DENVER
THE MILE HIGH CITY

# 2024
# DENVER COUNTY
# PROPERTY ASSESSMENT
# STUDY

EastWest
ECONOMETRICS

**East West**
ECONOMETRICS

September 15, 2024

Ms. Natalie Castle
Director of Research
Colorado Legislative Council
Room 029, State Capitol Building
Denver, Colorado 80203

**RE:    Final Report for the 2024 Colorado Property Assessment Study**

Dear Ms. Castle:

East West Econometrics.-Audit Division is pleased to submit the Final Reports for the 2024 Colorado Property Assessment Study.

These reports are the result of two analyses: A procedural audit and a statistical audit.

The procedural audit examines all classes of property.  It specifically looks at how the assessor develops economic areas, confirms and qualifies sales, develops time adjustments and performs periodic physical property inspections.  The audit reviews the procedures for determining subdivision absorption and subdivision discounting.  Valuation methodology is examined for residential properties and commercial properties.  Procedures are reviewed for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests, and non-producing patented mining claims.

Statistical audits are performed on vacant land, residential properties, commercial/industrial properties and agricultural land.  A statistical analysis is performed for personal property compliance on the eleven largest counties:  Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld.  The remaining counties receive a personal property procedural study.

East West Econometrics  – Audit Division appreciates the opportunity to be of service to the State of Colorado.  Please contact us with any questions or concerns.

Harry J. Fuller
Project Manager
East West Econometrics. – Audit Division

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# INTRODUCTION

The State Board of Equalization (SBOE) reviews assessments for conformance to the Constitution. The SBOE will order revaluations for counties whose valuations do not reflect the proper valuation period level of value.

The statutory basis for the audit is found in C.R.S. 39-1-104 (16)(a)(b) and (c).

The legislative council sets forth two criteria that are the focus of the audit group:

To determine whether each county assessor is applying correctly the constitutional and statutory provisions, compliance requirements of the State Board of Equalization, and the manuals published by the State Property Tax Administrator to arrive at the actual value of each class of property.

To determine if each assessor is applying correctly the provisions of law to the actual values when arriving at valuations for assessment of all locally valued properties subject to the property tax.

The property assessment audit conducts a two-part analysis: A procedural analysis and a statistical analysis.

The procedural analysis includes all classes of property and specifically looks at how the assessor develops economic areas, confirms and qualifies sales, and develops time adjustments. The audit also examines the procedures for adequately discovering, classifying and valuing agricultural outbuildings, discovering subdivision build-out and subdivision discounting procedures. Valuation methodology for vacant land, improved residential properties and commercial properties is examined. Procedures for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests and non-producing patented mining claims are also reviewed.

Statistical analysis is performed on vacant land, residential properties, commercial/industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax Administrator.

East West Econometrics has completed the Property Assessment Study for 2024 and is pleased to report its findings for Denver County in the following report.

# REGIONAL/HISTORICAL SKETCH OF DENVER COUNTY

## Regional Information

Denver County is located in the Front Range region of Colorado. The Colorado Front Range is a colloquial geographic term for the populated areas of the State that are just east of the foothills of the Front Range. It includes Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld counties.
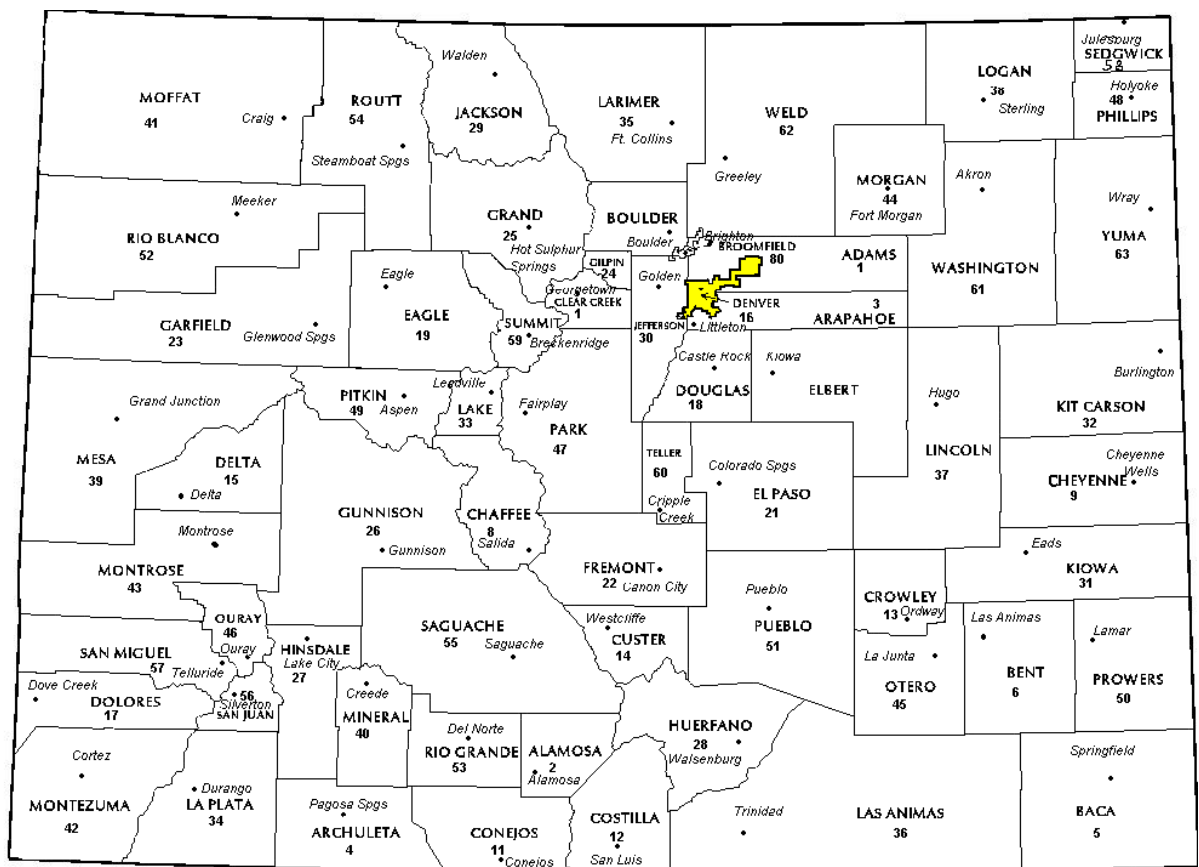
## Historical Information

Denver County has approximately 153 square miles and an estimated population of approximately 727,211 people, according to the U.S. Census Bureau's 2020 estimated census data. This represents a 21.2 percent change from April 1, 2010 to July 1, 2019.

Denver is the capital and the most populous city of the state of Colorado. Denver is a consolidated city-county located in the South Platte River Valley on the High Plains just east of the Front Range of the Rocky Mountains.

Denver City was founded in November 1858 as a mining town during the Pikes Peak Gold Rush in western Kansas Territory. That summer, a group of gold prospectors from Lawrence, Kansas, arrived and established Montana City on the banks of the South Platte River. This was the first settlement in what was later to become the city of Denver. The site faded quickly, however, and was abandoned in favor of Auraria (named after the gold-mining town of Auraria, Georgia) and St. Charles City by the summer of 1859. The Montana City site is now Grant-Frontier Park and includes mining equipment and a log cabin replica.

On November 22, 1858, General William Larimer, a land speculator from eastern Kansas, placed cottonwood logs to stake a claim on the hill overlooking the confluence of the South Platte River and Cherry Creek, across the creek from the existing mining settlement of Auraria. Larimer named the town site Denver City to curry favor with Kansas Territorial Governor James W. Denver. Larimer hoped that the town's name would help make it the county seat of Arapaho County, but ironically Governor Denver had already resigned from office. The location was accessible to existing trails and was across the South Platte River

from the site of seasonal encampments of the Cheyenne and Arapaho. The site of these first towns is now the site of Confluence Park in downtown Denver. Larimer, along with associates in the St. Charles City Land Company, sold parcels in the town to merchants and miners, with the intention of creating a major city that would cater to new emigrants. Denver City was a frontier town, with an economy based on servicing local miners with gambling, saloons, livestock and goods trading. In the early years, land parcels were often traded for grubstakes or gambled away by miners in Auraria.

The Colorado Territory was created on February 28, 1861. Arapahoe County was formed on November 1, 1861 and Denver City was incorporated on November 7, 1861. Denver City served as the Arapahoe County Seat from 1861 until consolidation in 1902. In 1865, Denver City became the Territorial Capital and became the State Capital when Colorado was admitted to the Union.

In 1901 the Colorado General Assembly voted to split Arapahoe County into three parts: a new consolidated City and County of Denver, a new Adams County, and the remainder of the Arapahoe County to be renamed South Arapahoe County. A ruling by the Colorado Supreme Court, subsequent legislation, and a referendum delayed the creation of the City and County of Denver until November 15, 1902.

Denver has hosted the Democratic National Convention twice, during the years of 1908 and again in 2008, taking the opportunity to promote the city's status on the national, political, and socioeconomic stage.
*(Wikipedia.org)*

# RATIO ANALYSIS

## Methodology

All significant classes of property were analyzed. Sales were collected for each property class over the eighteen month period from January 1, 2019 through June 30th, 2020. Property classes with less than thirty sales had the sales period extended in six month increments up to an additional forty-two months. If this extended sales period did not produce the minimum thirty qualified sales, the Audit performed supplemental appraisals to reach the minimum.

Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these latter measures, but were counseled if there were anomalies noted during our analysis. Qualified sales were based on the qualification code used by each county, which were typically coded as either "Q" or "C." The ratio analysis included all sales. The data was trimmed for counties with obvious outliers using IAAO standards for data analysis. In every case, we examined the loss in data from trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were "lost" because of trimming.

All sixty-four counties were examined for compliance on the economic area level. Where there were sufficient sales data, the neighborhood and subdivision levels were tested for compliance. Although counties are determined to be in or out of compliance at the class level, non-compliant economic areas, neighborhoods and subdivisions (where applicable) were discussed with the Assessor.

**Data on the individual economic areas, neighborhoods and subdivisions are found in the STATISTICAL APPENDIX.**

## Conclusions

For this final analysis report, the minimum acceptable statistical standards allowed by the State Board of Equalization are:

| ALLOWABLE STANDARDS RATIO GRID | | |
|---|---|---|
| Property Class | Unweighted Median Ratio | Coefficient of Dispersion |
| Commercial/Industrial | Between .95-1.05 | Less than 20.99 |
| Condominium | Between .95-1.05 | Less than 15.99 |
| Single Family | Between .95-1.05 | Less than 15.99 |
| Vacant Land | Between .95-1.05 | Less than 20.99 |

The results for Denver County are:

| Denver County Ratio Grid | | | | | |
| --- | --- | --- | --- | --- | --- |
| Property Class | Number of Qualified Sales | Unweighted Median Ratio | Price Related Differential | Coefficient of Dispersion | Time Trend Analysis |
| Commercial/Industrial | 584 | 0.969 | 1.033 | 14.1 | Compliant |
| Single Family | 30,307 | 1.000 | 1.003 | 5.7 | Compliant |
| Vacant Land | 719 | 0.953 | 1.065 | 15.3 | Compliant |

After applying the above described methodologies, it is concluded from the sales ratios that Denver County is in compliance with SBOE, DPT, and Colorado State Statute valuation guidelines.

## Recommendations

None

## Methodology

While we recommend that counties use the inverted ratio regression analysis method to account for market (time) trending, some counties have used other IAAO-approved methods, such as the weighted monthly median approach. We are not auditing the methods used, but rather the results of the methods used. Given this range of methodologies used to account for market trending, we concluded that the best validation method was to examine the sale ratios for each class across the appropriate sale period. To be specific, if a county has considered and adjusted correctly for market trending, then the sale ratios should remain stable (i.e. flat) across the sale period. If a residual market trend is detected, then the county may or may not have addressed market trending adequately, and a further examination is warranted. This validation method also considers the number of sales and the length of the sale period. Counties with few sales across the sale period were carefully examined to determine if the statistical results were valid.

## Conclusions

After verification and analysis, it has been determined that Denver County has complied with the statutory requirements to analyze the effects of time on value in their county. Denver County has also satisfactorily applied the results of their time trending analysis to arrive at the time adjusted sales price (TASP).

## Recommendations

None

# SOLD/UNSOLD ANALYSIS

## Methodology

Denver County was tested for the equal treatment of sold and unsold properties to ensure that "sales chasing" has not occurred. The auditors employed a multi-step process to determine if sold and unsold properties were valued in a consistent manner.

We test the hypothesis that the assessor has valued unsold properties consistent with what is observed with the sold properties based on several units of comparison and tests. The units of comparison include the actual value per square foot and the change in value from the previous base year period to the current base year. The first test compares the actual value per square foot between sold and unsold properties by class. The median and mean value per square foot is compared and tested for any significant difference. This is tested using non-parametric methods, such as the Mann-Whitney test for differences in the distributions or medians between sold and unsold groups. It is also examined graphically and from an appraisal perspective. Data can be stratified based on location and subclass. The second test compares the difference in the median change in value from the previous base year to the current base year between sold and unsold properties by class. The same combination of non-parametric and appraisal testing is used as with the first test. A third test employing a valuation model testing a sold/unsold binary variable while controlling for property attributes such as location, size, age and other attributes. The model determines if the sold/unsold variable is statistically and empirically significant. If all three tests indicate a significant difference between sold and unsold properties for a given class, the Auditor may meet with the county to determine if sale chasing is actually occurring,

or if there are other explanations for the observed difference.

If the unsold properties have a higher median value per square foot than the sold properties, or if the median change in value is greater for the unsold properties than the sold properties, the analysis is stopped and the county is concluded to be in compliance with sold and unsold guidelines. All sold and unsold properties in a given class are first tested, although properties with extreme unit values or percent changes can be trimmed to stabilize the analysis. The median is the primary comparison metric, although the mean can also be used as a comparison metric if the distribution supports that type of measure of central tendency.

The first test (unit value method) is applied to both residential and commercial/industrial sold and unsold properties. The second test is applied to sold and unsold vacant land properties. The second test (change in value method) is also applied to residential or commercial sold and unsold properties if the first test results in a significant difference observed and/or tested between sold and unsold properties. The third test (valuation modeling) is used in instances where the results from the first two tests indicate a significant difference between sold and unsold properties. It can also be used when the number of sold and unsold properties is so large that the non-parametric testing is indicating a false rejection of the hypothesis that there is no difference between the sold and unsold property values.

These tests were supported by both tabular and graphics presentations, along with written documentation explaining the methodology used.

| Sold/Unsold Results | |
| --- | --- |
| **Property Class** | **Results** |
| Commercial/Industrial | Compliant |
| Single Family | Compliant |
| Vacant Land | Compliant |

## Conclusions

After applying the above described methodologies, it is concluded that Denver County is reasonably treating its sold and unsold properties in the same manner.

## Recommendations

None

# AGRICULTURAL LAND STUDY

| Acres By Subclass | Value By Subclass |
|---|---|
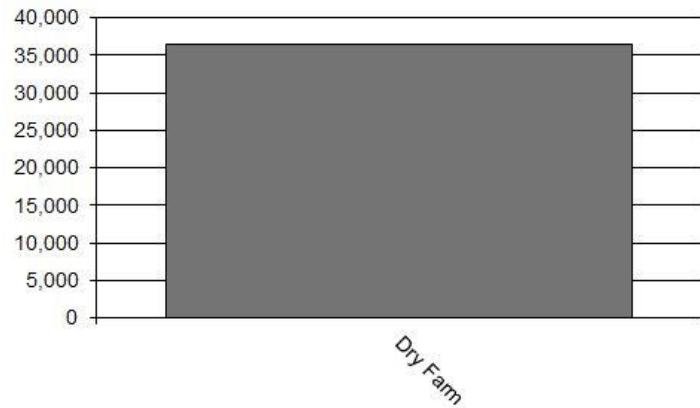


Dry Farm
100.00%



## Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other lands. In addition, county records were reviewed in order to determine if: Aerial photographs are available and are being used; soil conservation guidelines have been used to classify lands based on productivity; crop rotations have been documented; typical commodities and yields have been determined; orchard lands have been properly classified and valued; expenses reflect a ten year average and are typical landlord expenses; grazing lands have been properly classified and valued; the number of acres in each class and subclass have been determined; the capitalization rate was properly applied. Also, documentation was required for the valuation methods used and any locally developed yields, carrying capacities, and expenses. Records were also checked to ensure that the commodity prices and expenses, furnished by the Property Tax

Administrator (PTA), were applied properly. (See Assessor Reference Library Volume 3 Chapter 5.)

### Conclusions

An analysis of the agricultural land data indicates an acceptable appraisal of this property type. Directives, commodity prices and expenses provided by the PTA were properly applied. County yields compared favorably to those published by Colorado Agricultural Statistics. Expenses used by the county were allowable expenses and were in an acceptable range. Grazing lands carrying capacities were in an acceptable range. The data analyzed resulted in the following ratios:

| Denver County Agricultural Land Ratio Grid | | | | | | |
|---|---|---|---|---|---|---|
| Abstract Code | Land Class | Number Of Acres | County Value Per Acre | County Assessed Total Value | WRA Total Value | Ratio |
| 4127 | Dry Farm | 746 | 48.87 | 36,458 | 36,458 | 1.00 |
| **Total/Avg** | | **746** | **48.87** | **36,458** | **36,458** | **1.00** |

## Recommendations

None

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# Agricultural Outbuildings

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## Methodology

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.74 through 5.77 were being followed.

## Conclusions

Denver County has complied with the procedures provided by the Division of Property Taxation for the valuation of agricultural outbuildings.

## Recommendations

None

# Agricultural Land Under Improvements

## Methodology

Data was collected and reviewed to determine if the guidelines found in the Assessor's Reference Library (ARL) Volume 3, pages 5.19 and 5.20 were being followed.

## Conclusions

Denver County has used the following methods to discover land under a residential improvement on a farm or ranch that is determined to be not integral under 39-1-102, C.R.S.:

- Questionnaires
- Field Inspections
- Phone Interviews
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date

Denver County has used the following methods to discover the land area under a residential improvement that is determined to be not integral under 39-1-102, C.R.S.:

- Field Inspections
- Phone Interviews
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Denver County has complied with the procedures provided by the Division of Property Taxation for the valuation of land under residential improvements that may or may not be integral to an agricultural operation.

## Recommendations

None

# SALES VERIFICATION

According to Colorado Revised Statutes:

*A representative body of sales is required when considering the market approach to appraisal.*

*(8) In any case in which sales prices of comparable properties within any class or subclass are utilized when considering the market approach to appraisal in the determination of actual value of any taxable property, the following limitations and conditions shall apply:*

*(a)(I) Use of the market approach shall require a representative body of sales, including sales by a lender or government, sufficient to set a pattern, and appraisals shall reflect due consideration of the degree of comparability of sales, including the extent of similarities and dissimilarities among properties that are compared for assessment purposes. In order to obtain a reasonable sample and to reduce sudden price changes or fluctuations, all sales shall be included in the sample that reasonably reflect a true or typical sales price during the period specified in section 39-1-104 (10.2). Sales of personal property exempt pursuant to the provisions of sections 39-3-102, 39-3-103, and 39-3-119 to 39-3-122 shall not be included in any such sample.*

*(b) Each such sale included in the sample shall be coded to indicate a typical, negotiated sale, as screened and verified by the assessor. (39-1-103, C.R.S.)*

*The assessor is required to use sales of real property only in the valuation process.*

*(8)(f) Such true and typical sales shall include only those sales which have been determined on an individual basis to reflect the selling price of the real property only or which have been adjusted on an individual basis to reflect the selling price of the real property only. (39-1-103, C.R.S.)*

Part of the Property Assessment Study is the sales verification analysis. WRA has used the above-cited statutes as a guide in our study of the county's procedures and practices for verifying sales.

EWE reviewed the sales verification procedures in 2024 for Denver County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically EWE selected 65 sales listed as unqualified.

All of the sales in the unqualified sales sample had reasons that were clear and supportable.

For residential, commercial, and vacant land sales with considerations over $100,000, the contractor has examined and reported the ratio of qualified sales to total sales by class and performed the following analyses of unqualified sales:

> The contractor has examined the manner in which sales have been classified as qualified or unqualified, including a listing of each step in the sales verification process, any adjustment procedures, and the county official responsible for making the final decision on qualification.

> The contractor has reviewed with the assessor any analysis indicating that sales data are inadequate, fail to reflect typical properties, or have been disqualified for insufficient cause. In addition, the contractor has reviewed the disqualified sales by assigned code. If there appears to be any inconsistency in the coding, the contractor has conducted further analysis to

determine if the sales included in that code have been assigned appropriately.

## Conclusions

Denver County appears to be doing an adequate job of verifying their sales. EWE agreed with the county's reason for disqualifying each of the sales selected in the sample. There are no recommendations or suggestions.

## Recommendations

No

# ECONOMIC AREA REVIEW AND EVALUATION

## Methodology

Denver County has submitted a written narrative describing the economic areas that make up the county's market areas. Denver County has also submitted a map illustrating these areas. Each of these narratives have been read and analyzed for logic and appraisal sensibility. The maps were also compared to the narrative for consistency between the written description and the map.

## Conclusions

After review and analysis, it has been determined that Denver County has adequately identified homogeneous economic areas comprised of smaller neighborhoods. Each economic area defined is equally subject to a set of economic forces that impact the value of the properties within that geographic area and this has been adequately addressed. Each economic area defined adequately delineates an area that will give "similar values for similar properties in similar areas."

## Recommendations

None

# NATURAL RESOURCES

**Denver County is exempt from the Natural Resources Study.**

# VACANT LAND

## Subdivision Discounting

Subdivisions were reviewed in 2024 in Denver County. The review showed that subdivisions were discounted pursuant to the Colorado Revised Statutes in Article 39-1-103 (14) and by applying the recommended methodology in ARL Vol 3, Chap 4. Subdivision Discounting in the intervening year can be accomplished by reducing the absorption period by one year.

In instances where the number of sales within an approved plat was less than the absorption rate per year calculated for the plat, the absorption period was left unchanged.

## Conclusions

Denver County has implemented proper procedures to adequately estimate absorption periods, discount rates, and lot values for qualifying subdivisions.

## Recommendations

None

# POSSESSORY INTEREST PROPERTIES

## Possessory Interest

Possessory interest property discovery and valuation is described in the Assessor's Reference Library (ARL) Volume 3 section 7 in accordance with the requirements of Chapter 39-1-103 (17)(a) (II) C.R.S. Possessory Interest is defined by the Property Tax Administrator's Publication ARL Volume 3, Chapter 7: A private property interest in government-owned property or the right to the occupancy and use of any benefit in government-owned property that has been granted under lease, permit, license, concession, contract, or other agreement.

Denver County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural and commercial possessory interest properties. The county has also been queried as to their confidence that the possessory interest properties have been discovered and placed on the tax rolls.

## Conclusions

Denver County has implemented a discovery process to place possessory interest properties on the roll. They have also correctly and consistently applied the correct procedures and valuation methods in the valuation of possessory interest properties.

## Recommendations

None

# PERSONAL PROPERTY AUDIT

Denver County was studied for its procedural compliance with the personal property assessment outlined in the Assessor's Reference Library (ARL) Volume 5, and in the State Board of Equalization (SBOE) requirements for the assessment of personal property. The SBOE requires that counties use ARL Volume 5, including current discovery, classification, documentation procedures, current economic lives table, cost factor tables, depreciation table, and level of value adjustment factor table.

The personal property audit standards narrative must be in place and current. A listing of businesses that have been audited by the assessor within the twelve-month period reflected in the plan is given to the auditor. The audited businesses must be in conformity with those described in the plan.

Aggregate ratio will be determined solely from the personal property accounts that have been physically inspected. The minimum assessment sample is one percent or ten schedules, whichever is greater, and the maximum assessment audit sample is 100 schedules.

For the counties having over 100,000 population, WRA selected a sample of all personal property schedules to determine whether the assessor is correctly applying the provisions of law and manuals of the Property Tax Administrator in arriving at the assessment levels of such property. This sample was selected from the personal property schedules audited by the assessor. In no event was the sample selected by the contractor less than 30 schedules. The counties to be included in this study are Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo, and Weld. All other counties received a procedural study.

Denver County is compliant with the guidelines set forth in ARL Volume 5 regarding discovery procedures, using the following methods to discover personal property accounts in the county:

- Public Record Documents
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor

The county uses the Division of Property Taxation (DPT) recommended classification and documentation procedures. The DPT's recommended cost factor tables, depreciation tables and level of value adjustment factor tables are also used.

Denver County submitted their personal property written audit plan and was current for the 2024 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- Accounts with obvious discrepancies
- New businesses filing for the first time
- Accounts with greater than 10% change
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Businesses with no deletions or additions for 2 or more years
- Non-filing Accounts - Best Information Available
- As part of sales tax audits

Denver County's median ratio is 1.00. This is in compliance with the State Board of Equalization (SBOE) compliance requirements which range from .90 to 1.10 with no COD requirements.

## Conclusions

Denver County has employed adequate discovery, classification, documentation, valuation, and auditing procedures for their personal property assessment and is in statistical compliance with SBOE requirements.

## Recommendations

None

# EAST WEST ECONOMETRICS AUDITOR STAFF

**Harry J. Fuller,** *Audit Project Manager*

**Suzanne Howard**, *Audit Administrative Manager*

**Steve Kane**, *Audit Statistician*

**Carl W. Ross**, *Agricultural / Natural Resource Analyst*

**J. Andrew Rodriguez**, *Field Analyst*

# A PPENDICES

**STATISTICAL COMPLIANCE REPORT**
**FOR DENVER COUNTY**
**2024**

## I. OVERVIEW

Denver County is an urban county located along Colorado's Front Range.  The county has a total of 240,078 real property parcels, according to data submitted by the county assessor's office in 2024.  The following provides a breakdown of property classes for this county:
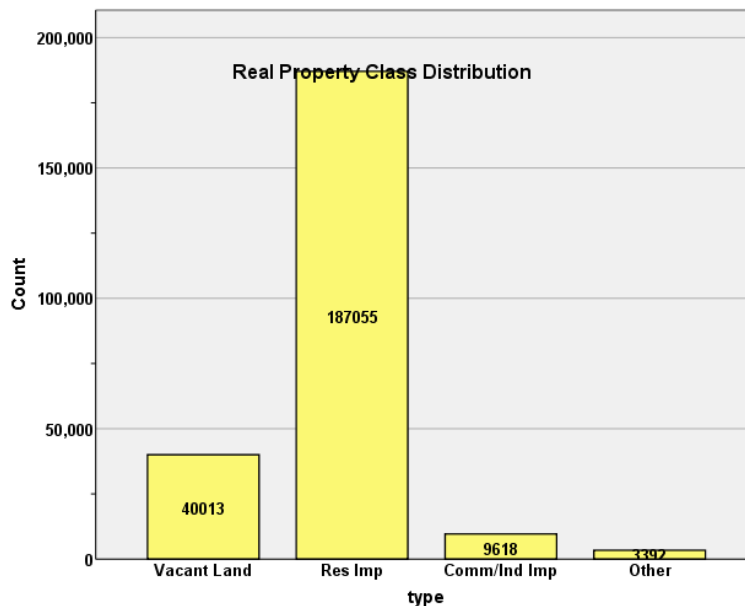


The vacant land class of properties was dominated by residential land.  Residential lots (coded 1112 and 1130) accounted for 65.1% of all vacant land parcels.

For residential improved properties, single family properties accounted for **78.3**% of all residential properties, while condominiums accounted for **18.7%** of all residential properties.  We broke down our residential analysis by both economic area and residential subclass.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison.  Commercial/industrial properties accounted for 4.0% of all such properties in this county.

## II. DATA FILES

The following sales analyses were based on the requirements of the 2024 Colorado Property Assessment Study.  Information was provided by the Denver Assessor's Office in May 2024.  The data included all 5 property record files as specified by the Auditor.

## III. RESIDENTIAL SALES RESULTS

There were 30,307 qualified residential sales in the 24-month sale period ending June 30, 2022. The sales ratio analysis results were as follows:

| | |
|---|---|
| Median | **1.000** |
| Price Related Differential | **1.003** |
| Coefficient of Dispersion | **5.7** |

We stratified the sales ratio results by residential subclass and economic area, as follows:

**SINGLE FAMILY** Ratio Statistics for currtot / tasp
**N = 21,692**

## Ratio Statistics for CURRTOT / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion |
|---|---|---|---|
| 1.00 | .999 | 1.003 | .039 |
| 2.00 | 1.000 | 1.003 | .045 |
| 3.00 | 1.000 | 1.006 | .053 |
| 4.00 | .997 | 1.012 | .073 |
| 5.00 | 1.000 | 1.007 | .071 |
| 6.00 | 1.000 | 1.003 | .041 |
| 7.00 | 1.000 | 1.011 | .070 |
| 8.00 | .999 | 1.010 | .067 |
| 9.00 | .998 | 1.008 | .063 |
| 10.00 | 1.000 | 1.009 | .070 |
| 11.00 | 1.000 | 1.006 | .058 |
| 12.00 | 1.000 | 1.009 | .070 |
| 13.00 | 1.000 | 1.007 | .058 |
| 14.00 | 1.000 | 1.011 | .070 |
| 15.00 | .997 | 1.011 | .065 |
| 16.00 | 1.000 | 1.005 | .052 |
| 17.00 | 1.000 | 1.011 | .070 |
| 18.00 | .996 | 1.012 | .084 |
| 19.00 | 1.000 | 1.007 | .059 |
| 20.00 | .997 | 1.008 | .064 |
| 21.00 | 1.000 | 1.005 | .040 |
| 22.00 | 1.000 | 1.005 | .049 |
| 23.00 | .999 | 1.005 | .056 |
| 24.00 | 1.000 | 1.005 | .050 |
| 25.00 | .999 | 1.004 | .048 |
| 26.00 | 1.000 | 1.005 | .062 |
| 27.00 | 1.002 | 1.007 | .073 |
| 28.00 | .998 | 1.007 | .059 |
| 29.00 | 1.000 | 1.006 | .061 |
| 30.00 | 1.000 | 1.007 | .063 |
| 31.00 | .997 | 1.004 | .060 |
| 32.00 | 1.000 | 1.006 | .054 |
| 33.00 | .998 | 1.008 | .062 |
| 34.00 | 1.000 | 1.011 | .068 |
| 51.00 | 1.000 | 1.006 | .056 |
| 52.00 | .997 | 1.008 | .057 |
| 53.00 | 1.002 | 1.004 | .048 |

| | | | |
|---|---|---|---|
| 54.00 | .997 | 1.006 | .054 |
| 55.00 | 1.000 | 1.008 | .053 |
| 56.00 | 1.000 | 1.006 | .048 |
| 57.00 | 1.000 | 1.015 | .055 |
| 58.00 | 1.000 | 1.006 | .052 |
| 59.00 | 1.000 | 1.004 | .052 |
| Overall | 1.000 | 1.007 | .057 |

**ROWHOUSE/TOWN HOMES** Ratio Statistics for currtot / tasp
**N = 122**

## Ratio Statistics for CURRTOT / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion |
|---|---|---|---|
| 1.00 | 1.128 | 1.025 | .144 |
| Overall | 1.128 | 1.025 | .144 |

**1220** Ratio Statistics for currtot / tasp
**N = 120**
## Ratio Statistics for CURRTOT / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion |
|---|---|---|---|
| 1.00 | 1.104 | 1.034 | .124 |
| 2.00 | 1.067 | 1.013 | .085 |
| Overall | 1.087 | 1.025 | .106 |

**1225** Ratio Statistics for currtot / tasp
**N = 157**

## Ratio Statistics for CURRTOT / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion |
|---|---|---|---|
| 2.00 | 1.060 | 1.031 | .083 |
| 3.00 | 1.060 | .995 | .089 |
| Overall | 1.060 | 1.015 | .085 |

**1230** Ratio Statistics for currtot / tasp
**N = 8,132**

## Ratio Statistics for CURRTOT / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion |
|---|---|---|---|
| 37.00 | 1.000 | 1.004 | .056 |
| 38.00 | 1.000 | 1.004 | .046 |
| 39.00 | .994 | 1.006 | .055 |
| 41.00 | 1.001 | 1.006 | .054 |
| 42.00 | 1.000 | 1.004 | .048 |
| 43.00 | 1.000 | 1.005 | .047 |
| 44.00 | 1.000 | 1.007 | .058 |
| 45.00 | .999 | 1.005 | .054 |
| 46.00 | .999 | 1.007 | .050 |
| 47.00 | 1.000 | 1.000 | .048 |
| 48.00 | 1.000 | 1.006 | .066 |
| 50.00 | 1.000 | 1.011 | .051 |
| 253.00 | .958 | 1.007 | .045 |
| Overall | 1.000 | 1.005 | .052 |

The above ratio statistics were in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall residential sales. The following graph describes further the sales ratio distribution for these properties:
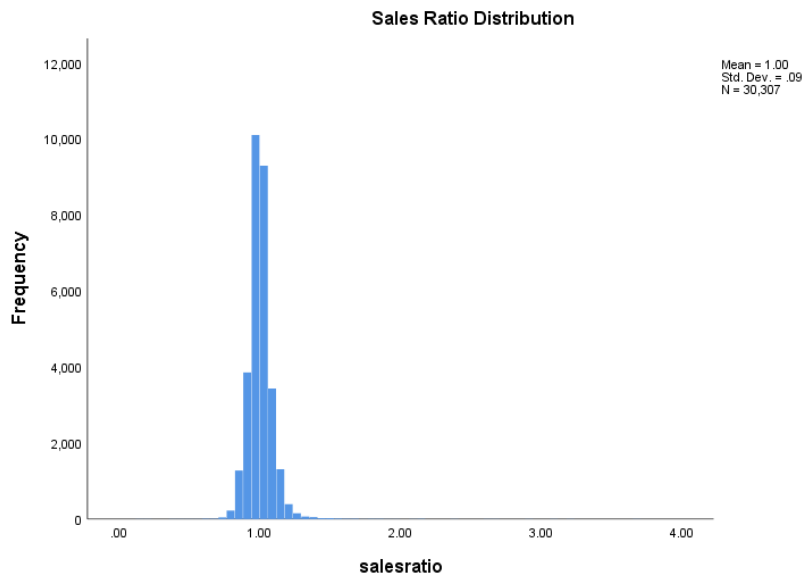


The above graph indicates that the distribution of the sale ratios was within state mandated limits.

**Subclass 1212 PRD Analysis**

We next analyzed residential properties identified as 1212 using the state abstract code system. These include single family residences, town homes and purged manufactured homes. The following indicates the distribution of sales ratios across the sale price spectrum:
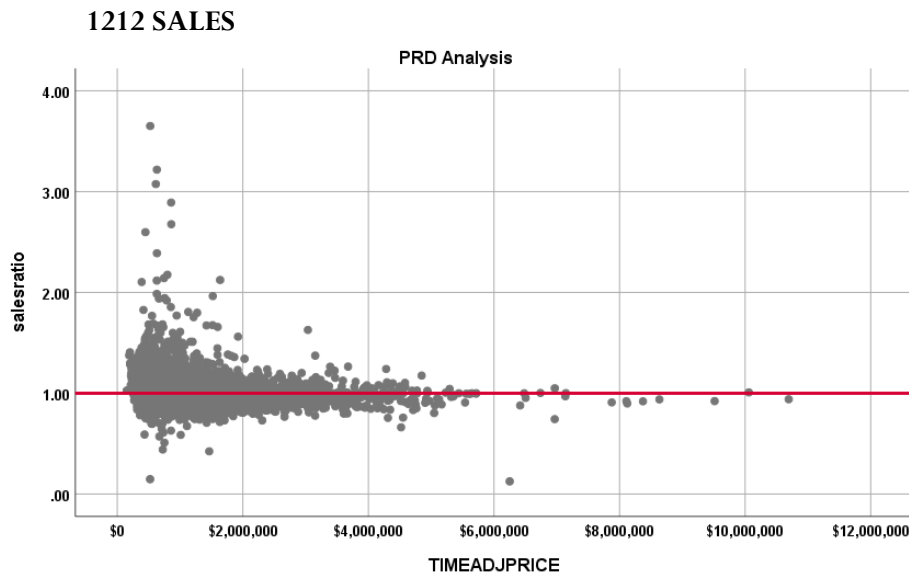
**1212 SALES**

The Price-Related Differential (PRD) for 1212 sales is 1.007, which is within IAAO standards for the PRD. We also performed a regression analysis between the sales ratio and the assessor's current value to further test for regressivity or progressivity in the residential sales valuation, as follows:

### Coefficients[a]

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | .998 | .001 | | 877.335 | .000 |
| | CURRTOT | .00000000586 | .000 | .036 | 5.280 | .000 |

a. Dependent Variable: salesratio

The slope of the line at 0.00000000586 indicates that there is virtually no slope in the regression line, which indicates in turn that sales ratios are similar across the entire sale price array. This indicates no regressivity or progressivity in the residential values assigned by the assessor.

### Case Processing Summary

| | | Count | Percent |
|---|---|---|---|
| SPRec | LT $300K | 112 | 0.5% |
| | $300K to $400K | 882 | 4.1% |
| | $400K to $500K | 2997 | 13.8% |
| | $500K to $600K | 3574 | 16.5% |
| | $600K to $750K | 4616 | 21.3% |
| | $750K to $1000K | 4758 | 21.9% |
| | $1000K to $2000K | 3871 | 17.8% |
| | Over $2000K | 883 | 4.1% |
| Overall | | 21693 | 100.0% |
| Excluded | | 0 | |
| Total | | 21693 | |

### Ratio Statistics for CURRTOT / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|
| LT $300K | 1.087 | 1.005 | .078 | 10.0% |
| $300K to $400K | 1.030 | 1.000 | .058 | 8.6% |
| $400K to $500K | 1.007 | 1.000 | .052 | 8.2% |
| $500K to $600K | 1.000 | 1.000 | .052 | 8.8% |
| $600K to $750K | .999 | 1.000 | .054 | 9.6% |
| $750K to $1000K | .997 | 1.000 | .055 | 9.2% |
| $1000K to $2000K | .994 | 1.001 | .065 | 9.7% |
| Over $2000K | .985 | 1.003 | .062 | 9.0% |
| Overall | 1.000 | 1.007 | .057 | 9.2% |

The above table indicates no evidence of regressivity or progressivity in the sales ratios across sale price range.

## Residential Market Trend Analysis

We next analyzed the residential dataset using the 24-month sale period for any residual market trending and broken down by subclass and economic area, as follows:

**SINGLE FAMILY ANALYSIS**

## Coefficients[a]

| ECONAREA | Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|---|
| 1.00 | 1 | (Constant) | .960 | .004 | | 259.630 | .000 |
| | | SalePeriod | .004 | .000 | .491 | 12.939 | .000 |
| 2.00 | 1 | (Constant) | .964 | .005 | | 197.302 | .000 |
| | | SalePeriod | .003 | .000 | .364 | 8.834 | .000 |
| 3.00 | 1 | (Constant) | .974 | .009 | | 103.507 | .000 |
| | | SalePeriod | .003 | .001 | .180 | 3.781 | .000 |
| 4.00 | 1 | (Constant) | .997 | .013 | | 75.099 | .000 |
| | | SalePeriod | .002 | .001 | .077 | 1.603 | .110 |
| 5.00 | 1 | (Constant) | .975 | .019 | | 52.519 | .000 |
| | | SalePeriod | .002 | .001 | .152 | 1.829 | .069 |
| 6.00 | 1 | (Constant) | .962 | .003 | | 325.286 | .000 |
| | | SalePeriod | .003 | .000 | .408 | 15.627 | .000 |
| 7.00 | 1 | (Constant) | .965 | .010 | | 98.222 | .000 |
| | | SalePeriod | .003 | .001 | .194 | 4.501 | .000 |
| 8.00 | 1 | (Constant) | .986 | .014 | | 69.274 | .000 |
| | | SalePeriod | .002 | .001 | .082 | 1.882 | .060 |
| 9.00 | 1 | (Constant) | .977 | .010 | | 96.701 | .000 |
| | | SalePeriod | .002 | .001 | .159 | 3.106 | .002 |
| 10.00 | 1 | (Constant) | .971 | .008 | | 118.661 | .000 |
| | | SalePeriod | .003 | .001 | .229 | 5.246 | .000 |
| 11.00 | 1 | (Constant) | .962 | .007 | | 147.006 | .000 |
| | | SalePeriod | .003 | .000 | .256 | 6.324 | .000 |
| 12.00 | 1 | (Constant) | .977 | .010 | | 95.321 | .000 |
| | | SalePeriod | .003 | .001 | .168 | 3.518 | .000 |
| 13.00 | 1 | (Constant) | .979 | .010 | | 97.752 | .000 |
| | | SalePeriod | .002 | .001 | .132 | 3.039 | .002 |
| 14.00 | 1 | (Constant) | 1.001 | .011 | | 90.597 | .000 |
| | | SalePeriod | .001 | .001 | .043 | .921 | .358 |
| 15.00 | 1 | (Constant) | .962 | .011 | | 86.176 | .000 |
| | | SalePeriod | .003 | .001 | .196 | 3.512 | .001 |
| 16.00 | 1 | (Constant) | .976 | .006 | | 173.238 | .000 |
| | | SalePeriod | .002 | .000 | .248 | 6.052 | .000 |
| 17.00 | 1 | (Constant) | .979 | .015 | | 66.789 | .000 |
| | | SalePeriod | .003 | .001 | .122 | 2.763 | .006 |
| 18.00 | 1 | (Constant) | .953 | .018 | | 52.036 | .000 |
| | | SalePeriod | .005 | .001 | .221 | 3.982 | .000 |
| 19.00 | 1 | (Constant) | .974 | .007 | | 135.709 | .000 |
| | | SalePeriod | .003 | .001 | .194 | 5.028 | .000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 20.00 | 1 | (Constant) | .974 | .009 | | 108.147 | .000 |
| | | SalePeriod | .002 | .001 | .196 | 3.578 | .000 |
| 21.00 | 1 | (Constant) | .966 | .008 | | 121.106 | .000 |
| | | SalePeriod | .003 | .001 | .354 | 5.228 | .000 |
| 22.00 | 1 | (Constant) | .973 | .004 | | 253.496 | .000 |
| | | SalePeriod | .003 | .000 | .263 | 8.832 | .000 |
| 23.00 | 1 | (Constant) | .963 | .005 | | 205.546 | .000 |
| | | SalePeriod | .003 | .000 | .333 | 9.532 | .000 |
| 24.00 | 1 | (Constant) | .965 | .005 | | 208.103 | .000 |
| | | SalePeriod | .003 | .000 | .320 | 8.459 | .000 |
| 25.00 | 1 | (Constant) | .973 | .006 | | 170.909 | .000 |
| | | SalePeriod | .002 | .000 | .268 | 5.611 | .000 |
| 26.00 | 1 | (Constant) | .969 | .009 | | 110.267 | .000 |
| | | SalePeriod | .003 | .001 | .221 | 4.211 | .000 |
| 27.00 | 1 | (Constant) | .991 | .012 | | 85.874 | .000 |
| | | SalePeriod | .002 | .001 | .139 | 2.887 | .004 |
| 28.00 | 1 | (Constant) | .974 | .009 | | 107.337 | .000 |
| | | SalePeriod | .003 | .001 | .220 | 4.021 | .000 |
| 29.00 | 1 | (Constant) | .964 | .009 | | 101.857 | .000 |
| | | SalePeriod | .003 | .001 | .261 | 4.921 | .000 |
| 30.00 | 1 | (Constant) | .983 | .008 | | 123.926 | .000 |
| | | SalePeriod | .002 | .001 | .151 | 3.278 | .001 |
| 31.00 | 1 | (Constant) | .971 | .009 | | 105.689 | .000 |
| | | SalePeriod | .002 | .001 | .210 | 3.615 | .000 |
| 32.00 | 1 | (Constant) | .979 | .006 | | 168.687 | .000 |
| | | SalePeriod | .002 | .000 | .170 | 4.547 | .000 |
| 33.00 | 1 | (Constant) | .974 | .009 | | 105.898 | .000 |
| | | SalePeriod | .002 | .001 | .211 | 3.578 | .000 |
| 34.00 | 1 | (Constant) | .968 | .014 | | 68.682 | .000 |
| | | SalePeriod | .004 | .001 | .241 | 3.419 | .001 |
| 51.00 | 1 | (Constant) | .969 | .008 | | 114.524 | .000 |
| | | SalePeriod | .003 | .001 | .230 | 4.391 | .000 |
| 52.00 | 1 | (Constant) | .971 | .010 | | 94.026 | .000 |
| | | SalePeriod | .003 | .001 | .244 | 3.784 | .000 |
| 53.00 | 1 | (Constant) | .946 | .004 | | 238.003 | .000 |
| | | SalePeriod | .005 | .000 | .558 | 16.366 | .000 |
| 54.00 | 1 | (Constant) | .968 | .004 | | 218.173 | .000 |
| | | SalePeriod | .002 | .000 | .230 | 7.757 | .000 |
| 55.00 | 1 | (Constant) | .972 | .005 | | 201.383 | .000 |
| | | SalePeriod | .003 | .000 | .262 | 7.868 | .000 |
| 56.00 | 1 | (Constant) | .959 | .006 | | 158.448 | .000 |
| | | SalePeriod | .003 | .000 | .313 | 7.893 | .000 |
| 57.00 | 1 | (Constant) | .956 | .006 | | 165.242 | .000 |
| | | SalePeriod | .004 | .000 | .314 | 8.874 | .000 |
| 58.00 | 1 | (Constant) | .948 | .005 | | 195.851 | .000 |
| | | SalePeriod | .004 | .000 | .356 | 11.526 | .000 |
| 59.00 | 1 | (Constant) | .936 | .006 | | 147.844 | .000 |
| | | SalePeriod | .007 | .001 | .655 | 12.814 | .000 |

a. Dependent Variable: salesratio

## 1215 ANALYSIS
### Coefficients[a]

| ECONAREA | Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|---|
| 1.00 | 1 | (Constant) | 1.007 | .029 | | 34.589 | .000 |
| | | SalePeriod | .016 | .002 | .518 | 6.631 | .000 |

a. Dependent Variable: salesratio

## 1220 ANALYSIS
### Coefficients[a]

| ECONAREA | Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|---|
| 1.00 | 1 | (Constant) | .961 | .041 | | 23.276 | .000 |
| | | SalePeriod | .015 | .003 | .529 | 4.711 | .000 |
| 2.00 | 1 | (Constant) | 1.003 | .026 | | 38.346 | .000 |
| | | SalePeriod | .007 | .002 | .391 | 3.260 | .002 |

a. Dependent Variable: salesratio

## 1225 ANALYSIS
### Coefficients[a]

| ECONAREA | Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|---|
| 2.00 | 1 | (Constant) | .953 | .019 | | 49.313 | .000 |
| | | SalePeriod | .010 | .002 | .476 | 5.721 | .000 |
| 3.00 | 1 | (Constant) | .926 | .052 | | 17.686 | .000 |
| | | SalePeriod | .008 | .004 | .297 | 1.994 | .053 |

a. Dependent Variable: salesratio

## 1230 ANALYSIS
### Coefficients[a]

| ECONAREA | Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|---|
| . | 1 | (Constant) | .956 | .024 | | 40.363 | .000 |
| | | SalePeriod | -.001 | .002 | -.038 | -.342 | .733 |
| 37.00 | 1 | (Constant) | .986 | .006 | | 157.697 | .000 |
| | | SalePeriod | .002 | .000 | .134 | 3.388 | .001 |
| 38.00 | 1 | (Constant) | .986 | .005 | | 189.302 | .000 |
| | | SalePeriod | .002 | .000 | .159 | 4.031 | .000 |
| 39.00 | 1 | (Constant) | .967 | .006 | | 166.843 | .000 |
| | | SalePeriod | .002 | .000 | .219 | 5.048 | .000 |
| 41.00 | 1 | (Constant) | .982 | .005 | | 186.057 | .000 |
| | | SalePeriod | .002 | .000 | .174 | 4.793 | .000 |
| 42.00 | 1 | (Constant) | .968 | .004 | | 263.628 | .000 |
| | | SalePeriod | .003 | .000 | .322 | 10.489 | .000 |
| 43.00 | 1 | (Constant) | .970 | .005 | | 210.798 | .000 |
| | | SalePeriod | .002 | .000 | .261 | 7.198 | .000 |
| 44.00 | 1 | (Constant) | .975 | .005 | | 183.474 | .000 |
| | | SalePeriod | .002 | .000 | .185 | 5.546 | .000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 45.00 | 1 | (Constant) | .972 | .005 | | 208.206 | .000 |
| | | SalePeriod | .002 | .000 | .223 | 7.020 | .000 |
| 46.00 | 1 | (Constant) | .979 | .005 | | 184.062 | .000 |
| | | SalePeriod | .002 | .000 | .147 | 4.241 | .000 |
| 47.00 | 1 | (Constant) | .994 | .005 | | 196.036 | .000 |
| | | SalePeriod | .001 | .000 | .074 | 2.121 | .034 |
| 48.00 | 1 | (Constant) | 1.003 | .008 | | 123.691 | .000 |
| | | SalePeriod | .001 | .001 | .045 | .923 | .356 |
| 50.00 | 1 | (Constant) | .992 | .015 | | 67.669 | .000 |
| | | SalePeriod | .001 | .001 | .067 | .598 | .551 |

a. Dependent Variable: salesratio

The above indicates that market trending was insignificant from either a statistical or a relative magnitude perspective for each subclass and economic area. Based on this analysis, we concluded that Denver County adequately addressed market trending for residential properties.

**Sold/Unsold Analysis**

In terms of the valuation consistency between sold and unsold residential properties, we compared the median change in value between the prior base year and the current base year between sold and unsold groups. The data was analyzed by subclass and economic area, as follows:

**OVERALL ANALYSIS**
**Report**
DIFF

| sold | N | Median | Mean |
|---|---|---|---|
| UNSOLD | 178183 | 1.33 | 1.43 |
| SOLD | 30266 | 1.33 | 1.35 |

## Hypothesis Test Summary

| | Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|---|
| 1 | The distribution of DIFF is the same across categories of sold. | Independent-Samples Mann-Whitney U Test | .391 | Retain the null hypothesis. |

Asymptotic significances are displayed. The significance level is .00.

**SINGLE FAMILY ANALYSIS**
**Report**
DIFF

| ECONAREA | sold | N | Median | Mean |
|---|---|---|---|---|
| 1.00 | UNSOLD | 4147 | 1.40 | 1.44 |
| | SOLD | 105 | 1.40 | 1.40 |
| 2.00 | UNSOLD | 6478 | 1.32 | 1.33 |
| | SOLD | 117 | 1.37 | 1.38 |
| 3.00 | UNSOLD | 3173 | 1.39 | 1.41 |
| | SOLD | 121 | 1.43 | 1.44 |
| 4.00 | UNSOLD | 3359 | 1.41 | 1.42 |
| | SOLD | 220 | 1.45 | 1.51 |

| | | | | |
|---|---|---|---|---|
| 5.00 | UNSOLD | 2053 | 1.38 | 1.39 |
| | SOLD | 35 | 1.39 | 1.38 |
| 6.00 | UNSOLD | 5492 | 1.38 | 2.05 |
| | SOLD | 182 | 1.39 | 1.41 |
| 7.00 | UNSOLD | 3405 | 1.39 | 1.42 |
| | SOLD | 105 | 1.41 | 1.51 |
| 8.00 | UNSOLD | 3595 | 1.36 | 1.38 |
| | SOLD | 89 | 1.41 | 1.51 |
| 9.00 | UNSOLD | 2254 | 1.34 | 1.36 |
| | SOLD | 59 | 1.39 | 1.44 |
| 10.00 | UNSOLD | 3152 | 1.26 | 1.27 |
| | SOLD | 92 | 1.29 | 1.36 |
| 11.00 | UNSOLD | 5512 | 1.35 | 1.35 |
| | SOLD | 166 | 1.42 | 1.49 |
| 12.00 | UNSOLD | 2573 | 1.31 | 1.32 |
| | SOLD | 84 | 1.40 | 1.47 |
| 13.00 | UNSOLD | 3409 | 1.36 | 1.38 |
| | SOLD | 105 | 1.41 | 1.46 |
| 14.00 | UNSOLD | 2990 | 1.35 | 1.37 |
| | SOLD | 75 | 1.38 | 1.49 |
| 15.00 | UNSOLD | 2066 | 1.39 | 1.42 |
| | SOLD | 55 | 1.46 | 1.53 |
| 16.00 | UNSOLD | 5249 | 1.37 | 1.38 |
| | SOLD | 151 | 1.39 | 1.43 |
| 17.00 | UNSOLD | 3376 | 1.30 | 1.33 |
| | SOLD | 97 | 1.34 | 1.42 |
| 18.00 | UNSOLD | 2251 | 1.36 | 1.38 |
| | SOLD | 53 | 1.43 | 1.50 |
| 19.00 | UNSOLD | 5027 | 1.39 | 1.40 |
| | SOLD | 161 | 1.45 | 1.50 |
| 20.00 | UNSOLD | 1982 | 1.33 | 1.36 |
| | SOLD | 86 | 1.41 | 1.47 |
| 21.00 | UNSOLD | 1315 | 1.33 | 1.33 |
| | SOLD | 90 | 1.34 | 1.37 |
| 22.00 | UNSOLD | 4902 | 1.34 | 1.60 |
| | SOLD | 612 | 1.35 | 1.53 |
| 23.00 | UNSOLD | 6609 | 1.35 | 1.35 |
| | SOLD | 193 | 1.40 | 1.45 |
| 24.00 | UNSOLD | 5671 | 1.39 | 1.39 |
| | SOLD | 159 | 1.45 | 1.51 |
| 25.00 | UNSOLD | 3706 | 1.39 | 1.44 |
| | SOLD | 87 | 1.43 | 1.45 |
| 26.00 | UNSOLD | 2768 | 1.30 | 1.32 |
| | SOLD | 57 | 1.33 | 1.36 |
| 27.00 | UNSOLD | 3148 | 1.34 | 1.36 |
| | SOLD | 91 | 1.37 | 1.46 |
| 28.00 | UNSOLD | 3008 | 1.39 | 1.40 |
| | SOLD | 64 | 1.44 | 1.52 |
| 29.00 | UNSOLD | 2599 | 1.41 | 1.42 |
| | SOLD | 69 | 1.45 | 1.49 |
| 30.00 | UNSOLD | 2759 | 1.36 | 1.37 |
| | SOLD | 128 | 1.46 | 1.49 |
| 31.00 | UNSOLD | 1998 | 1.36 | 1.39 |
| | SOLD | 45 | 1.43 | 1.50 |
| 32.00 | UNSOLD | 5074 | 1.30 | 1.32 |
| | SOLD | 139 | 1.32 | 1.38 |
| 33.00 | UNSOLD | 1655 | 1.22 | 1.23 |

| | | | | |
|---|---|---|---|---|
| | SOLD | 55 | 1.28 | 1.38 |
| 34.00 | UNSOLD | 1619 | 1.40 | 1.41 |
| | SOLD | 36 | 1.41 | 1.48 |
| 51.00 | UNSOLD | 1685 | 1.29 | 1.32 |
| | SOLD | 76 | 1.37 | 1.44 |
| 52.00 | UNSOLD | 843 | 1.27 | 1.46 |
| | SOLD | 94 | 1.29 | 1.34 |
| 53.00 | UNSOLD | 2997 | 1.23 | 1.57 |
| | SOLD | 136 | 1.28 | 1.55 |
| 54.00 | UNSOLD | 3872 | 1.27 | 1.28 |
| | SOLD | 293 | 1.25 | 1.34 |
| 55.00 | UNSOLD | 3997 | 1.35 | 2.98 |
| | SOLD | 235 | 1.32 | 1.33 |
| 56.00 | UNSOLD | 1964 | 1.33 | 1.69 |
| | SOLD | 245 | 1.32 | 1.34 |
| 57.00 | UNSOLD | 1970 | 1.30 | 1.37 |
| | SOLD | 236 | 1.29 | 1.33 |
| 58.00 | UNSOLD | 2341 | 1.32 | 1.34 |
| | SOLD | 292 | 1.32 | 1.36 |
| 59.00 | UNSOLD | 1137 | 1.34 | 3.00 |
| | SOLD | 57 | 1.32 | 2.18 |

## 1215 ANALYSIS

### Report

DIFF

| ECONAREA | sold | N | Median | Mean |
|---|---|---|---|---|
| 1.00 | UNSOLD | 2912 | 1.45 | 1.46 |
| | SOLD | 122 | 1.48 | 1.50 |

## 1220 ANALYSIS

### Report

DIFF

| ECONAREA | sold | N | Median | Mean |
|---|---|---|---|---|
| 1.00 | UNSOLD | 504 | 1.44 | 1.46 |
| | SOLD | 59 | 1.43 | 1.46 |
| 2.00 | UNSOLD | 335 | 1.18 | 1.20 |
| | SOLD | 61 | 1.22 | 1.25 |

## 1225 ANALYSIS

### Report

DIFF

| ECONAREA | sold | N | Median | Mean |
|---|---|---|---|---|
| 2.00 | UNSOLD | 1106 | 1.24 | 1.32 |
| | SOLD | 114 | 1.25 | 1.25 |
| 3.00 | UNSOLD | 518 | 1.39 | 2.56 |
| | SOLD | 43 | 1.34 | 1.37 |

## 1230 ANALYSIS

### Report

DIFF

| ECONAREA | sold | N | Median | Mean |
|---|---|---|---|---|
| 37.00 | UNSOLD | 2331 | 1.12 | 1.13 |
| | SOLD | 633 | 1.12 | 1.14 |
| 38.00 | UNSOLD | 3179 | 1.14 | 1.14 |
| | SOLD | 625 | 1.15 | 1.16 |
| 39.00 | UNSOLD | 2087 | 1.20 | 1.20 |
| | SOLD | 507 | 1.23 | 1.25 |

| 41.00 | UNSOLD | 3622 | 1.30 | 1.36 |
|-------|--------|------|------|------|
|       | SOLD   | 741  | 1.31 | 1.31 |
| 42.00 | UNSOLD | 5085 | 1.31 | 1.34 |
|       | SOLD   | 953  | 1.33 | 1.34 |
| 43.00 | UNSOLD | 3253 | 1.29 | 1.29 |
|       | SOLD   | 712  | 1.31 | 1.32 |
| 44.00 | UNSOLD | 3571 | 1.20 | 1.21 |
|       | SOLD   | 871  | 1.23 | 1.24 |
| 45.00 | UNSOLD | 3417 | 1.21 | 1.21 |
|       | SOLD   | 943  | 1.21 | 1.21 |
| 46.00 | UNSOLD | 2293 | 1.20 | 1.21 |
|       | SOLD   | 814  | 1.20 | 1.20 |
| 47.00 | UNSOLD | 1674 | 1.15 | 1.17 |
|       | SOLD   | 822  | 1.11 | 1.13 |
| 48.00 | UNSOLD | 2236 | 1.27 | 1.27 |
|       | SOLD   | 428  | 1.28 | 1.31 |
| 50.00 | UNSOLD | 319  | 1.11 | 1.14 |
|       | SOLD   | 81   | 1.15 | 1.19 |

The above results indicate that sold and unsold residential properties were valued in a consistent manner.

## IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 584 qualified commercial/industrial sales in the 24-month sale period ending June 30, 2022. We performed the following sales ratio analysis, as follows:

| | |
|---|---|
| **Median** | 0.969 |
| **Price Related Differential** | 1.033 |
| **Coefficient of Dispersion** | 14.1 |

The above table indicates that the Denver County commercial/industrial sale ratios were in compliance with the SBOE standards. The following histogram and scatter plot describe the sales ratio distribution further:

Commercial Sale Price by Sales Ratio
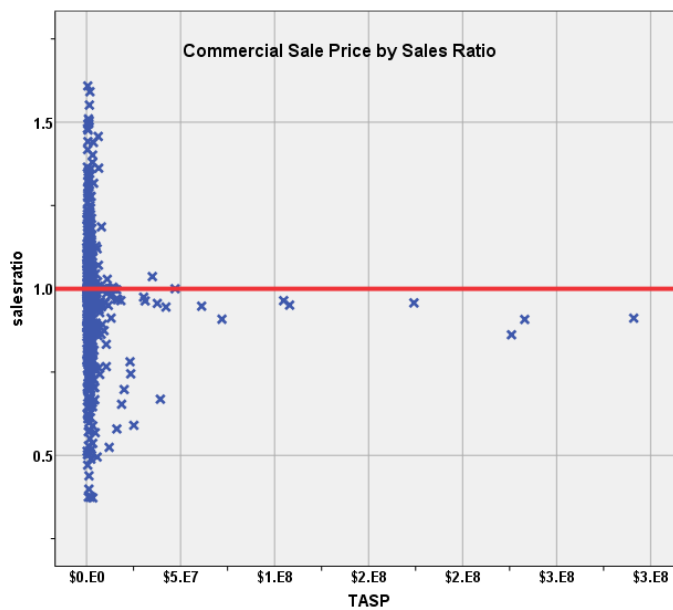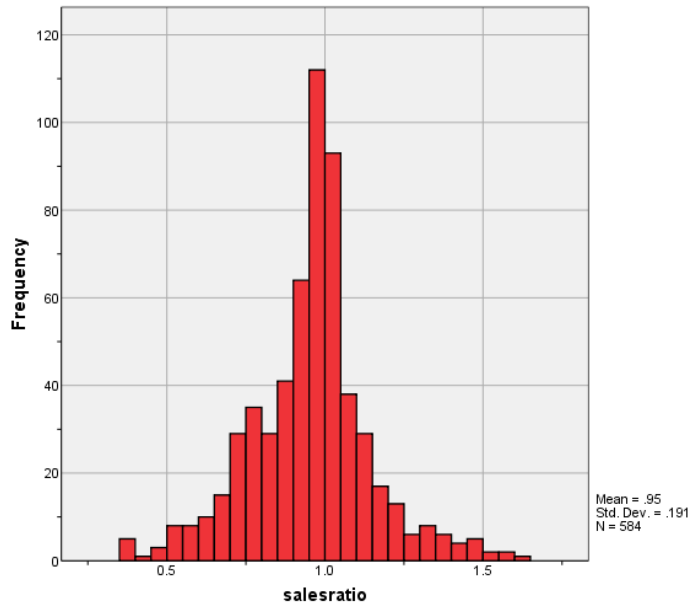
## Commercial/Industrial Market Trend Analysis

The commercial/industrial sales were analyzed, examining the sale ratios across the 24-month sale period with the following results:

## Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | .872 | .015 | | 60.120 | .000 |
| | SalePeriod | .008 | .001 | .258 | 6.451 | .000 |

a. Dependent Variable: salesratio

Commercial Market Trend Analysis
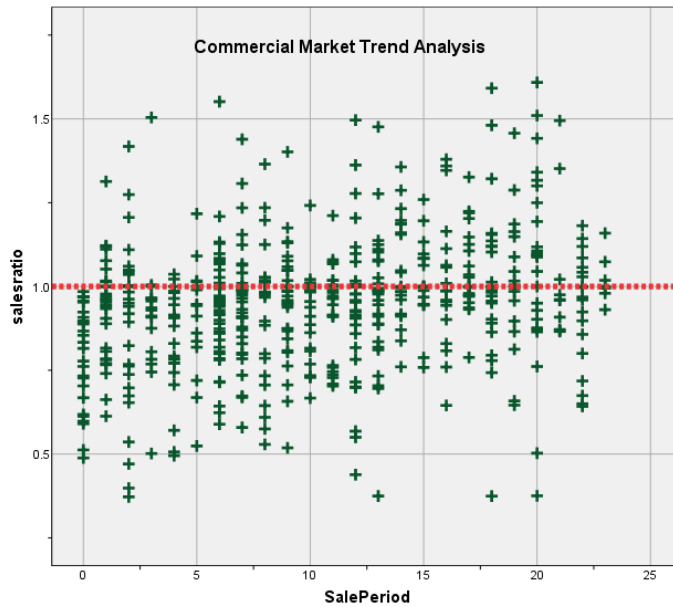
There was a statistically significant trend, but when the market trend analysis was stratified by subclass, 7 of the 8 commercial subclasses had market trends that were not statistically significant; therefore, we concluded that the assessor has overall adequately considered market trending adjustments as part of the commercial/industrial valuation.

**Sold/Unsold Analysis**

We compared the median change in value between the prior base year and the current base year for unsold and sold commercial/industrial properties overall and by subclass, as follows:

**Report**

DIFF

| sold | N | Median | Mean |
|---|---|---|---|
| UNSOLD | 9405 | 1.15 | 1.18 |
| SOLD | 568 | 1.23 | 1.31 |

**Report**

DIFF

| ABSTRIMP | sold | N | Median | Mean |
|---|---|---|---|---|
| 2212.00 | UNSOLD | 1542 | 1.16 | 1.20 |
| | SOLD | 8 | 1.30 | 1.27 |
| 2220.00 | UNSOLD | 2016 | 1.16 | 1.18 |
| | SOLD | 15 | 1.25 | 1.28 |
| 2225.00 | UNSOLD | 856 | 1.18 | 1.22 |
| | SOLD | 2 | 1.38 | 1.38 |
| 2230.00 | UNSOLD | 1582 | 1.14 | 1.18 |
| | SOLD | 10 | 1.15 | 1.29 |
| 2235.00 | UNSOLD | 2165 | 1.15 | 1.19 |
| | SOLD | 19 | 1.13 | 1.18 |
| 3215.00 | UNSOLD | 142 | 1.13 | 1.20 |
| | SOLD | 1 | 1.05 | 1.05 |

The above results indicated that sold and unsold commercial/industrial properties were valued consistently.

## V. VACANT LAND SALE RESULTS

There were 719 qualified vacant land sales in the 24-month sale period ending June 30, 2022.  The following sales ratio analysis was performed:

| Median | 0.953 |
|---|---|
| Price Related Differential | 1.065 |
| Coefficient of Dispersion | 15.3 |

The above ratio statistics were in compliance overall with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall vacant land sales.  The following graphs describe further the sales ratio distribution for all of these properties:
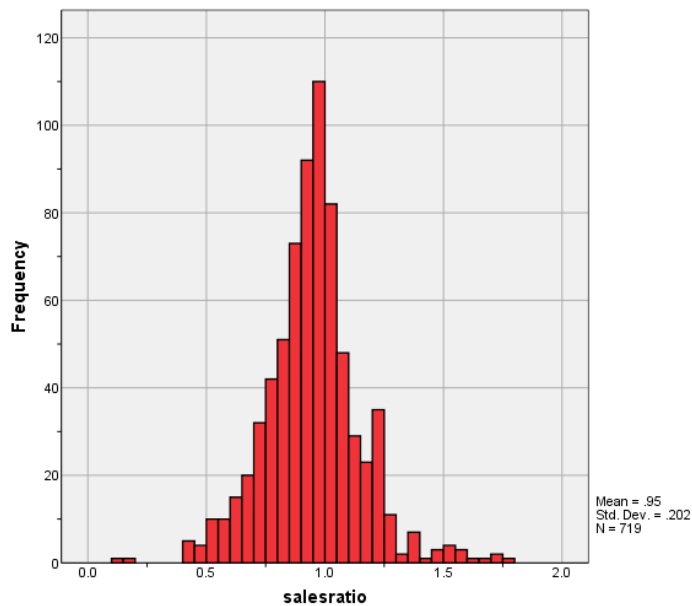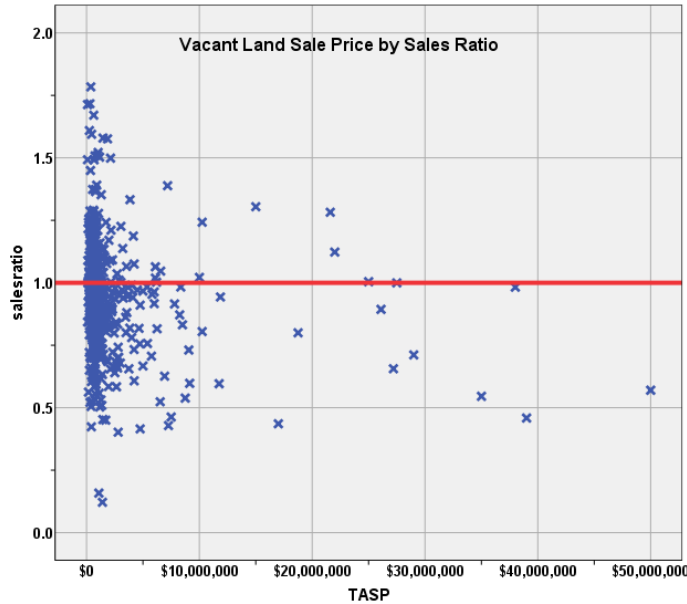
The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits.  No sales were trimmed.

**Vacant Land Market Trend Analysis**

We next analyzed the vacant land dataset using the 24-month sale period, with the following results:

## Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | .822 | .014 | | 58.289 | .000 |
| | SalePeriod | .011 | .001 | .360 | 10.324 | .000 |

a. Dependent Variable: salesratio
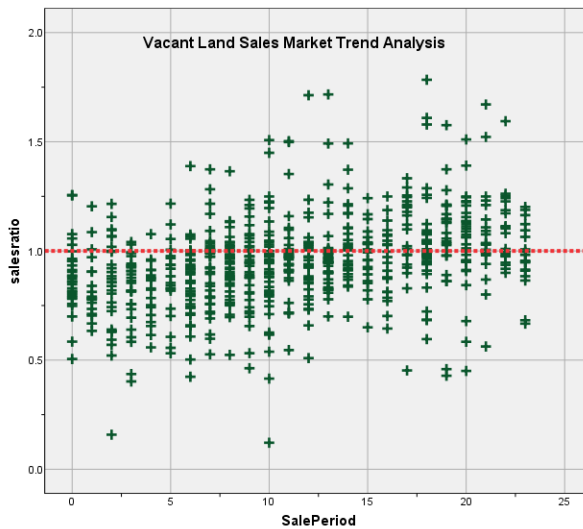
There was a clear statistically significant trend in the vacant land data. **We have consulted with the assessor concerning this residual market trending in the vacant land sales.**

**Sold/Unsold Analysis**

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in actual value for the prior base year and the current base year between each group. We stratified the vacant land properties by neighborhoods with at least 10 sales and found overall consistency. The following results present the overall comparison results:

**Report**

DIFF

| NBHD | sold | N | Median | Mean |
|------|------|-----|--------|------|
| 4 | UNSOLD | 416 | 1.00 | 1.04 |
| | SOLD | 13 | 1.00 | 1.18 |
| 211 | UNSOLD | 176 | 1.29 | 1.24 |
| | SOLD | 13 | 1.36 | 1.38 |
| 212 | UNSOLD | 175 | 1.36 | 1.21 |
| | SOLD | 16 | 1.36 | 1.28 |
| 218 | UNSOLD | 250 | 1.18 | 1.16 |
| | SOLD | 10 | 1.18 | 1.17 |
| 244 | UNSOLD | 72 | 1.16 | 1.17 |
| | SOLD | 11 | 1.16 | 1.32 |
| 266 | UNSOLD | 159 | .84 | .92 |
| | SOLD | 14 | .84 | .86 |
| 504 | UNSOLD | 533 | 1.09 | 1.13 |
| | SOLD | 11 | 1.16 | 1.39 |
| 508 | UNSOLD | 73 | 1.12 | 1.20 |
| | SOLD | 11 | 1.30 | 1.36 |
| 526 | UNSOLD | 342 | 1.18 | 1.16 |
| | SOLD | 53 | 1.23 | 1.25 |
| 529 | UNSOLD | 76 | 1.26 | 1.25 |
| | SOLD | 13 | 1.26 | 1.27 |
| 530 | UNSOLD | 268 | 1.16 | 1.17 |
| | SOLD | 48 | 1.20 | 1.29 |
| 531 | UNSOLD | 150 | 1.21 | 1.17 |
| | SOLD | 11 | 1.21 | 1.21 |
| 532 | UNSOLD | 397 | 1.20 | 1.16 |
| | SOLD | 25 | 1.20 | 1.22 |
| 543 | UNSOLD | 216 | 1.00 | 1.09 |
| | SOLD | 10 | 1.31 | 1.29 |
| 544 | UNSOLD | 251 | 1.50 | 1.42 |
| | SOLD | 10 | 1.50 | 1.43 |
| 545 | UNSOLD | 206 | 1.16 | 1.15 |
| | SOLD | 17 | 1.16 | 1.18 |
| 606 | UNSOLD | 451 | 1.25 | 1.21 |
| | SOLD | 13 | 1.25 | 1.27 |
| 674 | UNSOLD | 166 | 1.29 | 1.26 |
| | SOLD | 15 | 1.29 | 1.29 |
| 680 | UNSOLD | 69 | 1.47 | 1.49 |
| | SOLD | 10 | 1.47 | 1.52 |
| 681 | UNSOLD | 137 | 1.47 | 1.38 |
| | SOLD | 13 | 1.37 | 1.40 |

There was sufficient consistency in many of the neighborhoods that indicated the assessor was valuing sold and unsold vacant land properties consistently in Denver County.

**V. CONCLUSIONS**

Based on this 2024 audit statistical analysis, residential, commercial, and vacant land properties were found to be in compliance with state guidelines. **As noted, have consulted with the county assessor concerning the evidence of significant market trending in the vacant land sale data.**

## STATISTICAL ABSTRACT
### Residential

**Ratio Statistics for CURRTOT / TASP**

| ABSTRPRD | Mean | 95% Confidence Interval for Mean | | Median | 95% Confidence Interval for Median | | Actual Coverage | Weighted Mean | 95% Confidence Interval for Weighted Mean | | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Lower Bound | Upper Bound | | Lower Bound | Upper Bound | | | Lower Bound | Upper Bound | | | Mean Centered |
| 1212 | 1.003 | 1.002 | 1.004 | 1.000 | 1.000 | 1.000 | 95.1% | .997 | .995 | .998 | 1.007 | .057 | 9.2% |
| 1215 | 1.165 | 1.126 | 1.204 | 1.128 | 1.075 | 1.163 | 96.3% | 1.137 | 1.100 | 1.174 | 1.025 | .144 | 18.5% |
| 1220 | 1.100 | 1.070 | 1.129 | 1.087 | 1.063 | 1.118 | 96.5% | 1.073 | 1.042 | 1.104 | 1.025 | .106 | 14.8% |
| 1225 | 1.037 | 1.014 | 1.059 | 1.060 | 1.045 | 1.075 | 96.2% | 1.021 | .960 | 1.082 | 1.015 | .085 | 13.8% |
| 1230 | 1.001 | .999 | 1.002 | 1.000 | .999 | 1.000 | 95.0% | .995 | .992 | .997 | 1.006 | .052 | 7.5% |

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

### Commercial

**Ratio Statistics for CURRTOT / TASP**

| Mean | 95% Confidence Interval for Mean | | Median | 95% Confidence Interval for Median | | Actual Coverage | Weighted Mean | 95% Confidence Interval for Weighted Mean | | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lower Bound | Upper Bound | | Lower Bound | Upper Bound | | | Lower Bound | Upper Bound | | | Mean Centered |
| .952 | .936 | .967 | .969 | .958 | .982 | 95.7% | .922 | .904 | .940 | 1.033 | .141 | 20.1% |

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

### Vacant Land

**Ratio Statistics for CURRLND / TASP**

| Mean | 95% Confidence Interval for Mean | | Median | 95% Confidence Interval for Median | | Actual Coverage | Weighted Mean | 95% Confidence Interval for Weighted Mean | | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lower Bound | Upper Bound | | Lower Bound | Upper Bound | | | Lower Bound | Upper Bound | | | Mean Centered |
| .948 | .933 | .963 | .952 | .939 | .966 | 95.6% | .871 | .820 | .921 | 1.089 | .154 | 21.3% |

The confidence interval for the median is constructed without any distribution assumptions. The actual coverage level may be greater than the specified level. Other confidence intervals are constructed by assuming a Normal distribution for the ratios.

## Residential Median Ratio Stratification

**Improvement Age**

## Case Processing Summary

| ABSTRPRD | | | Count | Percent |
|---|---|---|---|---|
| 1212 | AgeRec | 0 | 16039 | 73.9% |
| | | Over 100 | 632 | 2.9% |
| | | 75 to 100 | 666 | 3.1% |
| | | 50 to 75 | 1460 | 6.7% |
| | | 25 to 50 | 363 | 1.7% |
| | | 5 to 25 | 908 | 4.2% |
| | | 5 or Newer | 1625 | 7.5% |
| | Overall | | 21693 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 21693 | |
| 1215 | AgeRec | 0 | 102 | 83.6% |
| | | Over 100 | 6 | 4.9% |
| | | 75 to 100 | 5 | 4.1% |
| | | 50 to 75 | 9 | 7.4% |
| | Overall | | 122 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 122 | |
| 1220 | AgeRec | 0 | 113 | 94.2% |
| | | Over 100 | 5 | 4.2% |
| | | 75 to 100 | 1 | 0.8% |
| | | 50 to 75 | 1 | 0.8% |
| | Overall | | 120 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 120 | |
| 1225 | AgeRec | 0 | 137 | 87.3% |
| | | Over 100 | 3 | 1.9% |
| | | 75 to 100 | 1 | 0.6% |
| | | 50 to 75 | 9 | 5.7% |
| | | 25 to 50 | 4 | 2.5% |
| | | 5 or Newer | 3 | 1.9% |
| | Overall | | 157 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 157 | |
| 1230 | AgeRec | 0 | 6568 | 80.0% |
| | | Over 100 | 92 | 1.1% |
| | | 75 to 100 | 38 | 0.5% |
| | | 50 to 75 | 364 | 4.4% |
| | | 25 to 50 | 445 | 5.4% |
| | | 5 to 25 | 325 | 4.0% |
| | | 5 or Newer | 383 | 4.7% |
| | Overall | | 8215 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 8215 | |

## Ratio Statistics for CURRTOT / TASP

| ABSTRPRD | Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|---|
| 1212 | 0 | 1.000 | 1.006 | .057 | 8.8% |
| | Over 100 | .993 | 1.012 | .070 | 10.5% |
| | 75 to 100 | .996 | 1.010 | .063 | 9.6% |
| | 50 to 75 | .999 | 1.004 | .058 | 10.5% |
| | 25 to 50 | .998 | 1.009 | .050 | 7.3% |
| | 5 to 25 | .998 | 1.003 | .048 | 6.6% |
| | 5 or Newer | 1.000 | 1.012 | .050 | 12.6% |
| | Overall | 1.000 | 1.007 | .057 | 9.2% |
| 1215 | 0 | 1.114 | 1.023 | .148 | 20.1% |
| | Over 100 | 1.248 | 1.014 | .130 | 18.2% |
| | 75 to 100 | 1.000 | 1.062 | .135 | 31.2% |
| | 50 to 75 | 1.167 | 1.006 | .071 | 10.0% |
| | Overall | 1.128 | 1.025 | .144 | 19.4% |
| 1220 | 0 | 1.090 | 1.025 | .106 | 15.0% |
| | Over 100 | 1.075 | 1.008 | .059 | 9.6% |
| | 75 to 100 | 1.037 | 1.000 | .000 | . |
| | 50 to 75 | 1.421 | 1.000 | .000 | . |
| | Overall | 1.087 | 1.025 | .106 | 15.0% |
| 1225 | 0 | 1.060 | .996 | .079 | 12.3% |
| | Over 100 | .967 | 1.029 | .090 | 13.5% |
| | 75 to 100 | 1.112 | 1.000 | .000 | . |
| | 50 to 75 | 1.012 | 1.014 | .076 | 11.7% |
| | 25 to 50 | .996 | 1.515 | .265 | 45.9% |
| | 5 or Newer | 1.051 | .941 | .081 | 14.3% |
| | Overall | 1.060 | 1.015 | .085 | 13.7% |
| 1230 | 0 | 1.000 | 1.005 | .052 | 7.5% |
| | Over 100 | .979 | 1.010 | .071 | 9.8% |
| | 75 to 100 | .993 | 1.004 | .058 | 7.7% |
| | 50 to 75 | .995 | 1.004 | .058 | 8.0% |
| | 25 to 50 | .997 | 1.007 | .057 | 8.0% |
| | 5 to 25 | .995 | 1.002 | .048 | 6.8% |
| | 5 or Newer | .994 | 1.014 | .036 | 5.4% |
| | Overall | 1.000 | 1.006 | .052 | 7.5% |

## Improvement Size

## Case Processing Summary

| ABSTRPRD | | | Count | Percent |
|---|---|---|---|---|
| 1212 | ImpSFRec | 0 | 16039 | 73.9% |
| | | LE 500 sf | 5 | 0.0% |
| | | 500 to 1,000 sf | 1079 | 5.0% |
| | | 1,000 to 1,500 sf | 1844 | 8.5% |
| | | 1,500 to 2,000 sf | 1197 | 5.5% |
| | | 2,000 to 3,000 sf | 1107 | 5.1% |
| | | 3,000 sf or Higher | 422 | 1.9% |
| | Overall | | 21693 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 21693 | |
| 1215 | ImpSFRec | 0 | 102 | 83.6% |
| | | 1,000 to 1,500 sf | 3 | 2.5% |

| | | | | |
|---|---|---|---|---|
| | | 1,500 to 2,000 sf | 5 | 4.1% |
| | | 2,000 to 3,000 sf | 11 | 9.0% |
| | | 3,000 sf or Higher | 1 | 0.8% |
| | Overall | | 122 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 122 | |
| 1220 | ImpSFRec | 0 | 113 | 94.2% |
| | | 2,000 to 3,000 sf | 2 | 1.7% |
| | | 3,000 sf or Higher | 5 | 4.2% |
| | Overall | | 120 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 120 | |
| 1225 | ImpSFRec | 0 | 137 | 87.3% |
| | | 3,000 sf or Higher | 20 | 12.7% |
| | Overall | | 157 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 157 | |
| 1230 | ImpSFRec | 0 | 6568 | 80.0% |
| | | LE 500 sf | 101 | 1.2% |
| | | 500 to 1,000 sf | 802 | 9.8% |
| | | 1,000 to 1,500 sf | 531 | 6.5% |
| | | 1,500 to 2,000 sf | 162 | 2.0% |
| | | 2,000 to 3,000 sf | 43 | 0.5% |
| | | 3,000 sf or Higher | 8 | 0.1% |
| | Overall | | 8215 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 8215 | |

## Ratio Statistics for CURRTOT / TASP

| ABSTRPRD | Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|---|
| 1212 | 0 | 1.000 | 1.006 | .057 | 8.8% |
| | LE 500 sf | 1.000 | 1.006 | .027 | 5.4% |
| | 500 to 1,000 sf | .998 | 1.006 | .057 | 8.0% |
| | 1,000 to 1,500 sf | .996 | 1.009 | .051 | 8.0% |
| | 1,500 to 2,000 sf | .999 | 1.005 | .047 | 7.4% |
| | 2,000 to 3,000 sf | 1.000 | 1.010 | .061 | 12.7% |
| | 3,000 sf or Higher | 1.000 | 1.026 | .084 | 20.5% |
| | Overall | 1.000 | 1.007 | .057 | 9.2% |
| 1215 | 0 | 1.114 | 1.023 | .148 | 20.1% |
| | 1,000 to 1,500 sf | 1.193 | .999 | .129 | 25.6% |
| | 1,500 to 2,000 sf | 1.210 | 1.003 | .074 | 11.0% |
| | 2,000 to 3,000 sf | 1.058 | 1.034 | .151 | 23.2% |
| | 3,000 sf or Higher | 1.136 | 1.000 | .000 | . |
| | Overall | 1.128 | 1.025 | .144 | 19.4% |
| 1220 | 0 | 1.090 | 1.025 | .106 | 15.0% |
| | 2,000 to 3,000 sf | 1.013 | 1.006 | .061 | 8.6% |
| | 3,000 sf or Higher | 1.082 | 1.022 | .106 | 17.4% |
| | Overall | 1.087 | 1.025 | .106 | 15.0% |
| 1225 | 0 | 1.060 | .996 | .079 | 12.3% |
| | 3,000 sf or Higher | 1.013 | 1.155 | .121 | 20.9% |
| | Overall | 1.060 | 1.015 | .085 | 13.7% |
| 1230 | 0 | 1.000 | 1.005 | .052 | 7.5% |

| | | | | | |
|---|---|---|---|---|---|
| LE 500 sf | .975 | 1.012 | .047 | 7.1% |
| 500 to 1,000 sf | .995 | 1.006 | .050 | 7.2% |
| 1,000 to 1,500 sf | .995 | 1.008 | .051 | 7.0% |
| 1,500 to 2,000 sf | .991 | 1.020 | .052 | 7.6% |
| 2,000 to 3,000 sf | 1.000 | 1.018 | .083 | 12.3% |
| 3,000 sf or Higher | 1.023 | 1.005 | .058 | 7.6% |
| Overall | 1.000 | 1.006 | .052 | 7.5% |

**Improvement Quality**

## Case Processing Summary

| ABSTRPRD | | | Count | Percent |
|---|---|---|---|---|
| 1212 | QUALITY | | 16039 | 73.9% |
| | | A | 210 | 1.0% |
| | | A+ | 1 | 0.0% |
| | | B | 2065 | 9.5% |
| | | B+ | 132 | 0.6% |
| | | C | 3160 | 14.6% |
| | | C+ | 2 | 0.0% |
| | | D | 67 | 0.3% |
| | | X | 15 | 0.1% |
| | | X+ | 2 | 0.0% |
| | Overall | | 21693 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 21693 | |
| 1215 | QUALITY | | 102 | 83.6% |
| | | C | 19 | 15.6% |
| | | C+ | 1 | 0.8% |
| | Overall | | 122 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 122 | |
| 1220 | QUALITY | | 113 | 94.2% |
| | | C | 7 | 5.8% |
| | Overall | | 120 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 120 | |
| 1225 | QUALITY | | 137 | 87.3% |
| | | A | 1 | 0.6% |
| | | B | 1 | 0.6% |
| | | C | 16 | 10.2% |
| | | D | 1 | 0.6% |
| | | X | 1 | 0.6% |
| | Overall | | 157 | 100.0% |
| | Excluded | | 0 | |
| | Total | | 157 | |
| 1230 | QUALITY | | 6568 | 80.0% |
| | | A | 105 | 1.3% |
| | | A+ | 5 | 0.1% |
| | | B | 572 | 7.0% |
| | | B+ | 14 | 0.2% |
| | | C | 918 | 11.2% |
| | | D | 29 | 0.4% |

| | X | 4 | 0.0% |
|---|---|---|---|
| | Overall | 8215 | 100.0% |
| | Excluded | 0 | |
| | Total | 8215 | |

## Ratio Statistics for CURRTOT / TASP

| ABSTRPRD | Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|---|
| 1212 | | 1.000 | 1.006 | .057 | 8.8% |
| | A | 1.000 | 1.017 | .067 | 14.8% |
| | A+ | 1.005 | 1.000 | .000 | . |
| | B | 1.000 | 1.011 | .053 | 12.3% |
| | B+ | 1.000 | 1.008 | .063 | 9.5% |
| | C | .996 | 1.006 | .056 | 8.6% |
| | C+ | .958 | 1.005 | .011 | 1.6% |
| | D | .979 | 1.006 | .068 | 8.9% |
| | X | .987 | 1.005 | .061 | 9.7% |
| | X+ | .935 | 1.004 | .014 | 2.0% |
| | Overall | 1.000 | 1.007 | .057 | 9.2% |
| 1215 | | 1.114 | 1.023 | .148 | 20.1% |
| | C | 1.163 | 1.025 | .109 | 14.9% |
| | C+ | 1.623 | 1.000 | .000 | . |
| | Overall | 1.128 | 1.025 | .144 | 19.4% |
| 1220 | | 1.090 | 1.025 | .106 | 15.0% |
| | C | 1.075 | 1.021 | .094 | 15.4% |
| | Overall | 1.087 | 1.025 | .106 | 15.0% |
| 1225 | | 1.060 | .996 | .079 | 12.3% |
| | A | 1.099 | 1.000 | .000 | . |
| | B | .845 | 1.000 | .000 | . |
| | C | 1.010 | 1.560 | .123 | 22.6% |
| | D | 1.173 | 1.000 | .000 | . |
| | X | 1.051 | 1.000 | .000 | . |
| | Overall | 1.060 | 1.015 | .085 | 13.7% |
| 1230 | | 1.000 | 1.005 | .052 | 7.5% |
| | A | .962 | 1.014 | .052 | 8.5% |
| | A+ | .976 | .978 | .057 | 8.3% |
| | B | .997 | 1.001 | .047 | 6.9% |
| | B+ | .983 | 1.000 | .027 | 3.7% |
| | C | .997 | 1.006 | .053 | 7.4% |
| | D | .985 | 1.011 | .061 | 9.4% |
| | X | .956 | 1.006 | .039 | 5.5% |
| | Overall | 1.000 | 1.006 | .052 | 7.5% |

## Improvement Condition

## Case Processing Summary

| ABSTRPRD | | | Count | Percent |
|---|---|---|---|---|
| 1212 | CONDITION | 1 | 17 | 0.3% |
| | | 2 | 84 | 1.5% |
| | | 3 | 3448 | 61.7% |
| | | 4 | 2021 | 36.2% |
| | | 5 | 8 | 0.1% |
| | | 7 | 7 | 0.1% |

|  |  |  |  |  |
|---|---|---|---|---|
|  | Overall |  | 5585 | 100.0% |
|  | Excluded |  | 16108 |  |
|  | Total |  | 21693 |  |
| 1215 | Overall |  | 0 | 100.0% |
|  | Excluded |  | 122 |  |
|  | Total |  | 122 |  |
| 1220 | Overall |  | 0 | 100.0% |
|  | Excluded |  | 120 |  |
|  | Total |  | 120 |  |
| 1225 | Overall |  | 0 | 100.0% |
|  | Excluded |  | 157 |  |
|  | Total |  | 157 |  |
| 1230 | CONDITION | 2 | 5 | 0.3% |
|  |  | 3 | 956 | 58.1% |
|  |  | 4 | 685 | 41.6% |
|  | Overall |  | 1646 | 100.0% |
|  | Excluded |  | 6569 |  |
|  | Total |  | 8215 |  |

## Ratio Statistics for CURRTOT / TASP

| ABSTRPRD | Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|---|
| 1212 | 1 | 1.016 | 1.018 | .064 | 8.8% |
|  | 2 | 1.000 | 1.039 | .088 | 21.9% |
|  | 3 | .998 | 1.008 | .059 | 10.4% |
|  | 4 | .999 | 1.008 | .048 | 9.5% |
|  | 5 | .994 | .987 | .037 | 6.0% |
|  | 7 | .976 | 1.055 | .073 | 10.0% |
|  | Overall | .998 | 1.008 | .056 | 10.4% |
| 1230 | 2 | .991 | .989 | .053 | 9.7% |
|  | 3 | .997 | 1.006 | .053 | 7.6% |
|  | 4 | .993 | 1.010 | .049 | 6.9% |
|  | Overall | .994 | 1.009 | .052 | 7.4% |

**Commercial Median Ratio Stratification**

**Sale Price**

## Case Processing Summary

|  |  | Count | Percent |
|---|---|---|---|
| SPRec | $50K to $100K | 1 | 0.2% |
|  | $100K to $150K | 2 | 0.3% |
|  | $150K to $200K | 5 | 0.9% |
|  | $200K to $300K | 6 | 1.0% |
|  | $300K to $500K | 46 | 7.9% |
|  | $500K to $750K | 65 | 11.1% |
|  | $750K to $1,000K | 73 | 12.5% |
|  | Over $1,000K | 386 | 66.1% |
| Overall |  | 584 | 100.0% |
| Excluded |  | 0 |  |
| Total |  | 584 |  |

## Ratio Statistics for CURRTOT / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|
| $50K to $100K | 1.124 | 1.000 | .000 | . |
| $100K to $150K | .935 | .994 | .057 | 8.1% |
| $150K to $200K | .888 | 1.001 | .076 | 12.3% |
| $200K to $300K | .921 | 1.009 | .183 | 25.7% |
| $300K to $500K | 1.000 | 1.001 | .115 | 16.5% |
| $500K to $750K | .999 | .999 | .171 | 22.7% |
| $750K to $1,000K | .983 | 1.002 | .126 | 19.1% |
| Over $1,000K | .959 | 1.019 | .140 | 19.8% |
| Overall | .969 | 1.033 | .141 | 19.8% |

**Vacant Land Median Ratio Stratification**

**Sale Price**

## Case Processing Summary

|  |  | Count | Percent |
|---|---|---|---|
| SPRec | $50K to $100K | 3 | 0.4% |
|  | $100K to $150K | 5 | 0.7% |
|  | $150K to $200K | 6 | 0.8% |
|  | $200K to $300K | 37 | 5.1% |
|  | $300K to $500K | 93 | 12.9% |
|  | $500K to $750K | 226 | 31.4% |
|  | $750K to $1,000K | 125 | 17.4% |
|  | Over $1,000K | 224 | 31.2% |
| Overall |  | 719 | 100.0% |
| Excluded |  | 0 |  |
| Total |  | 719 |  |

## Ratio Statistics for CURRLND / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|
| $50K to $100K | 1.493 | 1.004 | .194 | 32.5% |
| $100K to $150K | 1.007 | 1.002 | .076 | 11.9% |
| $150K to $200K | .998 | .997 | .140 | 23.4% |
| $200K to $300K | 1.006 | 1.002 | .159 | 23.0% |
| $300K to $500K | .984 | .998 | .160 | 21.8% |
| $500K to $750K | .965 | 1.002 | .124 | 16.6% |
| $750K to $1,000K | .946 | 1.000 | .135 | 18.1% |
| Over $1,000K | .904 | 1.052 | .181 | 24.7% |
| Overall | .952 | 1.089 | .154 | 21.2% |

**Subclass**

## Case Processing Summary

| | | Count | Percent |
|---|---|---|---|
| ABSTRLND | 100 | 74 | 10.3% |
| | 101 | 21 | 2.9% |
| | 200 | 33 | 4.6% |
| | 300 | 6 | 0.8% |
| | 510 | 2 | 0.3% |
| | 520 | 4 | 0.6% |
| | 530 | 1 | 0.1% |
| | 540 | 1 | 0.1% |
| | 1112 | 459 | 63.8% |
| | 1115 | 4 | 0.6% |
| | 1125 | 24 | 3.3% |
| | 2112 | 11 | 1.5% |
| | 2115 | 2 | 0.3% |
| | 2120 | 23 | 3.2% |
| | 2125 | 2 | 0.3% |
| | 2130 | 35 | 4.9% |
| | 2135 | 13 | 1.8% |
| | 3115 | 4 | 0.6% |
| Overall | | 719 | 100.0% |
| Excluded | | 0 | |
| Total | | 719 | |

## Ratio Statistics for CURRLND / TASP

| Group | Median | Price Related Differential | Coefficient of Dispersion | Coefficient of Variation Median Centered |
|---|---|---|---|---|
| 100 | .930 | 1.070 | .155 | 22.1% |
| 101 | .875 | 1.032 | .143 | 19.5% |
| 200 | .947 | 1.115 | .152 | 21.5% |
| 300 | .906 | .950 | .215 | 28.2% |
| 510 | 1.158 | 1.055 | .111 | 15.8% |
| 520 | 1.038 | 1.127 | .123 | 17.6% |
| 530 | 1.036 | 1.000 | .000 | . |
| 540 | .959 | 1.000 | .000 | . |
| 1112 | .962 | 1.035 | .140 | 19.3% |
| 1115 | .795 | .956 | .083 | 13.0% |

| | | | |
|---|---|---|---|
| 1125 | .925 | 1.235 | .230 | 31.2% |
| 2112 | .905 | 1.081 | .194 | 28.9% |
| 2115 | 1.067 | .998 | .030 | 4.2% |
| 2120 | .958 | 1.071 | .215 | 28.8% |
| 2125 | .891 | 1.012 | .049 | 6.9% |
| 2130 | .908 | 1.081 | .185 | 25.4% |
| 2135 | 1.003 | .853 | .226 | 31.8% |
| 3115 | .863 | .980 | .095 | 13.1% |
| Overall | .952 | 1.089 | .154 | 21.2% |