



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)].

MRA is used to analyze residential and vacant land sales throughout Summit County. These sales have been confirmed to eliminate any that are not valid arms-length transactions. The prices have been adjusted to remove the declared value of any non-realty items included in the purchase of the real property. The sold properties have also been reviewed for any changes to characteristics effective at the time of sale.

The objective of MRA is to model the relationship between sale price and all significant property characteristics, such as location, size, and construction quality. 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 for each significant characteristic. Value calculations for residential and vacant land are based on these rates and percentage adjustments. 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 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 of value and uniformity of assessment, and in turn, extend these values in an equitable manner to all taxable property.

Further information regarding reappraisal is posted on the Summit County Government website www.summitcountyco.gov, under Departments/Assessor. This includes narratives about the local economy and our economic areas and neighborhoods, adjustments made for changing market conditions, reports for each regression model developed, and lists of valid sales used in the analysis. Although a direct sales comparison method is no longer utilized by our office, comparable sold properties have been selected for each subject. The sales show adjustment for differences from each similar subject, according to the rates developed by regression analysis. The resulting values illustrate support for the value determined by the MRA process.