable sales. These approaches are more commonly used to provide support to a market value derived from the income approach. The income approach is discussed in the next chapter.

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APPENDIX 22.1
Calculations Used to Find Market Value of a Vendor Takeback

The property described as Comparable A was sold subject to a vendor take-back mortgage that was written at an interest rate below market rates. As this is a feature of the comparable that is superior to the subject property, a negative adjustment will have to be made for this mortgage.

Face Value of Loan:	$250,000
Contract Rate of Interest:	$j_2 = 5\%$
Amortization Period:	25 years
Term:	5 years
Market Rate of Interest:	$j_2 = 6\%$
Payments:	Monthly

i. Calculate the Equivalent Nominal Contract Rate Compounded Monthly, the Monthly Payment and the Outstanding Balance due at the end of the term.

Calculation

Press	Display	Comments
5 ■ NOM%	5	Entered stated nominal rate
2 ■ P/YR	2	Entered stated compounded frequency
■ EFF%	5.0625	Compute equivalent effective annual rate
12 ■ P/YR	12	Enter desired compounding frequency
■ NOM%	4.948699	Nominal contract rate with monthly compounding
250000 PV	250,000	Actual loan amount
300 N	300	Enter amortization period in months
0 FV	0	FV not to be used
PMT	–1454.012463	Calculated payments
1454.01 +/– PMT	–1454.01	Actual (rounded) payments
60 INPUT ■ AMORT	PER 60–60	
= = =	221,268.935250	Outstanding balance after 60th payment

ii. Calculate Equivalent Nominal Market Rate with Monthly Compounding and the Market Value of the Mortgage (Present Value of Payments and Outstanding Balance at Market Interest Rate)

Calculation

Press	Display	Comments
6 ■ NOM%	6	Entered stated nominal rate
2 ■ P/YR	2	Entered stated compounded frequency
■ EFF%	6.0900	Compute equivalent effective annual rate
12 ■ P/YR	12	Enter desired compounding frequency
■ NOM%	5.926346	Nominal market rate with monthly compounding
60 N	60	Enter contract term in months
221268.94 +/– FV	–221,268.94	OSB to be received at the end of the term
PV	239,987.75	Market value of payment stream over the loan term

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APPENDIX 22.1, *continued*
Calculations Used to Find Market Value of a Vendor Takeback

iii. Calculate Difference between Face Value and Market Value

250,000.00
– 239,987.75
10,012.25

The sale price of Comparable A would need to be adjusted downwards by $10,012 (rounded) to reflect the vendor take-back mortgage written at a below market interest rate. The actual adjustment required for this comparable to reflect the beneficial financing may vary from this amount, depending on the appraiser's judgement of how much this affected the sale price.

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APPENDIX 22.2

Sample Construction Costs of a Single Family Residence

CoreLogic – SwiftEstimator
Residential Estimator – Standard Report

Estimate ID	398		
Property Owner	Tutor		
Address	123 Strawberry Lane		
City	St. John's		
State/Province	NL		
ZIP/Postal Code	A1A2B2		
Surveyed By			
Survey Date			
Single-family Residence		Floor Area	1280 square feet
Effective Age		Quality	4 Good
Cost as of	09/20XX	Condition	4 Good
Style	Bi-level		
Exterior Wall	Frame, Siding, Wood 20% Frame, Stucco 80%		
Plumbing Fixtures	5		

Cost Data

Description	Units	Unit Cost	Total
Base Cost	1,280	$103.24	$132,147
Plumbing Fixtures	5	$2,501.25	$12,506
Comp. Shingle or Built-up Rock	1,280	$3.78	$4,838
Carpet and Pad	448	$6.65	$2,979
Ceramic Tile	64	$20.30	$1,299
HardwoodW	384	$18.28	$7,020
Vinyl Sheet	384	$7.53	$2,892
Forced Air Furnace	1,280	$4.85	$6,208
Plumbing Rough-ins	3	$799.25	$2,398
Basic Structure Total Cost	1,280	$134.60	$172,287
Section: Basement			
8" Concrete Walls	810	$31.53	$25,539
Outside Entrance Below Grade	1	$2,616.25	$2,616
Basement	810	$34.76	$28,155
Subtotal Basement			$28,155
Replacement Cost New	1,280	$156.60	$200,442
Total Depreciated Cost			$200,442
Total			$200,442

Cost data by CoreLogic, Inc.

Remarks

Cost estimate is as of September 20XX for a 1,280sf house with an unfinished basement of 810sf. No depreciation is calculated.

Except for items and costs listed under "Addition Details," this SwiftEstimator report has been produced utilizing current cost data and is in compliance with the Marshall & Swift Licensed User Certificate. This report authenticates the user as a current Marshall & Swift user.

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APPENDIX 22.3
Sample Comparative Market Analysis (CMA)

Subject Property: #405-1140 Fable Street

Unit Details:		Building Details:	
Square Footage	1,200 SF	Building Name	Bruce Meadows
# Bedrooms	2	Year Built	19X1
# Bathrooms	2	# of floors	12
Exposure	SW	Included in strata fees	Property taxes
Location	Midtown	Amenities	Small fitness centre
Parking	1 covered stall, included	Type of Construction	Concrete
Storage	1 locker, approx. 150 SF		
Additional Features	Small balcony		

This unit has been well-maintained and has high-end finishes, and is of a good quality overall. The small balcony offers views of the city, and the location is considered to be central. Bruce Meadows is known to be a well-maintained building with a well-run strata corporation, but it does not have many extra amenities. The property was most recently purchased for $435,000.

Comparable 1: #907-1140 Fable Street

Sold: May 19, 20X1 at $485,000 (listed at $494,900; 27 days on market)

Unit Details:		Building Details:	
Square Footage	1,240 SF	Building Name	Bruce Meadows
# Bedrooms	2	Year Built	19X1
# Bathrooms	2	# of floors	12
Exposure	SW	Included in strata fees	Property taxes
Location	Midtown	Amenities	Small fitness centre
Parking	1 covered stall, included	Type of Construction	Concrete
Storage	1 locker, approx. 200 SF		
Additional Features	Medium balcony		

Unit #907 is located in the same building as the subject property and is overall of similar quality. As a slightly larger unit with a larger balcony, location on a higher floor (with impressive views) and 50 square feet of additional storage space, #907 is considered to be slightly superior. This unit sold 27 days after being listed, which is relatively typical given current market conditions.

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APPENDIX 22.3, *continued*
Sample Comparative Market Analysis (CMA)

Comparable 2: #302-1140 Fable Street

Sold: June 28, 20X1 at $454,000 (listed at $465,000, reduced to $459,000; 63 days on market)

Unit Details:		Building Details:	
Square Footage	1,000 SF	Building Name	Bruce Meadows
# Bedrooms	2	Year Built	19X1
# Bathrooms	1.5	# of floors	12
Exposure	NE	Included in strata fees	Property taxes
Location	Midtown	Amenities	Small fitness centre
Parking	1 covered stall, included	Type of Construction	Concrete
Storage	1 locker, approx. 150 SF		
Additional Features	None		

Unit #302 is located in the same building as the subject property and is overall of slightly lower quality (it had been used as a rental property by the owners). #302 is smaller than the subject property and the bathroom off the bedroom is a half bath, not a full. This unit does not have a balcony and has less desirable views/orientation. This property took 63 days to sell, which is long given current market conditions. The price was reduced after 50 days on the market, indicating that it had been perceived as overpriced.

Comparable 3: #505-1144 Fable Street

Sold: June 12, 20X1 at $476,000 (listed at $479,900; 34 days on market)

Unit Details:		Building Details:	
Square Footage	1,100 SF	Building Name	The Sailor
# Bedrooms	2	Year Built	19X1
# Bathrooms	2	# of floors	14
Exposure	SW	Included in strata fees	Property taxes
Location	Midtown	Amenities	Small fitness centre, indoor pool, rooftop garden
Parking	1 covered stall, included	Type of Construction	Concrete
Storage	None		
Additional Features	Medium balcony		

The Sailor is the building next to Bruce Meadows. The two buildings are overall of similar quality, but The Sailor offers additional amenities that are seen as desirable. However, units do not come with additional storage. Unit #505 is slightly smaller than the subject listing, but has a larger balcony. Finishes, views, and overall quality are similar.

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APPENDIX 22.3, *continued*
Sample Comparative Market Analysis (CMA)

Current Listings

The following properties, similar to the subject property, are currently listed for sale:

Building	Unit	#Bed	#Bath	SF	List Price	DOM	Quality Compared to Subject
Bruce Meadows	812	3	2	1,450	$550,000	13	Superior
The Sailor	309	2	2	1,100	$479,000	8	Similar
The Sailor	619	2	2	1,050	$485,000	22	Similar
The Sailor	1210	2	2	1,400	$529,000	21	Superior

Analysis

Three strong comparable sales represented a market value range between $454,000 and $485,000.

Comparable 1 sold for the highest price at $485,000. Overall, this unit is considered to be very similar to the subject property, with a few slightly more desirable attributes: unit size, balcony size, view, storage size.

Comparable 2 sold for the lowest price at $454,000. Overall, this unit is considered to be slightly inferior to the subject property: half bathroom versus full bathroom, no balcony, smaller square footage, less desirable view and orientation.

Comparable 3 sold within the established range at $476,000. Though this unit is in a different building offering more amenities, the unit characteristics are overall very similar to the subject property.

Suggested Market Value

Given this comparative market analysis, combined with current market conditions, current listings, and my knowledge of this market, I estimate the current market value of the subject property, #405 in Bruce Meadows, to be between $475,000 and $480,000. In order to facilitate a sale that meets your previously discussed goals, I suggest a listing price of $481,900 for this property. This is in line with the competing listings as noted above.

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