

# HIGH-RISE CONDOMINIUM MODEL

Revaluation Cycle – January 1, 2025 to December 31, 2028  
Base Date: January 1, 2023



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**Effective Date of Valuation** – January 1, 2023

**Date of Report** – January 1, 2025



# Scope of Data and Analysis

## Valuation Approach

The appraisal method employed for high-rise apartment condominium properties is the sales comparison approach using the multiple regression analysis technique. Multiple regression analysis (MRA) is an accepted statistical technique used in the mass appraisal of property. MRA determines the statistical relationship between property characteristics and sale prices and is used in determining an estimate of value.

Regression analysis helps one understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed. A dependent variable is something that depends on other factors. For assessment valuation purposes, the dependent variable is the predicted adjusted sale prices whereas, independent variables are factors that cause a change in the dependent variable; for example, property characteristics such as age, size and quality. Multiple regression is a statistical technique widely used for prediction and forecasting.

The development of a multiple regression model is determined by utilizing statistical software that simultaneously identifies and analyzes property characteristics of sold properties. Multiple regression determines the coefficient values representing statistically significant property characteristics to establish the multiple regression model. The application of the regression model to the subject property characteristics represents its assessed value. It is important to note that although there may be discussion on the relative value of an individual variable (property characteristic) within the multiple regression model, any changes to the value of one variable will shift or, affect, the value of the other variables. The MRA technique predicts property values on sales price and will always compensate for any deviation of established variables and/or its corresponding value. Another important note is that the coefficient value in the MRA model does not represent the replacement cost or reproduction cost of the variable.

Quality control identifies valid sales for extraction and data cleaning. Once complete, sale prices are adjusted for non-realty components and time to the base date. The sales dataset is analyzed using the multiple regression technique to identify and estimate the relationship between an adjusted sale price and property characteristics (variables). A detailed explanation follows in the 'Development of High-Rise Condominium Model' section. The multiple regression model for the high-rise condominium group is citywide.

## High-Rise Condominium Summary

There are 470 sales used to establish Assessed Values for high-rise condominiums. A detailed summary of key characteristics for the city overall is listed below:

	High-Rise Condominium
<b>ASSESSMENT AND SALE STATISTICS</b>	
Community Median Assessment For Properties Sold In Market Analysis Period	\$342,288
Community Median Assessment Per Sq Ft For Properties Sold In Market Analysis Period	\$345
Community Overall Median Adjusted Sale Price	\$335,031
Community Overall Median Adjusted Sale Price Per Sq Ft	\$339
Number of Sales Used In Market Analysis	470
<b>DESCRIPTIVE STATISTICS (INVENTORY)</b>	
Median Living Area (Sq Ft) of Residences	986
Median Year of Construction of Residences	1,984
Number of Inventory (Oct, 2024)	1,801

# Development of High-Rise Condominium Model

## Introduction

The development of the multiple regression analysis (MRA) model is the major valuation tool in developing assessment values for residential high-rise condominium properties. However, MRA is only one of following six steps within the valuation process.

- Data Extraction
- Data Cleaning
- Non-realty Analysis
- Time Trend Analysis
- Multiple Regression Analysis (MRA)
- Ratio Study

## Data Extraction

The primary source of sales information is from Information Services Corporation (ISC). This information is stored in a digital format from which the Assessment Branch extracts sales data for analysis. All relevant variables are captured in this data set that is ready for cleaning.

## Data Cleaning

Since it is practically impossible to check every sale, there is a quality control process that helps identify extreme sales. Extreme sales are often referred to as outliers or sales that seem out of context with the majority of the property group and/or neighbourhood. Outliers are identified by querying and assembling sold properties based on some key attributes, such as size, age, and quality. This quality review process helps to identify missing data, re-sales, low-price properties, high price properties and questionable data characteristics. Extreme (outlier) sales are investigated and changes made as required as part of the Assessment Branch quality control process.

## Non-realty Analysis

Once the sales dataset has passed the quality control phase, an analysis of non-realty items is undertaken. Assessed values reflect real estate only and should not include the non-realty component of the sale, often referred to as 'chattels'. A chattel is a moveable item of property which is neither land nor permanently attached to land or a building and therefore is not considered real estate. The value of chattels is sourced and quantified from sales verification forms that ask property purchasers whether chattels such as appliances, draperies and/or furniture are included in the sale price and, if so, their approximate value. Based on a sample of this information, an adjustment for non-realty components of the sales is determined. For the 2023 base date, the adjustment for chattels is 1.4 %. Applying the non-realty adjustment to sold properties reduces individual sale prices by 1.4%.

## Time Trend Analysis

Sales that have been adjusted for a non-realty component are analyzed for time influences. The real estate market is not always flat. In other words, in a rising market, a purchaser would expect to pay more for a house in 2020 than if it was purchased in 2019. A time trend analysis measures the influence of time on sales price. This is particularly relevant for the current revaluation cycle as the valuation process uses four years of sales, occurring between 2019 and 2022. These sales are examined for time influence and adjusted to reflect the assessment base date of January 1, 2023.

The sales assessment ratio (SAR) technique is used to measure time trends. The result of the time trend analysis shows that the sales prices compared to the current assessed value in high-rise condominium are factored on a monthly basis. For example, from the resulting monthly time adjustment factors for high-rise condominium table below, a January 2019 \$350,000 sale price (adjusted for non-realty) would result in a fully adjusted sale price of \$353,780 ( $\$350,000 \times 1.0108$ ) that would be used in multiple regression analysis.

Sale Month	Time Adjustment Factors	Sale Month	Time Adjustment Factors
Jan-19	1.0108	Jan-21	1.0451
Feb-19	1.0124	Feb-21	1.0430
Mar-19	1.0139	Mar-21	1.0410
Apr-19	1.0154	Apr-21	1.0390
May-19	1.0169	May-21	1.0370
Jun-19	1.0185	Jun-21	1.0349
Jul-19	1.0200	Jul-21	1.0329
Aug-19	1.0215	Aug-21	1.0309
Sep-19	1.0231	Sep-21	1.0290
Oct-19	1.0246	Oct-21	1.0270
Nov-19	1.0262	Nov-21	1.0250
Dec-19	1.0278	Dec-21	1.0230
Jan-20	1.0293	Jan-22	1.0211
Feb-20	1.0309	Feb-22	1.0191
Mar-20	1.0325	Mar-22	1.0172
Apr-20	1.0340	Apr-22	1.0152
May-20	1.0356	May-22	1.0133
Jun-20	1.0372	Jun-22	1.0114
Jul-20	1.0388	Jul-22	1.0095
Aug-20	1.0404	Aug-22	1.0076
Sep-20	1.0420	Sep-22	1.0057
Oct-20	1.0436	Oct-22	1.0038
Nov-20	1.0452	Nov-22	1.0019
Dec-20	1.0469	Dec-22	1.0000

## Multiple Regression Analysis (MRA)

In high-rise condominium, 470 valid, fully adjusted sales occurring between January 1<sup>st</sup>, 2019 and December 31<sup>st</sup>, 2022 were used in the multiple regression analysis (MRA). MRA estimates relationships between multiple variables simultaneously. For assessment purposes, it is the relationship between adjusted sale prices and property characteristics as determined by multiple regression algorithms. These model variables proved to significantly affect sales price and are represented in the high-rise condominium valuation model below.

### High-Rise Condominium – Multiple Regression Analysis Model

Description	Variable	Coefficient (\$)
Constant		27,433.54
Adjustment Based on Effective Age	Age	-11,965.93
Size by Quality per ft <sup>2</sup>	Size - Low Quality	253.30
	Size - Low/Fair Quality	
	Size - Fair Quality	420.47
	Size - Average Quality	496.46
	Size - Good Quality	823.21
	Size - Very Good Quality	
	Size - Excellent Quality	
Size by Condition per ft <sup>2</sup>	Condition - Poor	0.00
	Condition - Below Average	
	Condition - Average	
	Condition - Above Average	25.31
	Condition - Good	41.04
	Condition - Very good	0.00
	Condition - Superior	
Condition - Excellent		
Unit Attributes	Floor Level	5,821.51
	Topmost Unit	55,300.31
	Corner Unit	27,156.58
View Influences Project	View of River	45,790.01
	PROJ_2ND_AVE_LOFT_495014500	121,615.88

Description	Variable	Coefficient (\$)
Geographic Adjustment	PROJ_BROADWAY_515134000	119,403.67
	PROJ_FREMAI_535402100	-187,197.02
	PROJ_LA_RENAISSANCE_505039140	-72,275.88
	PROJ_LUXE_515010130	71,271.79
	PROJ_RIVERFRONT_495128830	-47,482.58
	PROJ_RUMLEY_LOFTS_6650_495006650	-224,839.40
	PROJ_SHANGRI_LA_495105250	-85,331.10
	PROJ_SPADINAWATR_505045800	-105,577.66
	PROJ_TEATON_2200_494922200	-224,839.40
	PROJ_WATERFORD_495121740	-173,019.72
	PROJ_WYCLIFFE_495022000	-57,526.02

## Ratio Study

The median assessment to sales ratio (ASR) study is used in measuring the level of mass appraisals. The median is the middle value of the ratios when arrayed in order of magnitude. It divides the ratios into two equal groups, and is therefore only minutely affected by extreme ratios. The closer this value is to 1, the better.

### ASR Results for High-Rise Condominium

The result of the ASR study for the high-rise condominiums is displayed in the table below.

Number of Sales	470
Median Assessment to Sale Price Ratio (ASR)	1.00
Coefficient of Dispersion (COD)	12.1%
Price-Related Differential (PRD)	1.01

The median ASR is 1.00 which is within the I.A.A.O. range of acceptable A.S.R.s between 0.90 and 1.10.