2020
LARIMER COUNTY PROPERTY ASSESSMENT STUDY

WILDROSE
APPRAISAL, INCORPORATED
Audit Division

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APPRAISAL, INCORPORATED
Audit Division

September 15, 2020

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

RE: Final Report for the 2020 Colorado Property Assessment Study

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2020 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.

Wildrose Appraisal Inc. – 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
Wildrose Appraisal Inc. – Audit Division

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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.

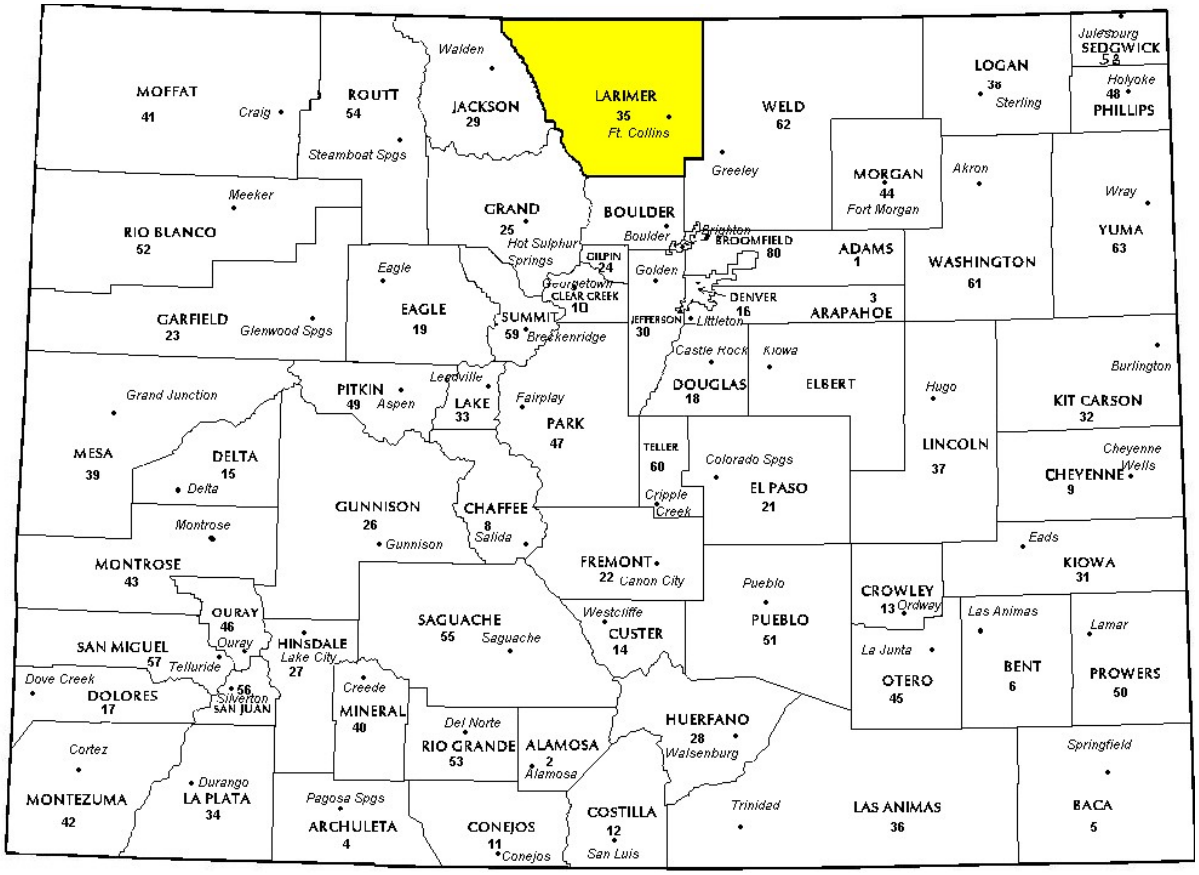
Statistical analysis is performed on vacant land, residential properties, commercial/industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax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

Wildrose Audit has completed the Property Assessment Study for 2020 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 had an estimated population of approximately 339,993 people with 130.96 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 13.47 percent change from April 1, 2010 to July 1, 2016.

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 properties were analyzed. Sales were collected for each property class over the appropriate sale period, which was typically defined as the 18-month period between January 1, 2017 and June 30, 2018. Counties with less than 30 sales typically extended the sale period back up to 5 years prior to June 30, 2018 in 6-month increments. If there were still fewer than 30 sales, supplemental appraisals were performed and treated as proxy sales. Residential sales for all counties using this method totaled at least 30 per county. For commercial sales, the total number analyzed was allowed, in some cases, to fall below 30. There were no sale quantity issues for counties requiring vacant land analysis or condominium analysis. 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. For the largest 11 counties, the residential ratio statistics were broken down by economic area as well.

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 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	501	0.964	1.050	8.2	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	14,678	0.995	1.009	6.3	Compliant
Vacant Land	1,792	0.952	1.024	20	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
Condominium	N/A
Single Family	Compliant
Vacant Land	Compliant

Conclusions

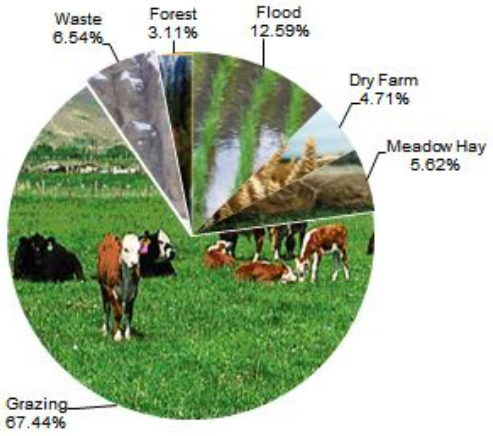
After applying the above described methodologies, it is concluded that Larimer County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

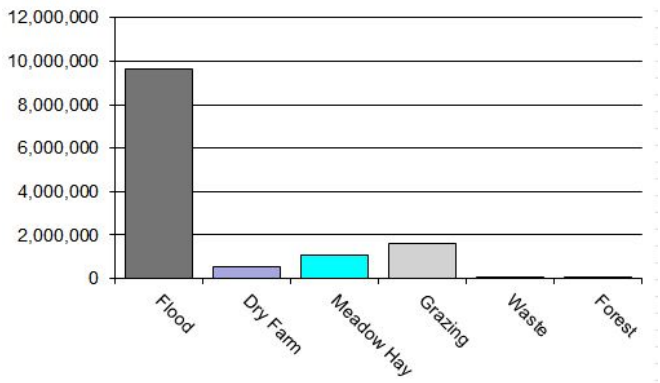
None

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	49,237	196.16	9,658,599	9,752,168	0.99
4127	Dry Farm	18,419	30.51	562,010	581,931	0.97
4137	Meadow Hay	21,983	49.90	1,097,029	1,097,029	1.00
4147	Grazing	263,735	6.15	1,621,812	1,621,812	1.00
4177	Forest	12,161	6.48	78,813	79,098	1.00
4167	Waste	25,559	2.39	60,979	60,979	1.00
Total/Avg		**391,095**	**33.44**	**13,079,241**	**13,193,017**	**0.99**

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 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
- Written Correspondence other than Questionnaire
- 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.:

- Questionnaires
- Phone Interviews
- Written Correspondence other than Questionnaire
- Aerial Photography/Pictometry

Larimer 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.

WRA reviewed the sales verification procedures in 2020 for Larimer County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 58 sales listed as unqualified.

All but one of the sales selected in the sample gave reasons that were clear and supportable. One sale had insufficient reason for disqualification.

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

Larimer County appears to be doing a good job of verifying their sales.

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 2020 in Larimer 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

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 2020 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 $7,700 actual value exemption status
- Accounts protested with substantial disagreement

Larimer County's median ratio is 1.02. 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

WILDROSE AUDITOR STAFF

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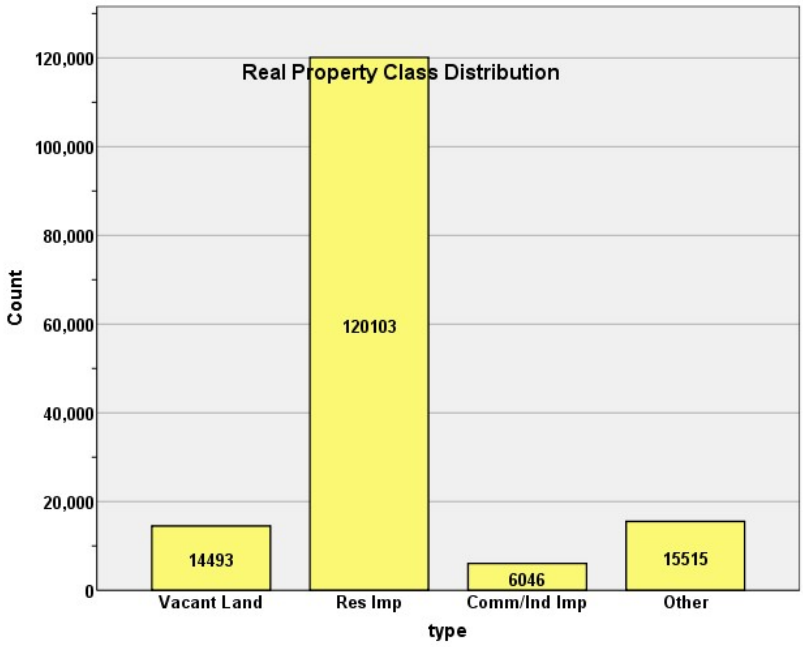
APPENDICES

STATISTICAL COMPIANCE REPORT
FOR LARIMER COUNTY
2020

I. OVERVIEW

Larimer County is a northern county located along Colorado's Front Range urban corridor. The county has a total of 156,157 real property parcels, according to data submitted by the county assessor's office in 2020. 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 75.4% of all vacant land parcels.

For residential improved properties, single family properties accounted for 87.5% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 3.9% of all such properties in this county.

Based on the Audit questionnaire filled out by the assessor (see below), the following geographic levels were used by the assessor to value residential, commercial and vacant land properties, along with notes from the assessor regarding thus stratification:

Geo Area	Residential	Comm/Ind	Vacant Land
Economic Area	V	V	V
Neighborhood	V	N	N
Subdivision	N	N	N

Codes
***V**=Valid Geographic Level – used for modeling*
***N** = Not used as Geographic Level for modeling*

Note: While adjustments were made based on lower levels (subdivision for Res and Neighborhood and Subs for Comm and Vacant) the modeling was not done at this level as indicated by the N

II. DATA FILES

The following sales analyses were based on the requirements of the 2020 Colorado Property Assessment Study. Information was provided by the Larimer Assessor's Office in April 2020. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 14,678 qualified residential sales for the 24-month period ending June 30, 2016. The sales ratio analysis results were as follows:

Median	**0.995**
Price Related Differential	**1.009**
Coefficient of Dispersion	**6.3**

We next stratified the sale ratio analysis by economic and neighborhood. The minimum count for the neighborhood stratification is 20 sales. The following are the results of this stratification analysis:

Economic Area

Case Processing Summary

		Count	Percent
ECONAREA	EA1	8008	54.6%
	EA2	5444	37.1%
	EA3	666	4.5%
	EA4	560	3.8%
Overall		14678	100.0%
Excluded		0	
Total		14678	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
EA1	.995	1.008	.059
EA2	.995	1.010	.061
EA3	.997	1.009	.080
EA4	.996	1.012	.118
Overall	.995	1.009	.063

B. Neighborhoods with 30 or more sales

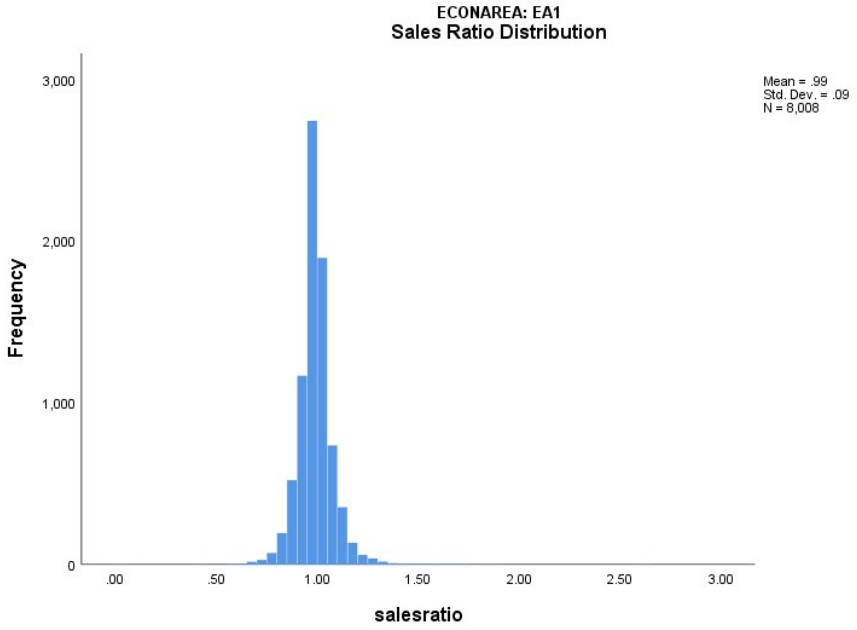
Ratio Statistics for CURRTOT / TASP

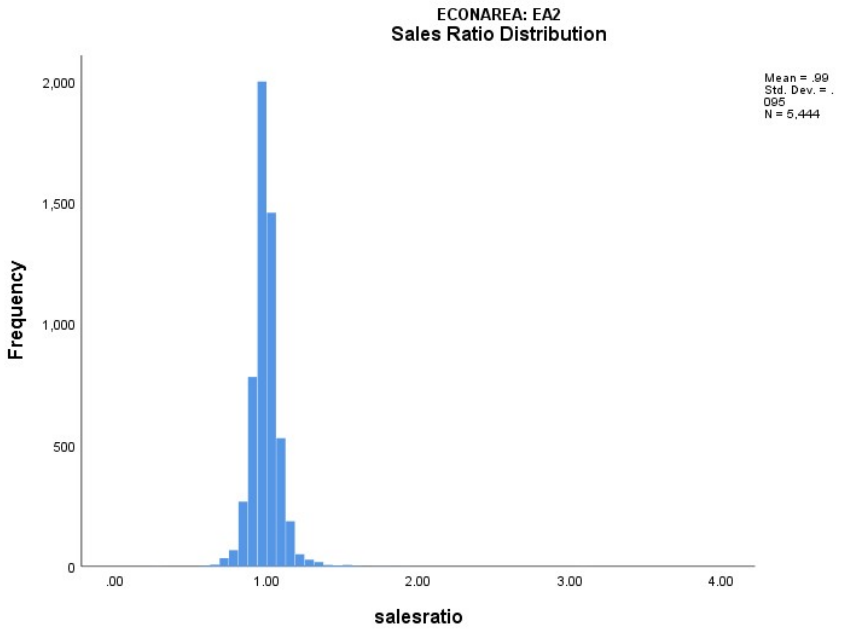
Group	Median	Price Related Differential	Coefficient of Dispersion
18729 0679	.995	1.001	.052
18729 0896	.993	1.003	.053
18729 0898	.996	1.010	.062
18729 1367	.998	1.000	.062
18729 1733	1.000	.999	.030
18729 1997	.990	1.003	.058
18729 19976	.993	1.000	.032
18729 8014	.991	1.001	.037
18729 8040	.989	1.000	.043
18729 8085	1.003	1.004	.041
18729 8174	.998	1.000	.064
18729 8343	.996	1.005	.043
18933 0398	.984	1.002	.069
18933 1942	.998	1.000	.028
18933 1971	.997	1.000	.055
18933 1996	.999	1.002	.027
18933 5006	.990	1.020	.081
18933 5007	.996	1.000	.048
18933 5008	.988	1.002	.040
18933 5008001005	.997	1.004	.047
18933 5013	.984	1.017	.086
18933 5017	.992	1.001	.042
18933 6035	1.000	1.000	.042
18933 6043	.999	1.006	.069
18933 6045	.998	.999	.042
18933 6046	.999	1.003	.045
18933 6048	.999	1.002	.039
18933 6051	.997	1.002	.031
18933 6055	.998	1.001	.046
18933 6064	1.000	1.001	.037
18933 8094	.996	1.003	.077
18933 80942	.996	1.000	.074
18933 8098	.992	1.000	.055
18933 8108	.999	.997	.047
18933 8132	.995	1.000	.040
18933 8151	1.023	1.000	.027
18933 8330	.998	.999	.042
19601 1344	1.000	1.002	.050
19601 1976	.948	1.010	.074
19613 0637	.990	1.050	.064
19613 1566	.994	1.000	.054
19613 1838	.986	1.004	.067

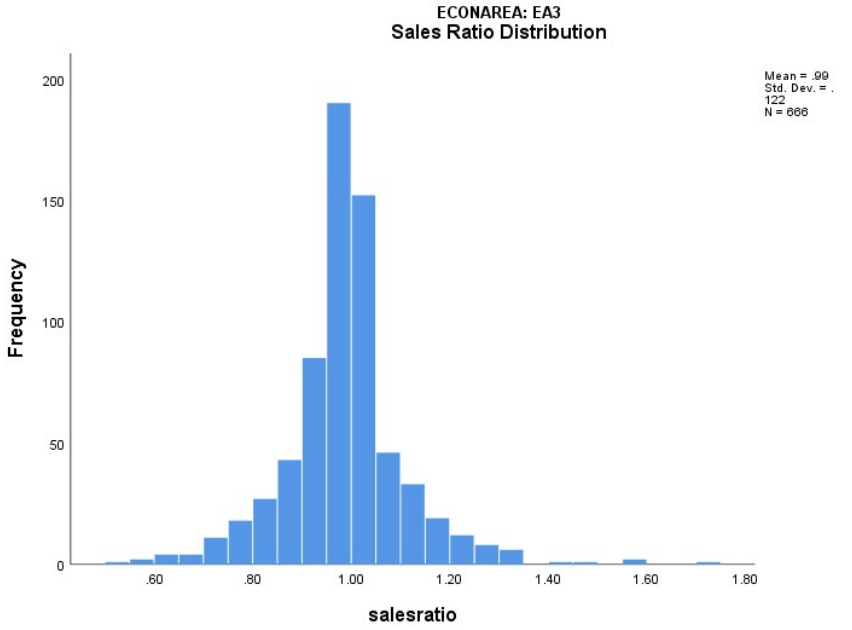
19613 1956	.990	1.000	.033
19613 8045	1.001	1.002	.078
19614 1851	.992	1.004	.050
19614 18513	.996	1.000	.047
19614 80003	.987	.998	.058
19711 1326	.947	1.009	.084
19722 1227	1.008	.997	.078
19722 13562	.999	1.001	.064
19722 8237	.999	1.005	.058
19724 1176	.971	1.013	.077
19724 1196	1.003	1.002	.067
19724 8181	.991	1.001	.040
19734 8170	.984	1.001	.039
19836 8116	.994	.999	.046
199 X	.992	1.048	.065
28506 2436	1.000	1.001	.045
28506 2694	1.008	.999	.055
28506 2723	.999	1.006	.065
28506 2725	.986	.997	.068
28506 2736	.993	1.002	.057
28506 2753	1.002	1.001	.040
28506 5802	.990	1.000	.051
28506 5802001001	.975	1.000	.063
28506 5813	1.008	1.008	.075
28623 0455	1.000	1.004	.076
28623 5510	.991	1.013	.070
28623 5513	.999	1.003	.057
28623 5514	.972	1.010	.069
29414 4114	.993	1.002	.048
29414 4118	.996	1.002	.038
29414 4123	1.000	1.001	.042
29414 4125	1.000	.999	.048
29502 2223	.998	1.004	.067
29502 2340	.998	1.000	.043
29502 2407	1.000	.997	.059
29502 2558	.975	.999	.056
29502 25619	.988	.999	.054
29502 2624	.999	1.004	.050
29502 2686	1.001	1.000	.057
29517 2631014000	.919	.992	.075
29517 2768	.999	1.000	.045
29522 2290	.997	1.002	.053
29522 24015	1.000	.998	.051
29522 24017	.998	.999	.053
29522 2690	.991	.998	.062
29522 2716301	.995	1.000	.044
29522 2744	.996	1.001	.054
29522 2744008000	.998	1.004	.055
29522 2744009000	.999	1.004	.064
29522 2803	.984	1.004	.048
29635 2691	.998	1.000	.030
29635 27331	.993	1.006	.061
29635 2748	.987	1.002	.056
29635 8510	.979	1.013	.089
33525 0223	.981	.998	.095
33525 3195	.987	1.015	.110
41428 0151	1.000	1.014	.094

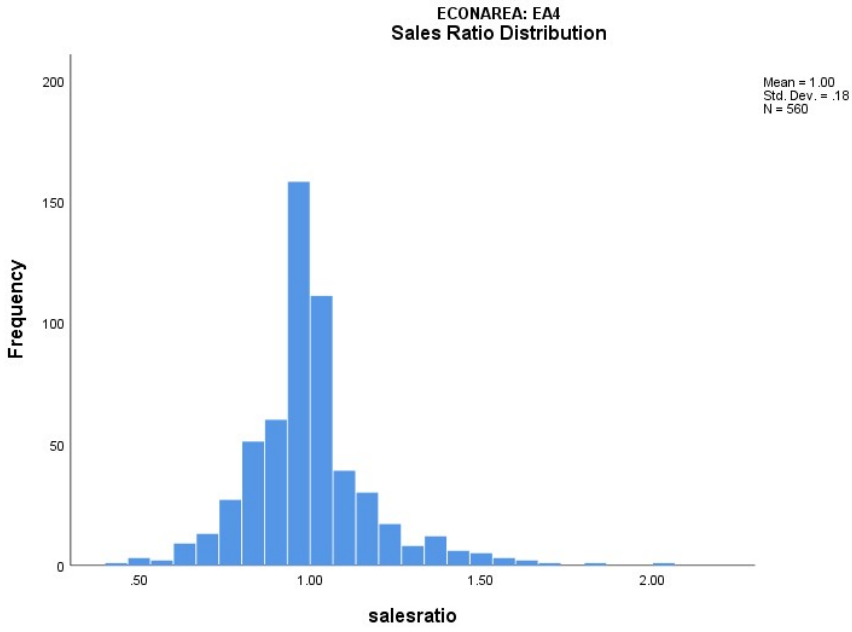
42915 0327	.998	.999	.125
43028 0272	.982	1.023	.132
Overall	.995	1.008	.057

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 30 sales were outside of the standards for either the median sales ratio or the COD. The following graphs describe further the sales ratio distribution for these properties:









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

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.
EA1	1	(Constant)	.996	.002		526.247	.000
		SalePeriod	.000	.000	-.029	-2.616	.009
EA2	1	(Constant)	.995	.002		413.118	.000
		SalePeriod	.000	.000	-.009	-.652	.515
EA3	1	(Constant)	.993	.009		109.601	.000
		SalePeriod	.000	.001	-.022	-.561	.575
EA4	1	(Constant)	.977	.015		66.037	.000
		SalePeriod	.002	.001	.067	1.579	.115

a. Dependent Variable: salesratio

There was no residual market trending present in the sale ratio data for any of the economic areas; in Economic Area 1, where the marginally statistical significant trend was present, the magnitude of that trend at less than 0.1% 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 2020 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	104727	$234	$242
SOLD	14678	$234	$245

Report
VALSF

ECONAREA	sold	N	Median	Mean
EA1	UNSOLD	56995	$236	$247
	SOLD	8008	$234	$246
EA2	UNSOLD	34748	$225	$228
	SOLD	5444	$227	$234
EA3	UNSOLD	6023	$290	$299
	SOLD	666	$297	$320
EA4	UNSOLD	6714	$213	$217
	SOLD	560	$233	$242

We next stratified the comparison by neighborhood with at least 30 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	367	$207	$215
	SOLD	40	$205	$206

18729 0896	UNSOLD	89	$196	$206
	SOLD	52	$201	$211
18729 0898	UNSOLD	164	$236	$239
	SOLD	121	$221	$226
18729 1367	UNSOLD	215	$243	$257
	SOLD	31	$245	$259
18729 1733	UNSOLD	307	$214	$227
	SOLD	30	$219	$236
18729 1997	UNSOLD	303	$233	$238
	SOLD	62	$232	$241
18729 19976	UNSOLD	250	$215	$220
	SOLD	65	$213	$212
18729 8014	UNSOLD	434	$232	$233
	SOLD	78	$229	$232
18729 8040	UNSOLD	319	$217	$222
	SOLD	51	$222	$225
18729 8085	UNSOLD	152	$235	$238
	SOLD	32	$235	$239
18729 8174	UNSOLD	15	$250	$249
	SOLD	56	$244	$248
18729 8343	UNSOLD	1	$313	$313
	SOLD	59	$316	$317
18933 0398	UNSOLD	224	$216	$224
	SOLD	30	$204	$211
18933 1942	UNSOLD	173	$216	$217
	SOLD	54	$215	$215
18933 1971	UNSOLD	381	$210	$213
	SOLD	96	$211	$213
18933 1996	UNSOLD	90	$258	$250
	SOLD	48	$207	$222
18933 5006	UNSOLD	217	$414	$425
	SOLD	48	$433	$440
18933 5007	UNSOLD	336	$180	$186
	SOLD	133	$181	$189
18933 5008	UNSOLD	164	$224	$227
	SOLD	37	$201	$214
18933 5008001005	UNSOLD	105	$192	$196
	SOLD	87	$194	$199
18933 5013	UNSOLD	102	$315	$316
	SOLD	35	$310	$297
18933 5017	UNSOLD	93	$180	$201
	SOLD	52	$180	$202
18933 6035	UNSOLD	219	$231	$229
	SOLD	47	$216	$227
18933 6043	UNSOLD	270	$240	$235
	SOLD	52	$239	$233
18933 6045	UNSOLD	100	$202	$197
	SOLD	70	$162	$173
18933 6046	UNSOLD	176	$195	$210
	SOLD	48	$200	$207
18933 6048	UNSOLD	309	$234	$226
	SOLD	131	$228	$218
18933 6051	UNSOLD	33	$168	$165
	SOLD	67	$161	$160
	Total	100	$161	$162
18933 6055	UNSOLD	53	$223	$218
	SOLD	81	$199	$211

18933 6064	UNSOLD	4	$184	$189
	SOLD	114	$181	$188
18933 8094	UNSOLD	103	$222	$227
	SOLD	74	$212	$222
18933 80942	UNSOLD	198	$242	$241
	SOLD	35	$236	$240
18933 8098	UNSOLD	443	$209	$218
	SOLD	64	$202	$211
18933 8108	UNSOLD	146	$188	$192
	SOLD	34	$189	$192
18933 8132	UNSOLD	235	$219	$224
	SOLD	37	$215	$218
18933 8151	UNSOLD	183	$267	$267
	SOLD	37	$267	$267
18933 8330	UNSOLD	22	$207	$206
	SOLD	150	$216	$218
19601 1344	UNSOLD	394	$208	$213
	SOLD	47	$212	$222
19601 1976	UNSOLD	149	$315	$314
	SOLD	33	$311	$298
19613 0637	UNSOLD	237	$248	$256
	SOLD	36	$257	$276
19613 1566	UNSOLD	382	$221	$225
	SOLD	43	$227	$234
19613 1838	UNSOLD	200	$201	$212
	SOLD	34	$197	$206
19613 1956	UNSOLD	301	$221	$222
	SOLD	57	$226	$221
19613 8045	UNSOLD	197	$252	$249
	SOLD	34	$253	$249
19614 1851	UNSOLD	233	$222	$228
	SOLD	36	$222	$230
19614 18513	UNSOLD	363	$202	$204
	SOLD	51	$205	$206
19614 80003	UNSOLD	180	$214	$211
	SOLD	33	$220	$216
19711 1326	UNSOLD	148	$310	$313
	SOLD	31	$300	$310
19722 1227	UNSOLD	149	$240	$244
	SOLD	40	$237	$243
19722 13562	UNSOLD	241	$246	$259
	SOLD	40	$246	$263
19722 8237	UNSOLD	52	$270	$267
	SOLD	33	$293	$286
19724 1176	UNSOLD	284	$219	$228
	SOLD	32	$219	$221
19724 1196	UNSOLD	177	$254	$255
	SOLD	32	$229	$239
19724 8181	UNSOLD	12	$227	$234
	SOLD	62	$208	$225
19734 8170	UNSOLD	1	$214	$214
	SOLD	35	$216	$221
19836 8116	UNSOLD	171	$286	$270
	SOLD	39	$291	$302
199 X	UNSOLD	1011	$172	$176
	SOLD	36	$240	$264
28506 2436	UNSOLD	326	$223	$235

	SOLD	42	$225	$233
28506 2694	UNSOLD	262	$220	$221
	SOLD	48	$213	$217
28506 2723	UNSOLD	252	$264	$263
	SOLD	39	$248	$255
28506 2725	UNSOLD	252	$220	$222
	SOLD	188	$211	$223
28506 2736	UNSOLD	190	$252	$251
	SOLD	36	$253	$250
28506 2753	UNSOLD	272	$266	$260
	SOLD	50	$269	$268
28506 5802	UNSOLD	324	$193	$195
	SOLD	134	$189	$190
28506 5802001001	UNSOLD	215	$170	$168
	SOLD	109	$167	$165
28506 5813	UNSOLD	72	$230	$250
	SOLD	88	$264	$252
28623 0455	UNSOLD	252	$229	$231
	SOLD	38	$216	$218
28623 5510	UNSOLD	550	$289	$286
	SOLD	137	$285	$282
28623 5513	UNSOLD	241	$254	$251
	SOLD	52	$256	$248
28623 5514	UNSOLD	275	$259	$256
	SOLD	88	$256	$252
29414 4114	UNSOLD	75	$211	$208
	SOLD	112	$207	$208
29414 4118	UNSOLD	38	$219	$224
	SOLD	125	$246	$242
29414 4123	UNSOLD	20	$196	$205
	SOLD	159	$196	$204
29414 4125	UNSOLD	22	$205	$230
	SOLD	99	$197	$222
29502 2223	UNSOLD	410	$207	$220
	SOLD	55	$211	$228
29502 2340	UNSOLD	276	$200	$208
	SOLD	30	$196	$201
29502 2407	UNSOLD	274	$246	$249
	SOLD	35	$244	$245
29502 2558	UNSOLD	311	$204	$202
	SOLD	62	$208	$200
29502 25619	UNSOLD	249	$180	$191
	SOLD	32	$176	$186
29502 2624	UNSOLD	267	$229	$227
	SOLD	38	$225	$224
29502 2686	UNSOLD	174	$245	$243
	SOLD	32	$221	$235
29517 2631014000	UNSOLD	35	$279	$280
	SOLD	32	$259	$260
29517 2768	UNSOLD	82	$246	$241
	SOLD	56	$199	$215
29522 2290	UNSOLD	243	$256	$246
	SOLD	31	$246	$239
29522 24015	UNSOLD	213	$267	$253
	SOLD	37	$261	$247
29522 24017	UNSOLD	225	$261	$253
	SOLD	37	$263	$253

29522 2690	UNSOLD	170	$189	$197
	SOLD	31	$196	$205
29522 2716301	UNSOLD	174	$251	$253
	SOLD	41	$266	$260
29522 2744	UNSOLD	58	$228	$229
	SOLD	43	$204	$218
29522 2744008000	UNSOLD	6	$192	$203
	SOLD	48	$185	$204
29522 2744009000	UNSOLD	43	$196	$203
	SOLD	52	$198	$206
29522 2803	UNSOLD	137	$303	$302
	SOLD	46	$294	$297
29635 2691	UNSOLD	193	$253	$251
	SOLD	31	$256	$251
29635 27331	UNSOLD	255	$269	$260
	SOLD	47	$281	$267
29635 2748	UNSOLD	284	$260	$256
	SOLD	51	$269	$264
29635 8510	UNSOLD	289	$227	$229
	SOLD	48	$239	$231
33525 0223	UNSOLD	480	$284	$285
	SOLD	54	$281	$288
33525 3195	UNSOLD	116	$266	$290
	SOLD	32	$261	$260
41428 0151	UNSOLD	299	$269	$277
	SOLD	31	$281	$287
42915 0327	UNSOLD	463	$206	$205
	SOLD	84	$205	$213
43028 0272	UNSOLD	737	$212	$218
	SOLD	91	$216	$223

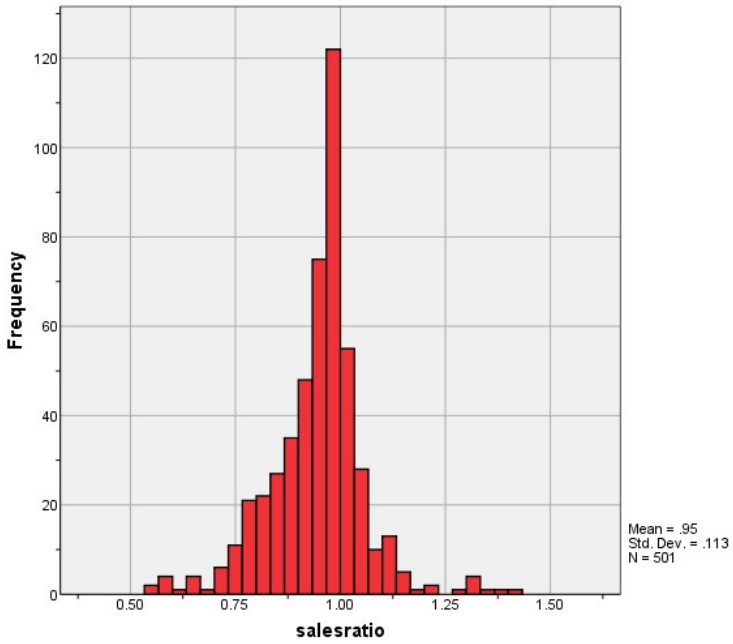
The above results indicate that sold and unsold residential properties were valued in a consistent manner. Some sales were trimmed due to extreme values.

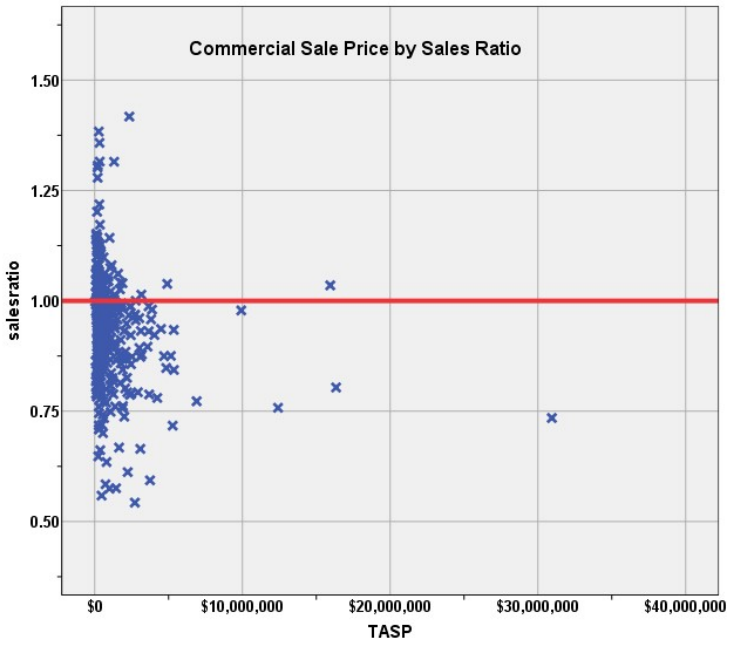
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 501 qualified commercial and industrial sales for the 60 month period ending June 30, 2018. The sales ratio analysis results were as follows:

Median	**0.964**
Price Related Differential	**1.050**
Coefficient of Dispersion	**8.2**

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





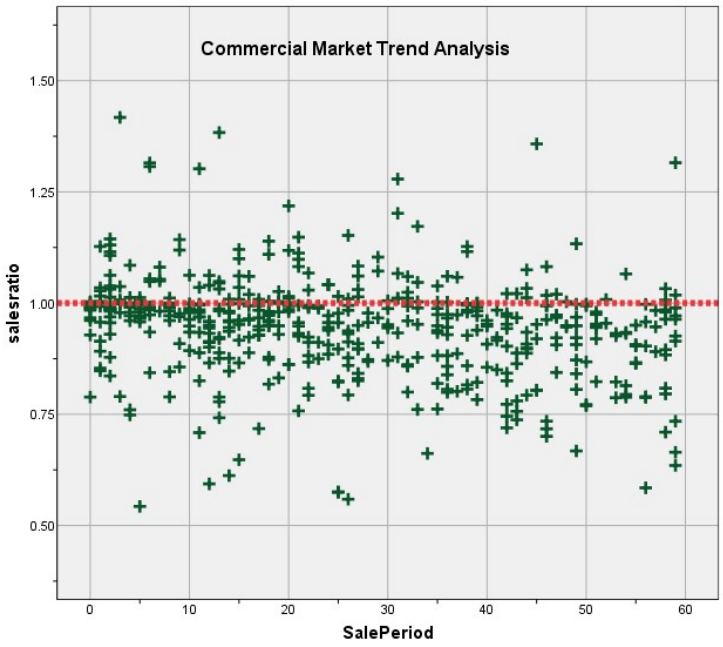
Commercial/Industrial Market Trend Analysis

The assessor did apply market trend adjustments to the commercial/industrial dataset. The commercial/industrial sales were analyzed, examining the sale ratios across the 60 month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.986	.009		112.111	.000
	SalePeriod	-.002	.000	-.232	-5.332	.000

a. Dependent Variable: salesratio



There was a statistically significant residual market trending present in the commercial sale ratios, although the magnitude of that trend was not significant. We concluded that the assessor has adequately considered market trending adjustments as part of the vacant land valuation.

Sold/Unsold Analysis

We compared the median change in actual value for taxable years 2018 and 2020 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	5270	1.0807	1.1153
SOLD	468	1.1573	1.1919

Report
DIFF

ABSTRIMP	sold	N	Median	Mean
2088.86	UNSOLD	2	1.2304	1.2304
	SOLD	1	1.0115	1.0115
2212.00	UNSOLD	678	1.0522	1.0792

	SOLD	39	1.1341	1.1721
2215.00	UNSOLD	68	1.1323	1.1925
	SOLD	2	1.1375	1.1375
2216.00	UNSOLD	9	1.1560	1.1969
	SOLD	1	.9219	.9219
2220.00	UNSOLD	446	1.0735	1.0990
	SOLD	59	1.1564	1.2131
2223.50	UNSOLD	17	1.0864	1.1065
	SOLD	2	1.0417	1.0417
2227.50	UNSOLD	37	1.0947	1.0969
	SOLD	3	1.1333	1.1534
2230.00	UNSOLD	1000	1.0510	1.0899
	SOLD	73	1.1556	1.1952
2232.50	UNSOLD	9	1.1411	1.2527
	SOLD	1	1.1080	1.1080
2235.00	UNSOLD	796	1.0893	1.1273
	SOLD	58	1.1200	1.1813
2240.00	UNSOLD	37	1.0165	1.0544
	SOLD	2	1.2936	1.2936
2245.00	UNSOLD	1671	1.1112	1.1407
	SOLD	213	1.1805	1.2003
3215.00	UNSOLD	116	1.0880	1.0826
	SOLD	8	1.1340	1.1214
3230.00	UNSOLD	40	1.2511	1.2135
	SOLD	2	1.0886	1.0886

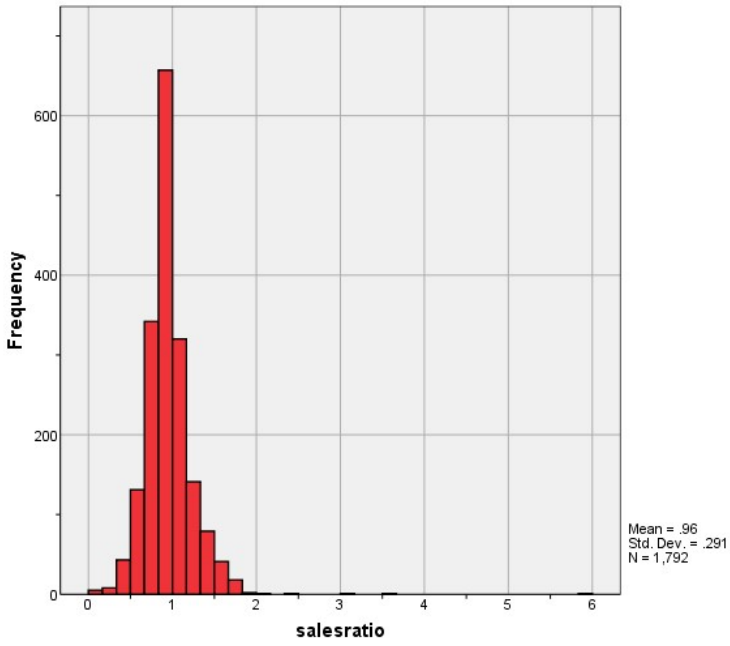
Although the magnitude overall was not significant, we did consult with the assessor's office to review the commercial valuation process. After reviewing these results, we concluded that sold and unsold commercial properties in this county were valued consistently.

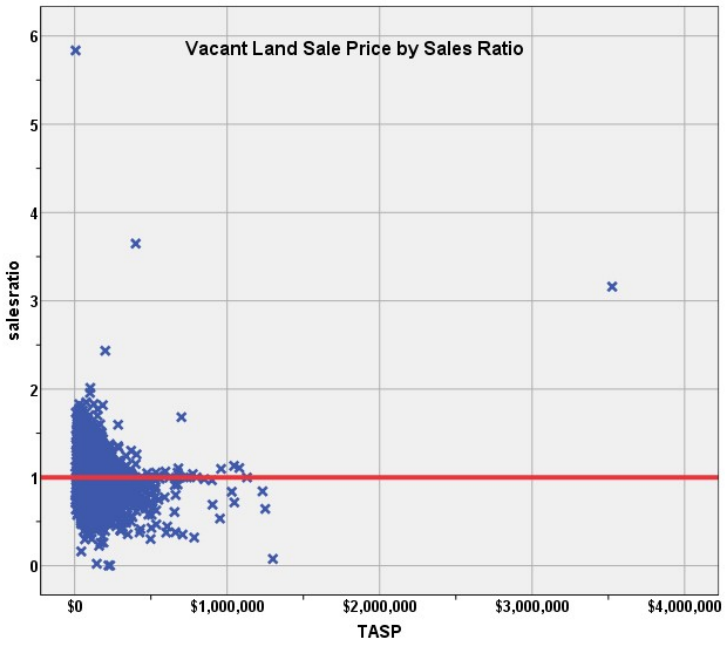
V. VACANT LAND SALE RESULTS

There were 1,792 qualified vacant land sales for the 60 month period ending June 30, 2018. The sales ratio analysis results were as follows:

Median	**0.952**
Price Related Differential	**1.024**
Coefficient of Dispersion	**20.0**

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.

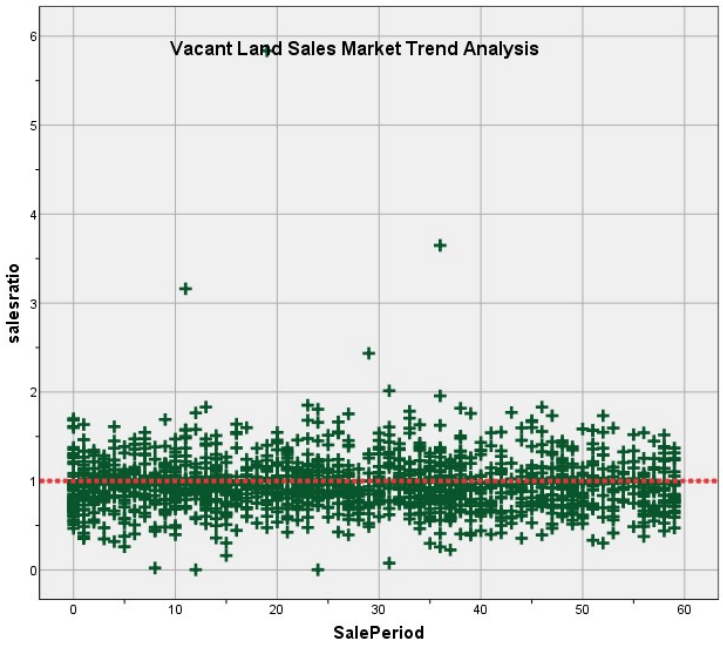
Vacant Land Market Trend Analysis

We next analyzed the vacant land dataset using the 60-month sale period and stratified by economic area, with the following results:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.972	.013		77.277	.000
	SalePeriod	-.001	.000	-.031	-1.326	.185

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 taxable years 2018 and 2020 between each group, as follows:

Report
DIFF

sold	N	Median	Mean
UNSOLD	8548	1.0000	1.0735
SOLD	1693	1.0938	1.1425

We next examined sold and unsold properties with at least 10 sales to determine if sold and unsold properties were valued differently, as follows:

Report
DIFF

SUBDIVNO	sold	N	Median	Mean
02523	UNSOLD	8	1.1579	1.1382
	SOLD	10	1.1579	1.1579

0272110	UNSOLD	39	1.3478	1.3158
	SOLD	13	1.3478	1.3392
0272120	UNSOLD	83	1.1600	1.1487
	SOLD	34	1.1600	1.1438
0272130	UNSOLD	48	1.4000	1.3321
	SOLD	15	1.4000	1.3444
0272150	UNSOLD	44	1.0000	.9886
	SOLD	14	1.0000	1.0000
02726	UNSOLD	41	1.2500	1.2130
	SOLD	16	1.2000	1.2073
02728	UNSOLD	31	1.1724	1.2870
	SOLD	20	1.1724	1.3030
0327120	UNSOLD	91	1.1000	1.1387
	SOLD	46	1.2500	1.1770
03276	UNSOLD	18	1.2063	1.1973
	SOLD	13	1.2063	1.2023
03279	UNSOLD	37	.7333	.8486
	SOLD	18	.8667	.8823
0707	UNSOLD	8	1.0174	1.0028
	SOLD	14	.9786	.9952
0724001001	UNSOLD	1	1.0000	1.0000
	SOLD	17	1.0000	1.0000
0754	UNSOLD	1	1.0000	1.0000
	SOLD	11	1.0000	1.0083
5006002000	UNSOLD	36	1.0000	.9916
	SOLD	14	1.0933	1.1297
5006004000	UNSOLD	4	1.1559	1.0450
	SOLD	16	1.3859	1.3096
5007001002	UNSOLD	1	.9410	.9410
	SOLD	12	.9410	.9410
5010001000	UNSOLD	14	.9338	.9338
	SOLD	24	.9338	.9209
5013001001	UNSOLD	4	1.0000	1.1389
	SOLD	19	1.4080	1.3210
5013002000	UNSOLD	11	1.4080	1.2971
	SOLD	19	1.0034	1.1099
5510	UNSOLD	24	1.0215	1.0421
	SOLD	31	1.0215	1.0454
5514	UNSOLD	7	1.3333	1.2857
	SOLD	50	1.3333	1.3237
5803	UNSOLD	3	1.0389	1.1926
	SOLD	11	1.0389	1.2004
6034	UNSOLD	7	1.0000	1.1026
	SOLD	14	1.3590	1.3333
7003390	UNSOLD	12	1.0897	1.0598
	SOLD	18	1.0897	1.0798
8008	UNSOLD	3	.5435	.5435
	SOLD	12	.5435	.5435
8116	UNSOLD	16	.8780	.9220
	SOLD	11	1.2128	1.2128
8312001000	UNSOLD	14	.9683	.9683
	SOLD	24	.9683	.9683

Overall, we concluded that the county assessor valued sold and unsold vacant properties consistently.

V. CONCLUSIONS

Based on this 2020 audit statistical analysis for Larimer County, residential, commercial industrial and vacant land 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
EA1	.992	.990	.994	.995	.994	.997	95.2%	.984	.981	.987	1.008	.059	9.1%
EA2	.994	.991	.996	.995	.994	.997	95.1%	.984	.979	.989	1.010	.061	9.5%
EA3	.988	.979	.998	.997	.988	.999	95.2%	.979	.968	.990	1.009	.080	12.4%
EA4	.998	.983	1.012	.996	.988	1.000	95.3%	.986	.972	.999	1.012	.118	18.0%

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
.947	.937	.957	.964	.956	.972	95.1%	.902	.874	.930	1.050	.082	11.9%

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
.958	.945	.972	.952	.941	.964	95.0%	.936	.880	.991	1.024	.200	30.4%

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

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$50K to $100K	19	0.1%
	$100K to $150K	60	0.4%
	$150K to $200K	275	1.9%
	$200K to $300K	2337	15.9%
	$300K to $500K	8920	60.8%
	$500K to $750K	2364	16.1%
	$750K to $1,000K	476	3.2%
	Over $1,000K	227	1.5%
Overall		14678	100.0%
Excluded		0	
Total		14678	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$50K to $100K	1.205	1.003	.190	24.3%
$100K to $150K	1.041	.997	.216	40.1%
$150K to $200K	1.018	1.002	.106	16.7%
$200K to $300K	1.000	1.001	.070	11.2%
$300K to $500K	.996	1.000	.056	8.3%
$500K to $750K	.991	1.001	.064	9.3%
$750K to $1,000K	.970	1.000	.078	10.6%
Over $1,000K	.951	1.013	.089	11.9%
Overall	.995	1.009	.063	9.9%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1212.00	12687	86.4%
	1213.50	1	0.0%
	1215.00	136	0.9%
	1217.50	1	0.0%
	1220.00	52	0.4%
	1220.67	1	0.0%
	1224.75	1	0.0%
	1225.00	10	0.1%
	1230.00	1774	12.1%
	1712.00	5	0.0%
	1713.50	3	0.0%
	1716.00	2	0.0%
	1727.50	1	0.0%
	2060.67	1	0.0%
	2230.00	1	0.0%
	9249.00	1	0.0%

	9250.00	1	0.0%
Overall		14678	100.0%
Excluded		0	
Total		14678	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	.995	1.007	.064	10.1%
1213.50	1.047	1.000	.000	.
1215.00	.995	1.005	.056	11.1%
1217.50	1.720	1.000	.000	.
1220.00	.989	1.006	.058	8.5%
1220.67	.934	1.000	.000	.
1224.75	.924	1.000	.000	.
1225.00	.931	1.005	.050	7.7%
1230.00	.997	1.005	.054	8.2%
1712.00	1.008	1.040	.144	23.1%
1713.50	.950	.992	.029	4.3%
1716.00	1.000	1.006	.037	5.2%
1727.50	.932	1.000	.000	.
2060.67	.997	1.000	.000	.
2230.00	.999	1.000	.000	.
9249.00	.942	1.000	.000	.
9250.00	1.237	1.000	.000	.
Overall	.995	1.009	.063	9.9%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	260	1.8%
	75 to 100	242	1.6%
	50 to 75	860	5.9%
	25 to 50	3769	25.7%
	5 to 25	5311	36.2%
	5 or Newer	4236	28.9%
Overall		14678	100.0%
Excluded		0	
Total		14678	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.975	1.018	.106	20.4%
75 to 100	.995	1.012	.111	16.8%
50 to 75	.996	1.013	.088	14.2%
25 to 50	.997	1.011	.070	10.8%
5 to 25	.997	1.006	.057	8.7%
5 or Newer	.994	1.009	.052	7.5%
Overall	.995	1.009	.063	9.9%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	41	0.3%
	500 to 1,000 sf	1383	9.4%
	1,000 to 1,500 sf	4318	29.4%
	1,500 to 2,000 sf	4662	31.8%
	2,000 to 3,000 sf	3518	24.0%
	3,000 sf or Higher	756	5.2%
Overall		14678	100.0%
Excluded		0	
Total		14678	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.951	1.097	.247	35.0%
500 to 1,000 sf	.976	1.016	.087	13.1%
1,000 to 1,500 sf	.988	1.007	.061	8.9%
1,500 to 2,000 sf	.996	1.007	.057	8.8%
2,000 to 3,000 sf	1.000	1.011	.059	9.7%
3,000 sf or Higher	1.000	1.038	.072	12.0%
Overall	.995	1.009	.063	9.9%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	Average	10950	74.6%
	Average Plus	2404	16.4%
	Excellent	3	0.0%
	Fair	460	3.1%
	Good	693	4.7%
	Good Plus	116	0.8%
	Low	9	0.1%
	Very Good	43	0.3%
Overall		14678	100.0%
Excluded		0	
Total		14678	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	.995	1.005	.060	9.3%
Average Plus	.998	1.012	.062	10.0%
Excellent	.998	1.012	.068	14.2%
Fair	.984	1.027	.106	17.6%
Good	.999	1.021	.072	11.2%
Good Plus	.995	1.015	.077	11.0%
Low	1.005	1.052	.258	34.8%
Very Good	.994	1.039	.084	12.9%
Overall	.995	1.009	.063	9.9%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION	Average	14656	99.9%
	Badly Worn	1	0.0%
	Good	21	0.1%
Overall		14678	100.0%
Excluded		0	
Total		14678	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	.995	1.009	.063	9.9%
Badly Worn	.965	1.000	.000	.
Good	.978	1.004	.055	7.6%
Overall	.995	1.009	.063	9.9%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$25K to $50K	1	0.2%
	$50K to $100K	8	1.6%
	$100K to $150K	22	4.4%
	$150K to $200K	39	7.8%
	$200K to $300K	94	18.8%
	$300K to $500K	102	20.4%
	$500K to $750K	72	14.4%
	$750K to $1,000K	37	7.4%
	Over $1,000K	126	25.1%
Overall		501	100.0%
Excluded		0	
Total		501	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$25K to $50K	.998	1.000	.000	.
$50K to $100K	.920	1.002	.122	14.3%
$100K to $150K	1.014	1.000	.082	11.2%
$150K to $200K	.970	.998	.088	12.2%
$200K to $300K	.978	1.002	.073	10.9%
$300K to $500K	.971	1.003	.079	11.8%
$500K to $750K	.967	1.000	.056	9.1%
$750K to $1,000K	.968	.997	.050	8.2%
Over $1,000K	.922	1.028	.101	13.9%
Overall	.964	1.050	.082	11.9%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1230.00	2	0.4%
	1712.00	3	0.6%
	1713.50	2	0.4%
	1718.50	1	0.2%
	1721.00	2	0.4%
	1737.50	1	0.2%
	1878.67	1	0.2%
	1880.67	1	0.2%
	1890.67	1	0.2%
	1894.00	1	0.2%
	1964.25	1	0.2%
	2088.86	1	0.2%
	2109.42	1	0.2%
	2161.53	1	0.2%
	2212.00	43	8.6%
	2215.00	2	0.4%
	2216.00	1	0.2%
	2218.00	1	0.2%
	2219.67	1	0.2%
	2220.00	59	11.8%
	2223.50	2	0.4%
	2227.50	3	0.6%
	2230.00	76	15.2%
	2232.50	1	0.2%
	2235.00	59	11.8%
	2240.00	3	0.6%
	2245.00	215	42.9%
	3215.00	9	1.8%
	3230.00	2	0.4%
	5749.50	1	0.2%
	9229.00	1	0.2%
	9249.00	1	0.2%
	9279.00	2	0.4%
Overall		501	100.0%
Excluded		0	
Total		501	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1230.00	1.035	1.073	.095	13.4%
1712.00	.960	.992	.035	5.6%
1713.50	.968	1.000	.024	3.4%
1718.50	1.003	1.000	.000	.
1721.00	1.029	1.000	.030	4.3%
1737.50	1.383	1.000	.000	.
1878.67	.973	1.000	.000	.
1880.67	1.003	1.000	.000	.
1890.67	.883	1.000	.000	.
1894.00	.943	1.000	.000	.
1964.25	1.040	1.000	.000	.
2088.86	.873	1.000	.000	.
2109.42	1.014	1.000	.000	.
2161.53	.956	1.000	.000	.
2212.00	.961	1.110	.076	10.9%
2215.00	.986	.993	.014	2.0%
2216.00	.738	1.000	.000	.
2218.00	.804	1.000	.000	.
2219.67	.927	1.000	.000	.
2220.00	.967	1.041	.071	10.1%
2223.50	.920	1.024	.041	5.8%
2227.50	.953	1.022	.071	11.7%
2230.00	.958	1.021	.074	11.0%
2232.50	.957	1.000	.000	.
2235.00	.976	1.028	.068	11.7%
2240.00	.994	1.020	.018	3.3%
2245.00	.963	1.031	.091	12.8%
3215.00	.871	.979	.103	12.7%
3230.00	.850	1.006	.105	14.9%
5749.50	.960	1.000	.000	.
9229.00	.788	1.000	.000	.
9249.00	1.202	1.000	.000	.
9279.00	1.072	1.040	.075	10.6%
Overall	.964	1.050	.082	11.9%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	25	5.0%
	75 to 100	12	2.4%
	50 to 75	49	9.8%
	25 to 50	171	34.1%
	5 to 25	221	44.1%
	5 or Newer	23	4.6%
Overall		501	100.0%
Excluded		0	
Total		501	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.950	.985	.092	14.8%
75 to 100	.961	1.021	.064	9.6%
50 to 75	.987	.999	.047	6.6%
25 to 50	.964	1.057	.074	11.1%
5 to 25	.957	1.068	.094	13.0%
5 or Newer	.979	1.000	.072	12.2%
Overall	.964	1.050	.082	11.9%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	8	1.6%
	500 to 1,000 sf	28	5.6%
	1,000 to 1,500 sf	84	16.8%
	1,500 to 2,000 sf	59	11.8%
	2,000 to 3,000 sf	76	15.2%
	3,000 sf or Higher	246	49.1%
Overall		501	100.0%
Excluded		0	
Total		501	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.957	.992	.102	12.3%
500 to 1,000 sf	.963	.997	.084	10.6%
1,000 to 1,500 sf	.966	1.013	.084	11.2%
1,500 to 2,000 sf	.967	1.020	.076	12.3%
2,000 to 3,000 sf	.981	1.016	.085	12.7%
3,000 sf or Higher	.957	1.044	.079	11.8%
Overall	.964	1.050	.082	11.9%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	Average	391	78.0%
	Average Plus	50	10.0%
	Fair	10	2.0%
	Good	49	9.8%
	Good Plus	1	0.2%
Overall		501	100.0%
Excluded		0	
Total		501	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	.967	1.034	.077	11.3%
Average Plus	.963	1.119	.085	12.5%
Fair	.963	.978	.080	10.6%
Good	.932	1.031	.109	15.5%
Good Plus	.988	1.000	.000	.
Overall	.964	1.050	.082	11.9%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION	Average	453	90.4%
	Badly Worn	1	0.2%
	Excellent	1	0.2%
	Good	25	5.0%
	Very Good	21	4.2%
Overall		501	100.0%
Excluded		0	
Total		501	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Average	.966	1.048	.078	11.4%
Badly Worn	1.003	1.000	.000	.
Excellent	.988	1.000	.000	.
Good	.906	1.066	.141	17.9%
Very Good	.960	1.020	.078	11.4%
Overall	.964	1.050	.082	11.9%

Economic Area

Case Processing Summary

		Count	Percent
ECONAREA	EA1	227	45.3%
	EA2	230	45.9%
	EA3	43	8.6%
	EA4	1	0.2%
Overall		501	100.0%
Excluded		0	
Total		501	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
EA1	.964	1.044	.089
EA2	.955	1.055	.076
EA3	1.008	1.013	.053
EA4	.850	1.000	.000
Overall	.964	1.050	.082

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	124	6.9%
	$25K to $50K	268	15.0%
	$50K to $100K	319	17.8%
	$100K to $150K	310	17.3%
	$150K to $200K	258	14.4%
	$200K to $300K	296	16.5%
	$300K to $500K	165	9.2%
	$500K to $750K	35	2.0%
	$750K to $1,000K	8	0.4%
	Over $1,000K	9	0.5%
Overall		1792	100.0%
Excluded		0	
Total		1792	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.126	1.008	.253	45.8%
$25K to $50K	.965	1.017	.181	24.9%
$50K to $100K	.943	.998	.208	28.8%
$100K to $150K	.965	1.002	.185	25.2%
$150K to $200K	.948	.999	.179	25.1%
$200K to $300K	.924	1.003	.182	25.0%
$300K to $500K	.889	1.000	.184	32.4%
$500K to $750K	.894	.990	.235	31.5%
$750K to $1,000K	.974	.999	.206	33.0%
Over $1,000K	.842	.734	.544	104.5%
Overall	.952	1.024	.200	30.6%

Subclass

Case Processing Summary

		Count	Percent
ABSTRLND	100.00	557	31.1%
	200.00	47	2.6%
	400.00	143	8.0%
	510.00	5	0.3%
	520.00	18	1.0%
	530.00	11	0.6%
	540.00	30	1.7%
	550.00	93	5.2%
	1112.00	826	46.1%
	1115.00	1	0.1%
	1120.00	2	0.1%
	1125.00	2	0.1%
	1135.00	3	0.2%
	1230.00	1	0.1%
	1622.50	1	0.1%
	2112.00	5	0.3%
	2120.00	2	0.1%
	2121.00	1	0.1%
	2125.00	1	0.1%
	2127.50	5	0.3%
	2130.00	20	1.1%
	2135.00	11	0.6%
	2140.00	1	0.1%
	3115.00	1	0.1%
	4134.50	1	0.1%
	5639.50	1	0.1%
	9129.00	2	0.1%
	9159.00	1	0.1%
Overall		1792	100.0%
Excluded		0	
Total		1792	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	CoV Median Centered
100.00	.965	1.085	.205	34.8%
200.00	.999	1.012	.119	17.7%
400.00	.957	1.107	.201	26.6%
510.00	1.000	.991	.109	18.2%
520.00	.939	1.036	.191	30.9%
530.00	.924	.974	.203	27.3%
540.00	.837	1.273	.195	28.2%
550.00	.892	1.053	.157	22.3%
1112.00	.935	1.043	.197	26.3%
1115.00	1.632	1.000	.000	.
1120.00	.966	.928	.192	27.2%
1125.00	3.404	1.061	.072	10.1%
1135.00	1.024	1.125	.313	57.9%
1230.00	.842	1.000	.000	.
1622.50	1.293	1.000	.000	.

2112.00	1.058	.985	.067	10.5%
2120.00	.851	1.386	.372	52.6%
2121.00	1.000	1.000	.000	.
2125.00	1.000	1.000	.000	.
2127.50	.968	1.056	.111	16.5%
2130.00	1.024	1.097	.270	45.5%
2135.00	1.002	1.002	.108	15.6%
2140.00	1.000	1.000	.000	.
3115.00	.968	1.000	.000	.
4134.50	.022	1.000	.000	.
5639.50	.870	1.000	.000	.
9129.00	.856	.968	.168	23.8%
9159.00	.500	1.000	.000	.
Overall	.952	1.024	.200	30.6%