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Multiple Regression Analysis (MRA)

MRA is a statistical technique for estimating unknown data from known and/or available data. In the mass appraisal process, the unknown data begin as the Assessor's market values of vacant land and/or residential properties. The known and/or available data are the sales prices, date of sale, and all property characteristics associated with the price and date. MRA is therefore directly tied to market activity, the required method of valuation for all residential property in Colorado. Please see Colorado Revised Statutes, [39-1-103(5)(a) and (8)(a)].

The objective of MRA is to model the relationship between sale price and all significant property characteristics such as location, square footage, quality of construction, etc. Our goal is to develop a valuation equation that estimates value for all properties (sold and unsold) based on the property characteristics of all the sales. This analysis returns value amounts per unit for each of the significant characteristics. These figures are values for location, total finished area dollar amount, etc. MRA allows for consistent values across the broad range of properties on our tax roll.

The regression software also produces statistics that allow the user to evaluate the "goodness of fit" and the accuracy of the equation. All Colorado Assessors' Offices are required to meet minimum statistical performance standards when appraising real property. These statistical tools help us to develop valuation models that accurately reflect market activity during the statutory data collection period, meet our requirements for level and uniformity of assessment, and in turn, extend these values in a fair and uniform manner to all taxable property.

Statistical analysis is employed to analyze residential and vacant land sales within Summit County neighborhoods. These sales have been confirmed to eliminate any that are not valid arms-length transactions and also adjusted to remove the declared value of any personal property included in the purchase of the real property. Values for residential and vacant land are calculated based on the unit amounts from the modeling process for each of the significant characteristics. These unit amounts are also used as a starting point in the calibration of market models for the traditional sales comparison grid.

It is not necessary to be familiar with the intricacies of statistical analysis to determine if a property value is appropriate. A more practical procedure is to review a listing of sales from your neighborhood or project and choose the three to five most comparable to the property being appraised. Important value contributors are location, land size, finished square footage, age of the building, quality of construction, condition for age, view, etc. Adjustments are made for the differences between the property being appraised and the sold properties.

Summit County's website, www.summitcountyco.gov, under Departments/Elected Offices/Assessor, has a variety of information related to the 2017 reappraisal: sales lists, adjustments for date of sale, a narrative about the local economy, an option to view comparable sales or data on any property, and other useful tools for property owners.