2023
LARIMER COUNTY PROPERTY ASSESSMENT STUDY

EastWest ECONOMETRICS

September 15, 2023

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

RE: Final Report for the 2023 Colorado Property Assessment Study

Dear Ms. Castle:

East West Econometrics - Audit Division is pleased to submit the Final Reports for the 2023 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 locally assessed 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

TABLE OF CONTENTS

INTRODUCTION

Colorado

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.

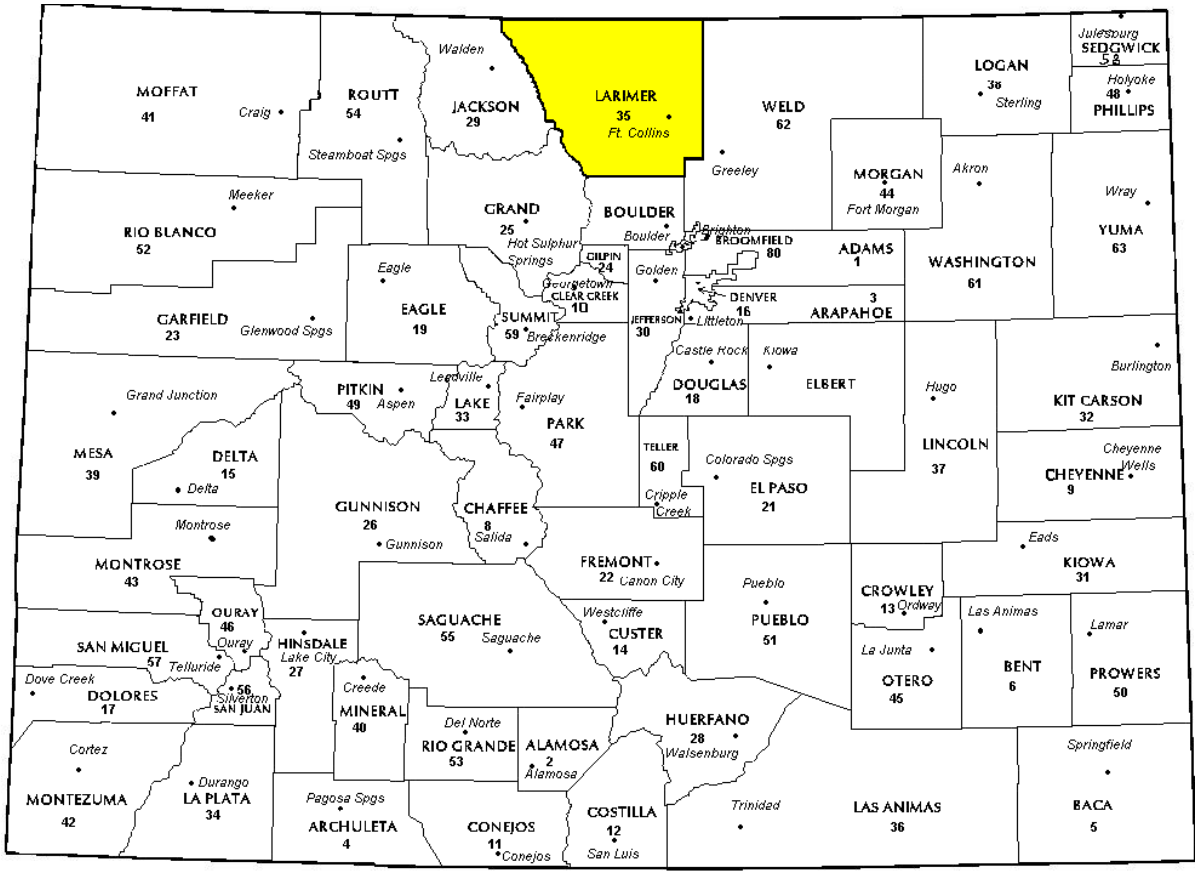
Statistical analysis is performed on vacant land, residential properties, commercial industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax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

East West Econometrics Audit has completed the Property Assessment Study for 2023 and is pleased to report its findings for Larimer County in the following report.

Regional / Historical Sketch of Larimer County

Regional Information

Larimer 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

Larimer County has approximately 2,596 square miles and an estimated population of approximately 356,899 people with 115.4 people per square mile, according to the U.S. Census Bureau's 2020 estimated census data. This represents a 19.1 percent change from April 1, 2010 to July 1, 2019.

Larimer County was created in 1861 as one of the seventeen original counties in the Colorado Territory; however, its western boundary was disputed. Controversy existed as to whether Larimer County ended at the Medicine Bow Range or at the Continental Divide thirty miles further west. An 1886 Colorado Supreme Court decision set the boundary at the Continental Divide, although the land between the Medicine Bow Range and the divide was made part of Jackson County in 1909.

Unlike that of much of Colorado, which was founded on the mining of gold and silver, the settlement of Larimer County was based almost entirely on agriculture, an industry that few thought possible in the region during the initial days of the Colorado Gold Rush. The mining boom almost entirely passed the county by. It would take the introduction of irrigation to the region in the 1860s to bring the first widespread settlement to the area.

In 1862, the United States Army established an outpost near Laporte that was designated as Camp Collins. A devastating flood in June 1864 wiped out the outpost, forcing the Army to seek a better location. At the urging of Joseph Mason, who had settled along the Poudre in 1860, the Army relocated its post downstream adjacent to Mason's land along the Overland stage route. The site of the new post became the nucleus of the town of Fort Collins, incorporated in 1873 after the withdrawal of the Army. By that time, Mason and others had convinced the legislature of the Colorado Territorial Legislature to designate the new town as the county seat. In 1870, the legislature designated Fort Collins as the location of the state agricultural college (later Colorado State University).

Cities and towns located in Larimer County, Colorado include Berthoud, Estes Park, Fort Collins, Loveland, Timnath, Wellington, Windsor, Bellvue, Buckeye, Campion, Cherokee Park, Drake, Glendevey, Glen Haven, LaPorte, Livermore, Kinikinik, Manhattan, Masonville, Pinewood Springs, Pingree Park, Poudre Park, Feather Lakes, Rustic, Teds Place, Virginia Dale and Waverly. *(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, 2021 through June 30th, 2022. 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
Residential Condominium	Between .95-1.05	Less than 15.99
Residential	Between .95-1.05	Less than 15.99
Vacant Land	Between .95-1.05	Less than 20.99

The results for Larimer County are:

Larimer County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	377	0.979	1.028	10	Compliant
Residential	17,420	0.986	1.015	7.2	Compliant
Vacant Land	609	0.992	1.065	14	Compliant

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

Recommendations

None

TIME TRENDING VERIFICATION

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 Larimer County has complied with the statutory requirements to analyze the effects of time on value in their county. Larimer 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

Larimer 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
Residential	Compliant
Vacant Land	Compliant

Conclusions

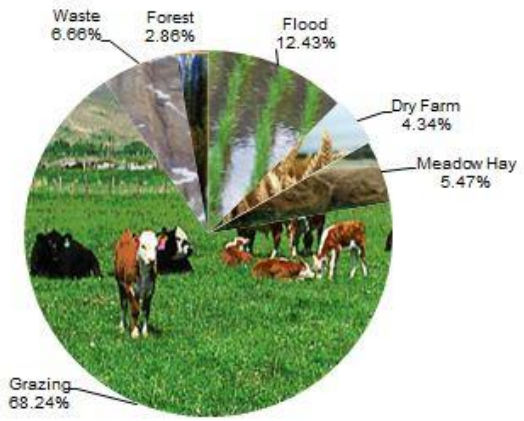
After applying the above described methodologies, it is concluded that Larimer County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

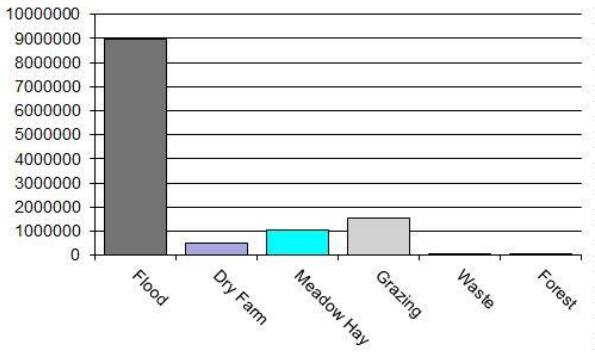
None

AGRICULTURAL LAND STUDY

Acres By Subclass



Value By Subclass



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:

Larimer County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4117	Flood	47,531	188.47	8,957,989	8,941,758	1.00
4127	Dry Farm	16,579	28.88	478,817	479,256	1.00
4137	Meadow Hay	20,927	49.20	1,029,566	1,029,566	1.00
4147	Grazing	260,914	5.88	1,533,893	1,533,893	1.00
4177	Forest	10,941	6.69	73,226	73,319	1.00
4167	Waste	25,449	2.19	55,686	55,686	1.00
Total/Avg		**382,340**	**31.72**	**12,129,179**	**12,113,478**	**1.00**

Recommendations

None

Agricultural Outbuildings

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

Larimer County has substantially 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

Larimer 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
- In-Person Interviews with Owners/Tenants
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Larimer 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.:

- Property Record Card Analysis
- Questionnaires
- Field Inspections
- Phone Interviews
- In-Person Interviews with Owners/Tenants
- Personal Knowledge of Occupants at Assessment Date
- Aerial Photography/Pictometry

Larimer County has substantially 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 2023 for Larimer County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically EWE selected 433 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.
>
> When less than 50 percent of sales are qualified in any of the three property classes (residential, commercial, and vacant land), the contractor analyzed the reasons for disqualifying sales in any subclass that constitutes at least 20 percent of the class, either by number of properties or by value, from the prior year. 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.

If 50 percent or more of the sales are qualified, the contractor has reviewed a statistically significant sample of unqualified sales, excluding sales that were disqualified for obvious reasons.

The following subclasses were analyzed for Larimer County:

0100 Residential Lots

Conclusions

Larimer 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

None

Economic Area Review and Evaluation

Methodology

Larimer County has submitted a written narrative describing the economic areas that make up the county's market areas. Larimer 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 Larimer 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

Earth and Stone Products

Methodology

Under the guidelines of the Assessor's Reference Library (ARL), Volume 3, Natural Resource Valuation Procedures, the income approach was applied to determine value for production of earth and stone products. The number of tons was multiplied by an economic royalty rate determined by the Division of Property Taxation to determine income. The income was multiplied by a recommended Hoskold factor to determine the actual value. The Hoskold factor is determined by the life of the reserves or the lease. Value is based on two variables: life and tonnage. The operator determines these since there is no other means to obtain production data through any state or private agency.

Conclusions

The County has applied the correct formulas and state guidelines to earth and stone production.

Recommendations

None

Producing Oil and Gas

Methodology

Assessors Reference Library (ARL) Volume 3, Chapter 6: Valuation of Natural Resources

STATUTORY REFERENCES

Section § 39-1-103, C.R.S., specifies that producing oil or gas leaseholds and lands are valued according to article 7 of title 39, C.R.S.

Actual value determined - when.

(2) The valuation for assessment of leaseholds and lands producing oil or gas shall be determined as provided in article 7 of this title.

§ 39-1-103, C.R.S.

Article 7 covers the listing, valuation, and assessment of producing oil and gas leaseholds and lands.

Valuation:

Valuation for assessment.

(1) Except as provided in subsection (2) of this section, on the basis of the information contained in such statement, the assessor shall value such oil and gas leaseholds and lands for assessment, as real property, at an amount equal to eighty-seven and one-half percent of:

(a) The selling price of the oil or gas sold there from during the preceding calendar year, after excluding the selling price of all oil or gas delivered to the United States government or any agency thereof, the state of Colorado or any agency thereof, or any political subdivision of the state as royalty during the preceding calendar year;

(b) The selling price of oil or gas sold in the same field area for oil or gas transported from the premises which is not sold during the preceding calendar year, after excluding the selling price of all oil or gas delivered to the United States government or any agency thereof, the state of Colorado or any agency thereof, or any political subdivision of the state as royalty during the preceding calendar year.

§ 39-7-102, C.R.S.

Conclusions

The county applied approved appraisal procedures in the valuation of oil and gas.

Recommendations

None

VACANT LAND

Subdivision Discounting

Subdivisions were reviewed in 2023 in Larimer County. The review showed that subdivisions were discounted pursuant to 39-1-103 (14) C.R.S. Discounting procedures were applied to all subdivisions where less than 80 percent of vacant land parcels were sold. An absorption rate was estimated for each discounted subdivision. An appropriate discount rate was developed using the Summation Method, following Division of Property Taxation guidelines.

Conclusions

Larimer 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.

Larimer 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

Larimer 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

Larimer 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.

Larimer 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

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.

Larimer County submitted their personal property written audit plan and was current for the 2023 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
- 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
- Accounts close to the $52,000 actual value exemption status
- Accounts protested with substantial disagreement

Larimer 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

Larimer 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*

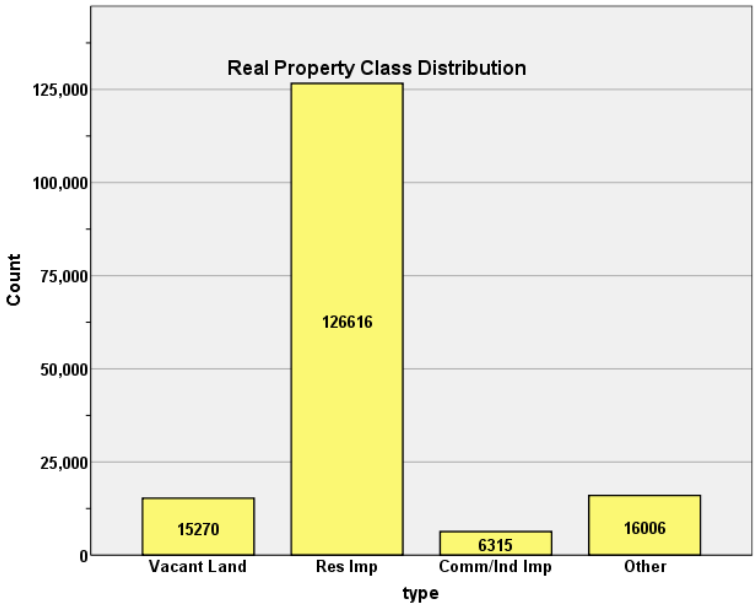
J. Andrew Rodriguez, *Field Analyst*

STATISTICAL APPENDIX

STATISTICAL COMPLIANCE REPORT
FOR LARIMER COUNTY
2023

I. OVERVIEW

Larimer County is a northern county located along Colorado's Front Range urban corridor. The county has a total of 164,207 real property parcels, according to data submitted by the county assessor's office in 2023. 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 100) accounted for 74.2% of all vacant land parcels.

For residential improved properties, single family properties accounted for 88.0% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 3.8% of all such properties in this county.

II. DATA FILES

The following sales analyses were based on the requirements of the 2023 Colorado Property Assessment Study. Information was provided by the Larimer Assessor's Office in April 2023. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 17,420 qualified residential sales for the 24-month period ending June 30, 2022. The sales ratio analysis results were as follows:

Median	**0.986**
Price Related Differential	**1.015**
Coefficient of Dispersion	**7.2**

We next stratified the sale ratio analysis by economic area and neighborhood. The minimum count for the neighborhood stratification is 35 sales. The following are the results of this stratification analysis:

Economic Area

Case Processing Summary

		Count	Percent
ECONAREA	1.00	9084	52.2%
	2.00	6994	40.2%
	3.00	747	4.3%
	4.00	583	3.3%
Overall		17408	100.0%
Excluded		12	
Total		17420	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	.988	1.018	.071
2.00	.982	1.010	.066
3.00	.991	1.027	.099
4.00	.997	1.015	.109
Overall	.986	1.015	.072

B. Neighborhoods with 35 or more sales

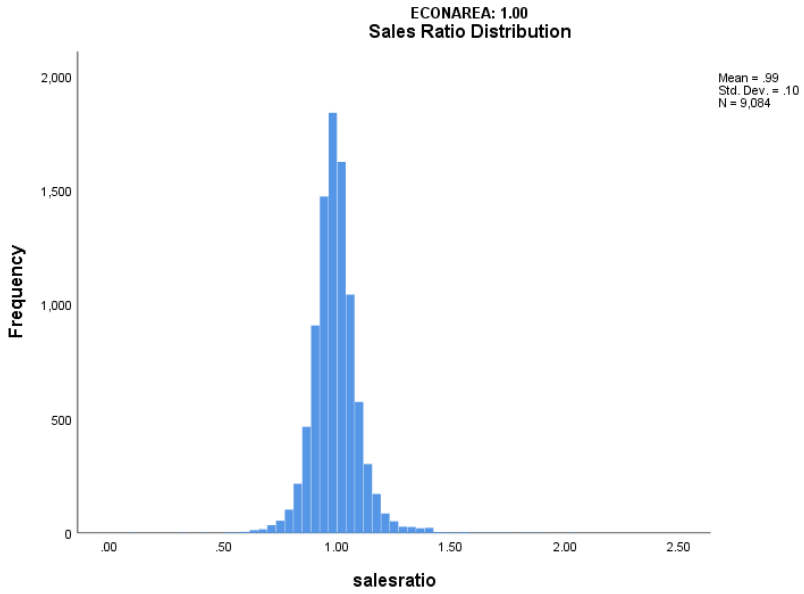
Ratio Statistics for CURRTOT / TASP

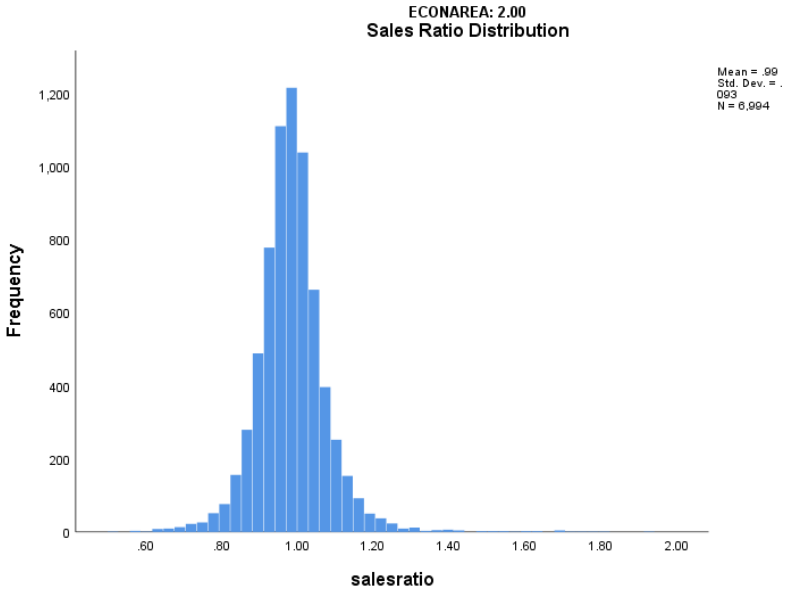
Group	Median	Price Related Differential	Coefficient of Dispersion
18729 0679	.983	1.017	.060
18729 0898	1.007	1.014	.091
18729 1733	1.022	1.004	.052
18729 1997	.986	1.003	.054
18729 8014	.996	1.003	.044
18729 8040	.974	1.004	.055
18933 1942	.994	1.002	.035
18933 1971	.988	1.001	.046
18933 5006	.970	1.023	.096
18933 5007	.982	1.004	.047
18933 5008	.994	1.008	.066
18933 5010	.975	1.042	.069
18933 5013	1.030	1.020	.071
18933 5017	.992	1.002	.075
18933 5022	.994	1.006	.064

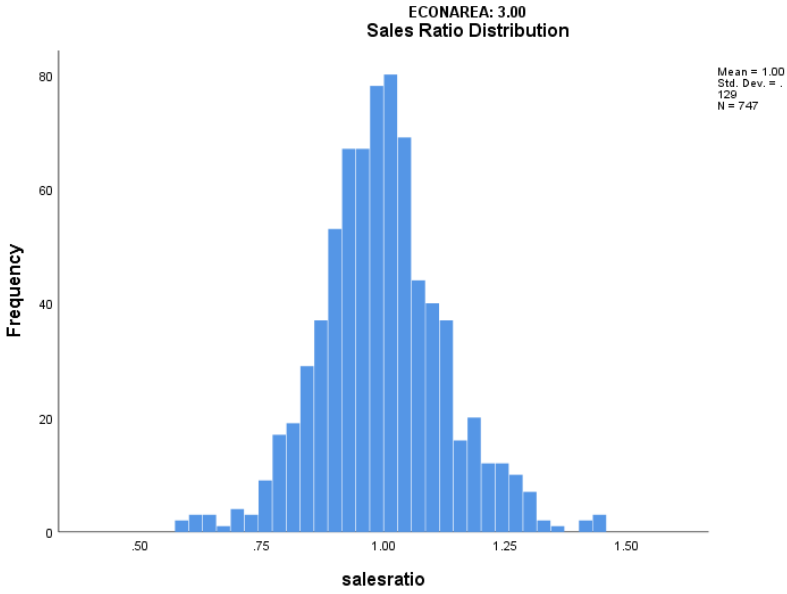
18933 5024	.981	1.009	.094
18933 8094	.988	1.003	.058
18933 8098	.973	1.002	.049
18933 8132	.984	1.001	.045
18933 8255	.989	1.002	.050
18933 8330	.969	1.001	.032
18933 8383	1.012	1.005	.050
18934 6035	.977	1.001	.038
18934 6043	.985	1.002	.049
18934 6045	.993	1.001	.050
18934 6046	.982	1.003	.041
18934 6048	.973	1.002	.044
18934 6051	.962	1.002	.029
18934 6053	.974	1.002	.051
18934 6055	.987	1.001	.044
18934 6067	.983	1.005	.058
19601 1344	.975	1.006	.059
19613 18383	.982	1.003	.053
19613 1956	1.001	1.000	.053
19613 8045	1.003	1.001	.049
19614 18513	1.000	1.004	.053
19614 8000	1.006	1.004	.062
19722 1887	.994	1.004	.077
19722 8409	.981	1.001	.040
19724 1176	.991	1.012	.059
19836 8116	1.000	1.009	.104
28506 230568	.975	1.007	.061
28506 2436	.967	1.013	.069
28506 2694	.982	1.005	.048
28506 2723	1.009	.996	.042
28506 2725	1.000	1.005	.064
28506 2736	.987	1.004	.053
28506 2753	.987	1.004	.047
28506 5802	.978	1.000	.045
28506 5802001001	.979	1.004	.052
28506 5813	.983	1.010	.057
28506 8528	1.009	1.003	.046
28623 0455	.992	1.022	.089
28623 5504	.952	1.007	.077
28623 5510	.971	1.018	.086
28623 5513	.981	1.011	.071
28623 5514	.954	1.020	.087
28623 5522	.982	1.005	.047
28623 5523	1.003	1.004	.041
29414 4093	.990	1.004	.057
29414 4104	.908	1.053	.114
29414 4114	.993	1.001	.063
29414 4118	.984	1.008	.058
29414 4119	.988	1.007	.059
29414 4120	.983	1.001	.034
29414 4125	.979	1.001	.047
29414 4128	.991	.999	.029
29414 4133	.998	1.008	.055
29502 2223	.971	1.004	.055
29502 2407	.988	1.003	.054
29502 2558	.979	.998	.048
29502 2624	.996	1.006	.051

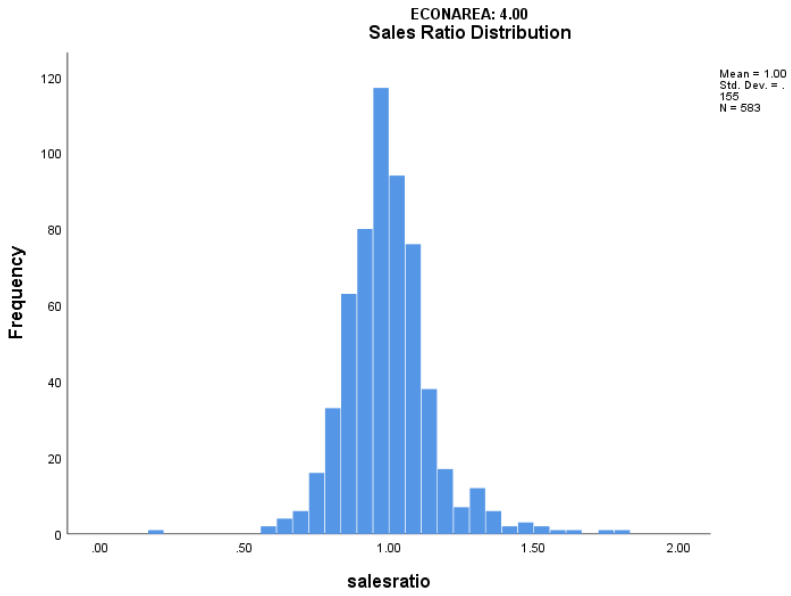
29517 2631	.989	1.000	.051
29517 2847	1.007	1.006	.052
29517 2853	.980	1.001	.032
29522 2744	.984	1.000	.028
29522 8520	.996	1.002	.042
29635 2733	1.006	1.008	.073
29635 27331	.989	1.003	.053
29635 2748	.987	1.004	.052
29635 8510	.974	1.002	.042
29635 8525	.980	1.007	.071
33525 0223	1.024	1.011	.090
41428 0151	.972	1.006	.100
42915 0327	.995	1.010	.088
43028 0272	1.000	1.005	.087
Overall	.986	1.011	.061

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. None of the neighborhoods with at least 35 sales were outside of the standards for either the median sales ratio or the COD after rounding to two places. The following graphs describe further the sales ratio distribution for these properties:




ECONAREA: 2.00
Sales Ratio Distribution
Mean = .99
Std. Dev. = .093
N = 6,994
Frequency
1,200
1,000
800
600
400
200
0
.60
.80
1.00
1.20
1.40
1.60
1.80
2.00
salesratio


ECONAREA: 3.00
Sales Ratio Distribution
Mean = 1.00
Std. Dev. = .129
N = 747
Frequency
80
60
40
20
0
.50
.75
1.00
1.25
1.50
salesratio

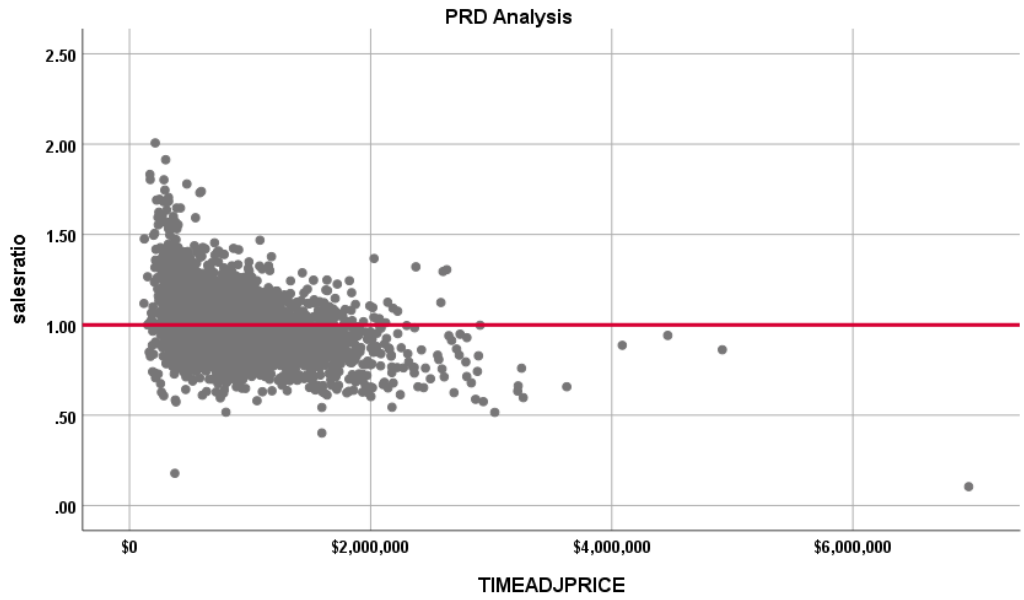


The above graphs indicate that the distribution of the sale ratios was within state mandated limits.

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 1.013, 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:

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.991	.002		448.130	.000
	CURRTOT	-.00000000314	.000	-.008	-.963	.335

a. Dependent Variable: salesratio

The slope of the line at 0.00000000314 indicates that there is virtually no slope in the regression line, which indicates 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	114	0.7%
	$300K to $400K	835	5.5%
	$400K to $500K	3471	22.7%
	$500K to $600K	4162	27.2%
	$600K to $750K	3520	23.0%
	$750K to $1000K	2030	13.3%
	$1000K to $2000K	1055	6.9%
	Over $2000K	88	0.6%
Overall		15275	100.0%
Excluded		0	
Total		15275	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $300K	1.114	.998	.197	26.2%
$300K to $400K	1.008	1.001	.093	14.2%
$400K to $500K	.997	1.000	.063	8.8%
$500K to $600K	.988	1.000	.057	7.8%
$600K to $750K	.979	1.000	.064	8.5%
$750K to $1000K	.968	1.000	.080	10.6%
$1000K to $2000K	.932	1.006	.106	13.6%
Over $2000K	.832	1.025	.170	23.1%
Overall	.985	1.013	.072	10.3%

The above tables indicate no regressivity in the sales ratios across sale price categories.

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 economic area, as follows:

Coefficients[a]

ECONAREA	Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
.	1	(Constant)	.830	.112		7.397	.000
		SalePeriod	-.006	.009	-.214	-.692	.505
1.00	1	(Constant)	.999	.002		443.930	.000
		SalePeriod	-.001	.000	-.048	-4.181	.000
2.00	1	(Constant)	.994	.002		449.041	.000
		SalePeriod	-.001	.000	-.057	-4.649	.000
3.00	1	(Constant)	.992	.013		74.135	.000
		SalePeriod	.000	.001	.016	.334	.738
4.00	1	(Constant)	1.035	.013		78.850	.000
		SalePeriod	-.003	.001	-.131	-3.170	.002

a. Dependent Variable: salesratio

There was no residual market trending present in the sale ratio data for any of the economic areas; in Economic Areas 1, 2 and 4, where the marginally statistical trend was present, the magnitude of that trend at less than 0.01% per month was not significant. We therefore concluded that the assessor has adequately addressed market trending in the valuation of residential properties.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median actual value per square foot for 2023 between each group. The data was analyzed for the entire class and stratified by economic area, as follows:

Report

VALSF

sold	N	Median	Mean
UNSOLD	108255	$340	$359
SOLD	17416	$334	$355

Report

VALSF

ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	9474	$313	$325
	SOLD	3266	$310	$323
2.00	UNSOLD	8236	$326	$332
	SOLD	3508	$311	$320
3.00	UNSOLD	478	$468	$473
	SOLD	60	$434	$468
4.00	UNSOLD	1519	$403	$416
	SOLD	241	$400	$421

We next stratified the comparison by neighborhoods with at least 35 sales. All neighborhoods valued residential sold and unsold properties consistently using the value per square foot method.

Report

VALSF

NBHD	sold	N	Median	Mean
18729 0679	UNSOLD	344	$302	$316
	SOLD	63	$310	$323
18729 0898	UNSOLD	274	$322	$321
	SOLD	137	$331	$332
18729 1733	UNSOLD	299	$316	$330
	SOLD	38	$331	$345
18729 1997	UNSOLD	311	$313	$331
	SOLD	54	$313	$332
18729 8014	UNSOLD	428	$324	$322
	SOLD	84	$326	$322
18729 8040	UNSOLD	328	$320	$328
	SOLD	42	$342	$339
18933 1942	UNSOLD	183	$308	$309
	SOLD	44	$308	$310
18933 1971	UNSOLD	397	$320	$319
	SOLD	80	$322	$316
18933 5006	UNSOLD	270	$579	$576
	SOLD	110	$575	$564
18933 5007	UNSOLD	410	$264	$268
	SOLD	62	$268	$271
18933 5008	UNSOLD	217	$297	$307
	SOLD	185	$318	$326
18933 5010	UNSOLD	169	$394	$391
	SOLD	174	$360	$361
18933 5013	UNSOLD	230	$434	$453
	SOLD	107	$443	$422
18933 5017	UNSOLD	134	$255	$290
	SOLD	59	$306	$311
18933 5022	UNSOLD	112	$303	$307
	SOLD	238	$304	$314
18933 5024	UNSOLD	37	$186	$209
	SOLD	59	$214	$215
18933 8094	UNSOLD	155	$325	$324
	SOLD	36	$338	$340
18933 8098	UNSOLD	434	$310	$318
	SOLD	73	$311	$323
18933 8132	UNSOLD	239	$314	$320
	SOLD	66	$326	$330
18933 8255	UNSOLD	322	$285	$291
	SOLD	339	$284	$293
18933 8330	UNSOLD	136	$284	$294
	SOLD	36	$283	$291
18933 8383	UNSOLD	34	$280	$297
	SOLD	79	$267	$281
18934 6035	UNSOLD	226	$336	$331
	SOLD	40	$331	$329
18934 6043	UNSOLD	282	$349	$340
	SOLD	40	$353	$349
18934 6045	UNSOLD	196	$259	$268
	SOLD	39	$261	$274
18934 6046	UNSOLD	178	$290	$297
	SOLD	48	$296	$302
18934 6048	UNSOLD	349	$331	$323

	SOLD	57	$329	$321
18934 6051	UNSOLD	88	$207	$211
	SOLD	44	$206	$207
18934 6053	UNSOLD	103	$251	$222
	SOLD	39	$265	$264
18934 6055	UNSOLD	177	$300	$303
	SOLD	106	$307	$301
18934 6067	UNSOLD	118	$318	$301
	SOLD	219	$273	$283
19601 1344	UNSOLD	402	$304	$313
	SOLD	39	$325	$323
19613 18383	UNSOLD	220	$350	$349
	SOLD	36	$347	$340
19613 1956	UNSOLD	311	$311	$306
	SOLD	47	$312	$313
19613 8045	UNSOLD	207	$334	$308
	SOLD	40	$332	$334
19614 18513	UNSOLD	369	$292	$295
	SOLD	45	$288	$296
19614 8000	UNSOLD	15	$272	$259
	SOLD	44	$272	$269
19722 1887	UNSOLD	253	$347	$352
	SOLD	40	$316	$331
19722 8409	UNSOLD	4	$343	$336
	SOLD	101	$308	$316
19724 1176	UNSOLD	276	$324	$334
	SOLD	40	$331	$346
19836 8116	UNSOLD	237	$363	$341
	SOLD	37	$429	$431
28506 230568	UNSOLD	58	$283	$286
	SOLD	70	$283	$281
28506 2436	UNSOLD	313	$308	$329
	SOLD	55	$316	$330
28506 2694	UNSOLD	262	$296	$304
	SOLD	48	$297	$302
28506 2723	UNSOLD	257	$364	$364
	SOLD	51	$316	$344
28506 2725	UNSOLD	485	$291	$308
	SOLD	311	$296	$302
28506 2736	UNSOLD	179	$333	$335
	SOLD	47	$334	$332
28506 2753	UNSOLD	257	$342	$340
	SOLD	85	$343	$346
28506 5802	UNSOLD	366	$270	$271
	SOLD	106	$269	$271
28506 5802001001	UNSOLD	262	$239	$238
	SOLD	156	$249	$257
28506 5813	UNSOLD	126	$356	$352
	SOLD	39	$360	$354
28506 8528	UNSOLD	37	$255	$254
	SOLD	39	$255	$253
28623 0455	UNSOLD	256	$339	$347
	SOLD	35	$345	$338
28623 5504	UNSOLD	120	$303	$314
	SOLD	63	$284	$307
28623 5510	UNSOLD	615	$400	$397
	SOLD	135	$386	$389

28623 5513	UNSOLD	244	$360	$353
	SOLD	51	$334	$337
28623 5514	UNSOLD	330	$366	$365
	SOLD	41	$363	$368
28623 5522	UNSOLD	55	$373	$367
	SOLD	41	$380	$374
28623 5523	UNSOLD	79	$266	$275
	SOLD	35	$254	$265
29414 4093	UNSOLD	50	$310	$310
	SOLD	52	$266	$281
29414 4104	UNSOLD	105	$408	$408
	SOLD	139	$387	$391
29414 4114	UNSOLD	380	$292	$296
	SOLD	240	$280	$295
29414 4118	UNSOLD	253	$325	$332
	SOLD	163	$312	$322
29414 4119	UNSOLD	30	$315	$315
	SOLD	92	$291	$305
29414 4120	UNSOLD	51	$269	$275
	SOLD	70	$247	$275
29414 4125	UNSOLD	198	$326	$326
	SOLD	109	$331	$330
29414 4128	UNSOLD	39	$247	$267
	SOLD	40	$248	$272
29414 4133	UNSOLD	21	$354	$330
	SOLD	204	$323	$323
29502 2223	UNSOLD	415	$297	$322
	SOLD	50	$311	$330
29502 2407	UNSOLD	269	$371	$368
	SOLD	40	$335	$352
29502 2558	UNSOLD	309	$293	$291
	SOLD	64	$297	$293
29502 2624	UNSOLD	258	$313	$314
	SOLD	47	$306	$311
29517 2631	UNSOLD	223	$387	$390
	SOLD	79	$351	$374
29517 2847	UNSOLD	25	$462	$434
	SOLD	49	$369	$384
29517 2853	UNSOLD	91	$303	$312
	SOLD	61	$298	$303
29522 2744	UNSOLD	103	$289	$298
	SOLD	173	$283	$290
29522 8520	UNSOLD	136	$298	$313
	SOLD	35	$292	$300
29635 2733	UNSOLD	47	$283	$310
	SOLD	54	$300	$308
29635 27331	UNSOLD	266	$397	$379
	SOLD	36	$405	$388
29635 2748	UNSOLD	289	$375	$369
	SOLD	46	$382	$375
29635 8510	UNSOLD	294	$327	$336
	SOLD	43	$314	$320
29635 8525	UNSOLD	83	$361	$342
	SOLD	214	$361	$348
33525 0223	UNSOLD	478	$468	$473
	SOLD	60	$434	$468
41428 0151	UNSOLD	288	$503	$506

	SOLD	44	$532	$536
42915 0327	UNSOLD	473	$352	$361
	SOLD	100	$369	$382
43028 0272	UNSOLD	758	$404	$417
	SOLD	97	$406	$408

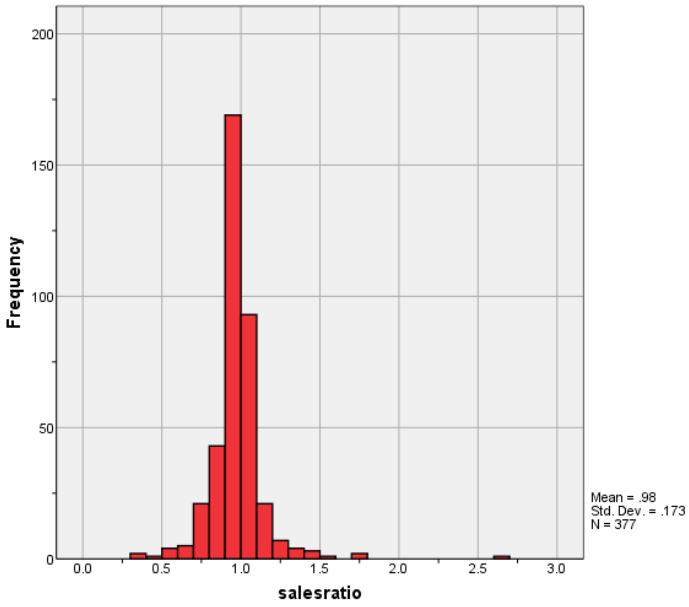
Only two neighborhoods reported a value per square foot significantly higher for sold properties as compared to unsold properties. Most neighborhoods had the opposite scenario where the unsold value per square foot was greater than the sold value per square foot. We concluded that there was no evidence of valuing sold properties on average at a greater rate than unsold properties.

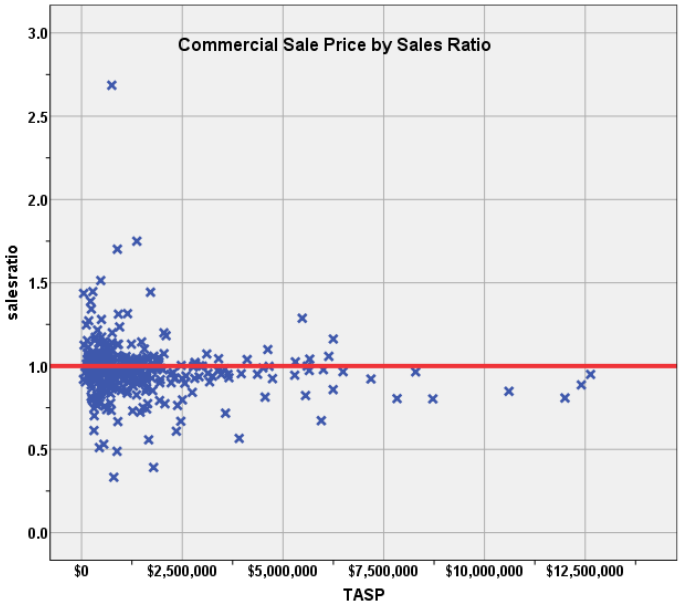
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 377 qualified commercial and industrial sales for the 24 month period ending June 30, 2022. The sales ratio analysis results were as follows:

Median	**0.979**
Price Related Differential	**1.028**
Coefficient of Dispersion	**10.0**

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





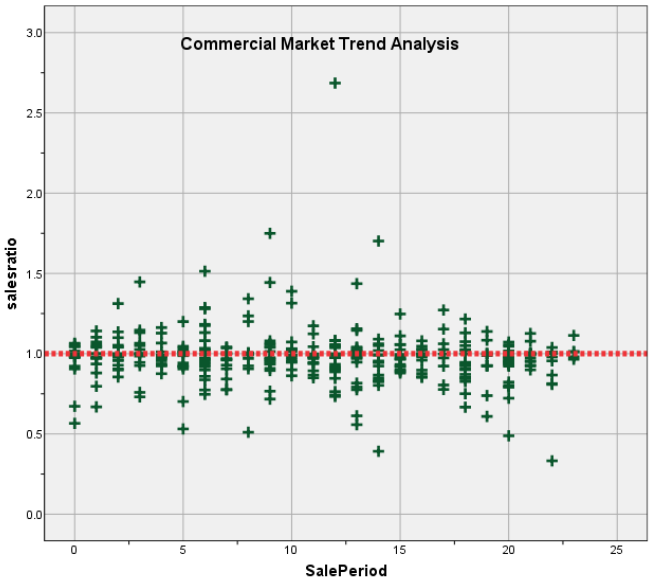
Commercial/Industrial Market Trend Analysis

The assessor did apply market trend adjustments to the commercial/industrial dataset. 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 B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.003	.017		58.181	.000
	SalePeriod	-.002	.001	-.089	-1.734	.084

a. Dependent Variable: salesratio



There was no statistically significant residual market trending present in the commercial sale ratios; therefore, we concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

Sold/Unsold Analysis

We compared the median change in actual value for valuation year 2020 and valuation year 2022 between sold and unsold commercial properties, both overall and stratified by subclass, to determine if both groups were valued consistently, as follows:

Report
DIFF

sold	N	Median	Mean
UNSOLD	5732	1.29	1.37
SOLD	368	1.38	1.47

Report
DIFF

ABSTRIMP	sold	N	Median	Mean
2215.00	UNSOLD	130	1.44	1.55
	SOLD	6	1.69	1.70
2220.00	UNSOLD	493	1.22	1.29
	SOLD	37	1.36	1.40
2230.00	UNSOLD	1126	1.30	1.41
	SOLD	55	1.53	1.65
2235.00	UNSOLD	651	1.34	1.41
	SOLD	53	1.50	1.56
2245.00	UNSOLD	2010	1.26	1.32
	SOLD	142	1.25	1.32
3215.00	UNSOLD	145	1.35	1.41
	SOLD	4	1.57	1.60
3230.00	UNSOLD	42	1.66	1.46
	SOLD	4	1.43	1.43

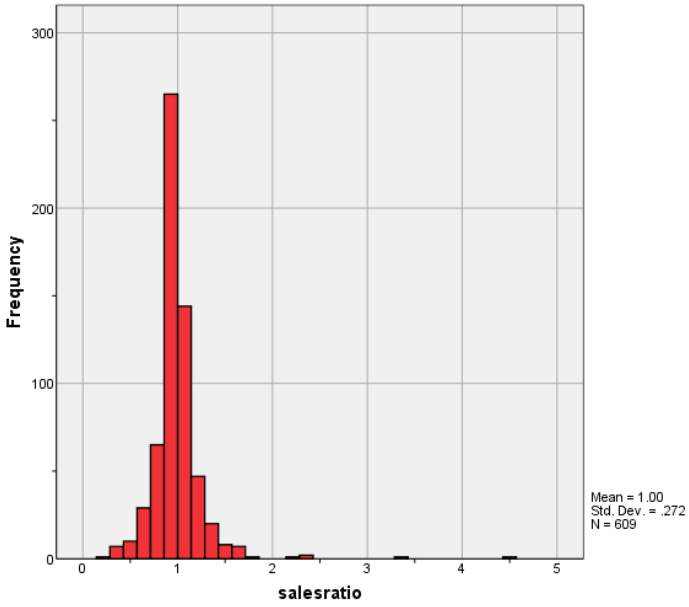
Although the magnitude overall was not significant, sold properties tended to be smaller, newer, higher quality and/or superior condition. This likely explains some of the differences between sold and unsold changes in value for certain subclasses. We therefore concluded that the assessor overall valued sold and unsold commercial properties consistently.

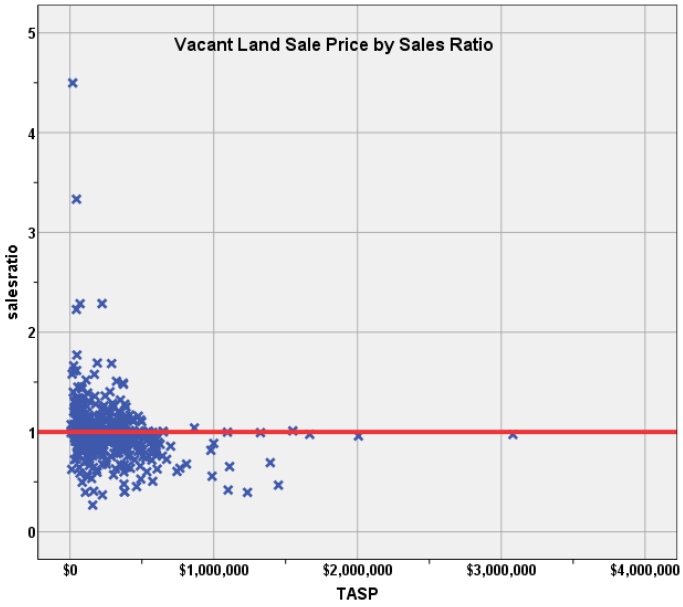
V. VACANT LAND SALE RESULTS

There were 609 qualified vacant land sales for the 24 month period ending June 30, 2022. The sales ratio analysis results were as follows:

Median	**0.992**
Price Related Differential	**1.065**
Coefficient of Dispersion	**14.0**

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 these properties:





The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits, while the above scatter plot indicated that there was no price related differential issues. No sales were trimmed.

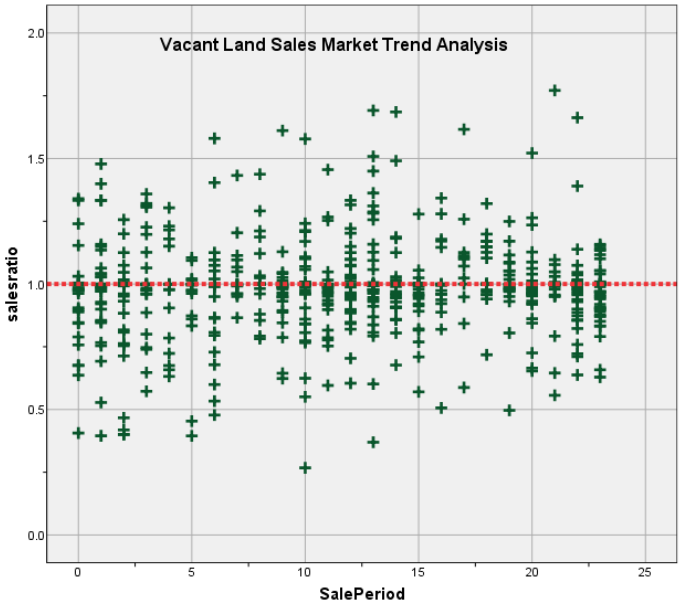
Vacant Land Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.960	.015		63.666	.000
	SalePeriod	.002	.001	.063	1.552	.121

a. Dependent Variable: salesratio



The above analysis indicated that no significant market trending was present in the vacant land sale data. We concluded that the assessor has adequately dealt with market trending for vacant land properties.

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 valuation year 2020 and valuation year 2022 between each group, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	8815	1.15	1.30
SOLD	522	1.58	1.63

We next examined sold and unsold properties with at least 5 sales to determine if sold and unsold properties were valued differently, as follows:

Report
DIFF

SUBDIVNO	sold	N	Median	Mean
/340870	UNSOLD	9	1.46	1.50
	SOLD	5	1.05	1.27
02293	UNSOLD	18	1.85	1.85
	SOLD	6	1.85	1.83
0327120	UNSOLD	111	2.00	2.11
	SOLD	17	2.00	2.05
03272	UNSOLD	18	2.00	2.00
	SOLD	6	2.00	2.08
03274	UNSOLD	5	2.04	2.03
	SOLD	5	2.01	2.02
04352	UNSOLD	24	2.01	2.01
	SOLD	18	2.01	2.01
0707	UNSOLD	9	1.35	1.31
	SOLD	5	1.35	1.36
0920001001	UNSOLD	1	1.37	1.37
	SOLD	7	1.37	1.37
4104003000	UNSOLD	72	1.10	1.29
	SOLD	32	2.01	1.82
4104011000	UNSOLD	5	1.00	1.12
	SOLD	9	1.58	1.58
4136001000	UNSOLD	19	1.35	1.35
	SOLD	7	1.35	1.35
5006003001	UNSOLD	6	1.07	1.08
	SOLD	13	1.26	1.26
5006006000	UNSOLD	8	1.00	1.05
	SOLD	10	1.14	1.14
5013004000	UNSOLD	5	1.00	1.00
	SOLD	16	1.33	1.54
8312001000	UNSOLD	7	1.52	1.52
	SOLD	8	1.52	1.52
8462001000	UNSOLD	5	1.19	1.12
	SOLD	5	1.19	1.19

There was no consistent pattern of sold properties being adjusted in value at a rate greater than unsold properties between the two taxable years. Overall, we concluded that the county assessor valued sold and unsold vacant properties consistently.

V. CONCLUSIONS

Based on this 2023 audit statistical analysis for Larimer County, residential, commercial industrial and vacant land and properties were found to be in compliance with state guidelines.

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / TASP

ECONAREA	Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			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	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
.	.755	.696	.813	.737	.675	.841	96.1%	.741	.679	.802	1.019	.102	12.2%
1.00	.991	.989	.993	.987	.985	.989	95.1%	.979	.975	.982	1.013	.072	10.1%
2.00	.985	.983	.987	.982	.980	.984	95.2%	.974	.971	.976	1.012	.066	9.5%
3.00	.996	.983	1.008	.989	.977	1.004	95.3%	.970	.954	.987	1.026	.104	13.3%
4.00	.999	.986	1.012	.998	.984	1.000	95.9%	.984	.971	.997	1.015	.109	15.5%

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 Land

Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			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	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
.977	.960	.995	.979	.971	.989	96.1%	.951	.930	.971	1.028	.100	17.7%

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			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	Actual Coverage		Lower Bound	Upper Bound			Mean Centered
.996	.975	1.018	.992	.983	.997	95.7%	.935	.913	.958	1.065	.140	27.3%

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

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	.00	1	0.0%
	700.00	1	0.0%
	1212.00	15261	99.9%
	1551.33	1	0.0%
	1716.00	2	0.0%
	1721.00	1	0.0%
	2047.83	1	0.0%
	2054.50	1	0.0%
	2103.56	1	0.0%
	2212.00	1	0.0%
	2215.00	2	0.0%
	4277.00	1	0.0%
	9290.00	1	0.0%
Overall		15275	100.0%
Excluded		0	
Total		15275	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.178	1.000	.000	.
700.00	.912	1.000	.000	.
1212.00	.985	1.013	.072	10.3%
1551.33	.779	1.000	.000	.
1716.00	.983	.998	.010	1.4%
1721.00	.767	1.000	.000	.
2047.83	.871	1.000	.000	.
2054.50	1.043	1.000	.000	.
2103.56	.982	1.000	.000	.
2212.00	1.066	1.000	.000	.
2215.00	.854	.969	.103	14.5%
4277.00	1.263	1.000	.000	.
9290.00	.573	1.000	.000	.
Overall	.985	1.013	.072	10.3%

Age

Case Processing Summary

		Count	Percent
AgeRec	0	1	0.0%
	Over 100	340	2.2%
	75 to 100	238	1.6%
	50 to 75	1112	7.3%
	25 to 50	3753	24.6%
	5 to 25	4817	31.5%

	5 or Newer	5014	32.8%
Overall		15275	100.0%
Excluded		0	
Total		15275	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.178	1.000	.000	.
Over 100	.973	1.036	.120	16.7%
75 to 100	.958	1.029	.119	17.5%
50 to 75	.983	1.020	.097	13.9%
25 to 50	.982	1.010	.078	11.2%
5 to 25	.987	1.010	.063	9.0%
5 or Newer	.986	1.013	.064	8.7%
Overall	.985	1.013	.072	10.3%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	0	1	0.0%
	LE 500 sf	24	0.2%
	500 to 1,000 sf	750	4.9%
	1,000 to 1,500 sf	3956	25.9%
	1,500 to 2,000 sf	5488	35.9%
	2,000 to 3,000 sf	4266	27.9%
	3,000 sf or Higher	790	5.2%
Overall		15275	100.0%
Excluded		0	
Total		15275	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.178	1.000	.000	.
LE 500 sf	1.015	1.049	.145	19.4%
500 to 1,000 sf	.967	1.014	.095	13.7%
1,000 to 1,500 sf	.979	1.007	.068	9.9%
1,500 to 2,000 sf	.988	1.007	.066	9.3%
2,000 to 3,000 sf	.989	1.017	.073	10.4%
3,000 sf or Higher	.983	1.024	.098	13.2%
Overall	.985	1.013	.072	10.3%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY		1	0.0%
	Average	11582	75.8%
	Average Plus	2362	15.5%

	Excellent	4	0.0%
	Fair	337	2.2%
	Good	748	4.9%
	Good Plus	170	1.1%
	Low	8	0.1%
	Very Good	63	0.4%
Overall		15275	100.0%
Excluded		0	
Total		15275	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.178	1.000	.000	.
Average	.984	1.008	.066	9.5%
Average Plus	.991	1.014	.077	10.5%
Excellent	.932	1.027	.151	23.6%
Fair	.980	1.024	.106	16.6%
Good	.988	1.025	.109	14.1%
Good Plus	.959	1.017	.109	14.0%
Low	1.010	1.017	.107	14.3%
Very Good	.989	1.034	.133	18.0%
Overall	.985	1.013	.072	10.3%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION		1	0.0%
	Average	15244	99.8%
	Badly Worn	5	0.0%
	Good	22	0.1%
	Very Good	2	0.0%
	Worn Out	1	0.0%
Overall		15275	100.0%
Excluded		0	
Total		15275	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.178	1.000	.000	.
Average	.985	1.013	.072	10.3%
Badly Worn	.962	1.018	.043	6.4%
Good	.997	1.001	.071	9.8%
Very Good	.921	.984	.036	5.1%
Worn Out	1.171	1.000	.000	.
Overall	.985	1.013	.072	10.3%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$25K to $50K	1	0.3%
	$50K to $100K	4	1.1%
	$100K to $150K	7	1.9%
	$150K to $200K	11	2.9%
	$200K to $300K	30	8.0%
	$300K to $500K	68	18.0%
	$500K to $750K	61	16.2%
	$750K to $1,000K	33	8.8%
	Over $1,000K	162	43.0%
Overall		377	100.0%
Excluded		0	
Total		377	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$25K to $50K	.920	1.000	.000	.
$50K to $100K	1.043	1.043	.167	24.0%
$100K to $150K	1.073	1.003	.064	8.7%
$150K to $200K	1.002	1.000	.071	10.4%
$200K to $300K	.999	1.002	.087	14.9%
$300K to $500K	.988	.997	.094	14.7%
$500K to $750K	.985	.995	.101	24.9%
$750K to $1,000K	.979	.999	.142	23.3%
Over $1,000K	.963	1.012	.093	14.7%
Overall	.979	1.028	.100	17.6%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	.00	1	0.3%
	1212.00	2	0.5%
	1712.00	2	0.5%
	1716.00	1	0.3%
	2014.40	1	0.3%
	2156.31	1	0.3%
	2181.16	1	0.3%
	2212.00	52	13.8%
	2215.00	6	1.6%
	2220.00	37	9.8%
	2223.50	1	0.3%
	2225.00	3	0.8%
	2228.62	1	0.3%
	2230.00	57	15.1%

	2235.00	53	14.1%
	2245.00	146	38.7%
	3215.00	4	1.1%
	3230.00	4	1.1%
	9259.00	1	0.3%
	9279.00	2	0.5%
	9299.00	1	0.3%
Overall		377	100.0%
Excluded		0	
Total		377	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.924	1.000	.000	.
1212.00	1.000	.982	.075	10.6%
1712.00	.934	1.000	.012	1.7%
1716.00	.959	1.000	.000	.
2014.40	.900	1.000	.000	.
2156.31	.965	1.000	.000	.
2181.16	1.287	1.000	.000	.
2212.00	.949	1.016	.085	12.5%
2215.00	.949	1.005	.064	8.2%
2220.00	.942	1.022	.083	12.9%
2223.50	1.048	1.000	.000	.
2225.00	1.011	1.018	.025	4.0%
2228.62	.954	1.000	.000	.
2230.00	.979	1.022	.103	15.8%
2235.00	.976	1.025	.106	18.2%
2245.00	.997	1.011	.102	20.4%
3215.00	.964	1.050	.058	9.9%
3230.00	.972	1.024	.029	3.5%
9259.00	.332	1.000	.000	.
9279.00	.892	1.113	.180	25.5%
9299.00	1.155	1.000	.000	.
Overall	.979	1.028	.100	17.6%

Age

Case Processing Summary

		Count	Percent
AgeRec	0	1	0.3%
	Over 100	33	8.8%
	75 to 100	8	2.1%
	50 to 75	56	14.9%
	25 to 50	105	27.9%
	5 to 25	143	37.9%
	5 or Newer	31	8.2%
Overall		377	100.0%
Excluded		0	
Total		377	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.924	1.000	.000	.
Over 100	.931	.992	.102	12.9%
75 to 100	.927	1.084	.125	23.3%
50 to 75	.964	1.023	.112	17.0%
25 to 50	.979	1.017	.094	16.1%
5 to 25	.996	1.029	.079	12.4%
5 or Newer	.971	1.104	.172	37.8%
Overall	.979	1.028	.100	17.6%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	5	1.3%
	500 to 1,000 sf	28	7.4%
	1,000 to 1,500 sf	46	12.2%
	1,500 to 2,000 sf	41	10.9%
	2,000 to 3,000 sf	64	17.0%
	3,000 sf or Higher	193	51.2%
Overall		377	100.0%
Excluded		0	
Total		377	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.924	1.133	.160	29.8%
500 to 1,000 sf	.998	1.035	.094	14.1%
1,000 to 1,500 sf	.979	1.031	.082	12.0%
1,500 to 2,000 sf	.997	1.018	.080	12.4%
2,000 to 3,000 sf	.978	1.042	.096	15.6%
3,000 sf or Higher	.975	1.033	.107	20.6%
Overall	.979	1.028	.100	17.6%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	Average	264	70.0%
	Average Plus	45	11.9%
	Fair	10	2.7%
	Good	57	15.1%
	Very Good	1	0.3%
Overall		377	100.0%
Excluded		0	
Total		377	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	.979	1.028	.102	19.2%
Average Plus	.981	1.026	.120	15.9%
Fair	.992	1.045	.082	16.2%
Good	.977	1.021	.071	9.9%
Very Good	.759	1.000	.000	.
Overall	.979	1.028	.100	17.6%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION	Average	342	90.7%
	Good	21	5.6%
	Very Good	14	3.7%
Overall		377	100.0%
Excluded		0	
Total		377	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	.979	1.028	.102	18.2%
Good	.989	1.019	.097	13.3%
Very Good	1.000	1.013	.047	6.3%
Overall	.979	1.028	.100	17.6%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	7	1.1%
	$25K to $50K	50	8.2%
	$50K to $100K	119	19.5%
	$100K to $150K	88	14.4%
	$150K to $200K	60	9.9%
	$200K to $300K	83	13.6%
	$300K to $500K	144	23.6%
	$500K to $750K	41	6.7%
	$750K to $1,000K	6	1.0%
	Over $1,000K	11	1.8%
Overall		609	100.0%
Excluded		0	
Total		609	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.204	.912	.568	114.6%
$25K to $50K	1.040	.998	.221	42.0%
$50K to $100K	1.000	1.004	.118	20.1%
$100K to $150K	.982	1.002	.112	17.3%
$150K to $200K	.983	.997	.119	21.4%
$200K to $300K	.999	.998	.122	22.3%
$300K to $500K	.980	1.002	.120	18.6%
$500K to $750K	.865	1.003	.115	14.5%
$750K to $1,000K	.747	.997	.194	24.2%
Over $1,000K	.960	.954	.220	33.4%
Overall	.992	1.065	.140	27.5%

SubClass

Case Processing Summary

		Count	Percent
ABSTRLND	100.00	313	51.4%
	200.00	29	4.8%
	400.00	45	7.4%
	510.00	5	0.8%
	520.00	7	1.1%
	530.00	4	0.7%
	540.00	11	1.8%
	550.00	45	7.4%
	1112.00	145	23.8%
	1125.00	1	0.2%
	2112.00	2	0.3%
	2115.00	1	0.2%
	2130.00	1	0.2%
Overall		609	100.0%
Excluded		0	
Total		609	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100.00	.996	1.067	.158	33.1%
200.00	.973	1.013	.165	25.2%
400.00	.999	1.106	.106	15.1%
510.00	.938	.971	.061	8.7%
520.00	.997	1.167	.231	53.4%
530.00	.993	1.035	.049	10.8%
540.00	.979	1.091	.086	13.8%
550.00	.996	1.006	.123	19.5%
1112.00	.983	1.039	.112	17.5%
1125.00	.960	1.000	.000	.
2112.00	.733	.938	.222	31.3%
2115.00	.467	1.000	.000	.
2130.00	1.001	1.000	.000	.
Overall	.992	1.065	.140	27.5%