2019
WELD COUNTY
PROPERTY ASSESSMENT
STUDY

WILDROSE
APPRAISAL, INCORPORATED
Audit Division

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APPRAISAL, INCORPORATED
Audit Division

September 15, 2019

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

RE: Final Report for the 2019 Colorado Property Assessment Study

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2019 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

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 2019 and is pleased to report its findings for Weld County in the following report.

REGIONAL/HISTORICAL SKETCH OF WELD COUNTY

Regional Information

Weld 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.
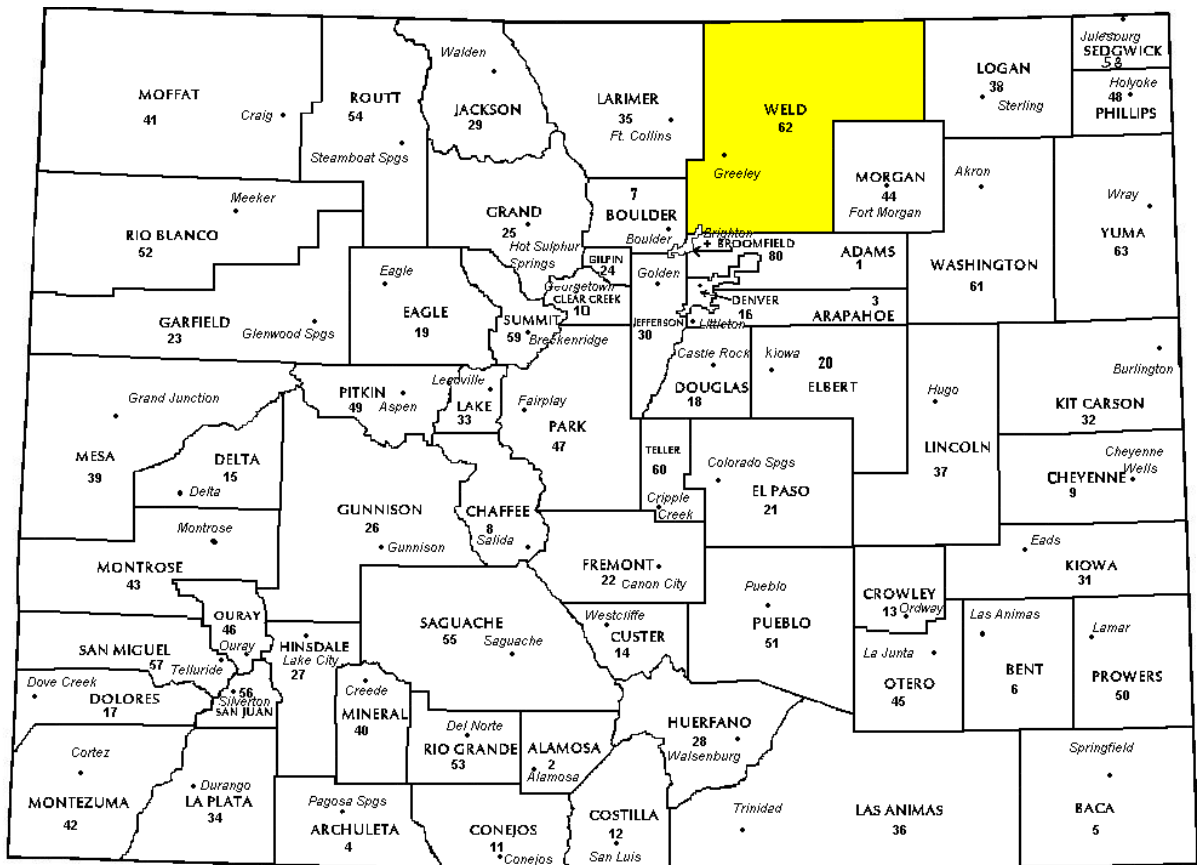
Historical Information

Weld County had an estimated population of approximately 294,932 people with 74.0 people per square mile, according to the U.S. Census Bureau's 2016 estimated census data. This represents a 16.7 percent change from April 1, 2010 to July 1, 2016.

Weld County covers an area of 4,004 square miles in north central Colorado. It is bordered on the north by Wyoming and Nebraska and on the south by the Denver metropolitan area. The third largest county in Colorado, Weld County has an area greater than that of Rhode Island, Delaware and the District of Columbia combined.

Major Stephen H. Long made an expedition to the area now known as Weld County in 1821. In 1835 a government expedition came through the general area; the next year a member of that party, Lt. Lancaster Lupton, returned to establish a trading post located just north of the present town of Fort Lupton. In 1837 Colonel Ceran St. Vrain established Fort St. Vrain; Fort Vasquez was built south of Platteville about 1840. The latter was rebuilt in the 1930's by the State Historical Society.

The county seat is Greeley which began as the Union Colony, which was founded in 1869 as an experimental utopian community of "high moral standards" by Nathan C. Meeker, a newspaper reporter from New York City. Meeker purchased a site at the confluence of the Cache la Poudre and South Platte Rivers (that included the area of Latham, an Overland Trail station), halfway between Cheyenne and Denver along the tracks of the Denver Pacific Railroad formerly known as the "Island Grove Ranch." The name Union Colony was later changed to Greeley in honor of Horace Greeley, who was Meeker's editor at the New York Tribune, and popularized the phrase "Go West, young man."

Weld County's cultural assets include Centennial Village, an authentic recreation of pioneer life on the Colorado plains. The Meeker Museum in Greeley is a national historic site. Fort Vasquez in southern Weld County has an exciting history as an early Colorado trading post. The Greeley Philharmonic Orchestra is one of the oldest symphony orchestra west of the Mississippi. The University of Northern Colorado's Little Theatre of the Rockies is one of America's premier college dramatic organizations.
(www.co.weld.co.us, www.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, 2017 through June 30, 2018. Property classes with less than thirty sales had the sales period extended in six month increments up to an additional forty-two months. If this extended sales period did not produce the minimum thirty qualified sales, the Audit performed supplemental appraisals to reach the minimum.

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

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

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

Conclusions

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

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

The results for Weld County are:

Weld County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	291	1.000	1.024	6.6	Compliant
Condominium	N/A	N/A	N/A	N/A	N/A
Single Family	10,943	0.972	1.006	5.7	Compliant
Vacant Land	356	0.988	1.016	12.7	Compliant

After applying the above described methodologies, it is concluded from the sales ratios that Weld 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 Weld County has complied with the statutory requirements to analyze the effects of time on value in their county. Weld County has also satisfactorily applied the results of their time trending analysis to arrive at the time adjusted sales price (TASP).

Recommendations

None

Methodology

Weld 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 Weld County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

None

AGRICULTURAL LAND STUDY

Acres By Subclass	Value By Subclass

Acres By Subclass

- Waste 4.23%
- Sprinkler 6.50%
- Flood 10.16%
- Dry Farm 28.77%
- Meadow Hay 0.63%
- Grazing 49.71%
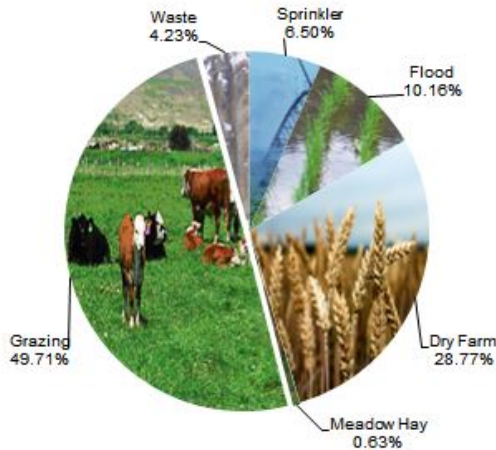
Value By Subclass
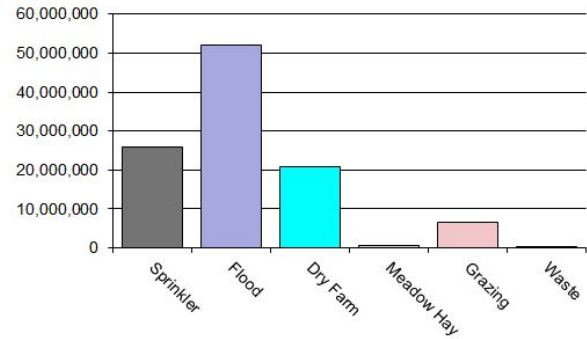
Agricultural Land

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:

Weld County Agricultural Land Ratio Grid						
Abstract Code	Land Class	Number Of Acres	County Value Per Acre	County Assessed Total Value	WRA Total Value	Ratio
4107	Sprinkler	126,457	204.68	25,883,669	25,590,164	1.01
4117	Flood	197,686	262.74	51,939,915	51,996,530	1.00
4127	Dry Farm	559,765	36.97	20,695,400	20,470,463	1.01
4137	Meadow Hay	12,167	45.50	553,654	553,654	1.00
4147	Grazing	967,149	6.95	6,723,365	6,723,365	1.00
4167	Waste	82,397	2.39	196,583	196,583	1.00
Total/Avg		**1,945,621**	**54.48**	**105,992,587**	**105,530,759**	**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

Weld 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

Weld 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

Weld 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
- 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

Weld 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.

WRA reviewed the sales verification procedures in 2019 for Weld County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 60 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.

Weld County did not qualify for in-depth subclass analysis.

Conclusions

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

Weld County has submitted a written narrative describing the economic areas that make up the county's market areas. Weld 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 Weld 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 2019 in Weld 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.

Conclusions

Weld 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.

Weld 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

Weld 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

Weld 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.

Weld 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
- MLS Listing and/or Sold Books
- Chamber of Commerce/Economic Development Contacts
- Local Telephone Directories, Newspapers or Other Local Publications
- Personal Observation, Physical Canvassing or Word of Mouth
- Questionnaires, Letters and/or Phone Calls to Buyer, Seller and/or Realtor

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

Weld County submitted their personal property written audit plan and was current for the 2019 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:

- Businesses in a selected area
- Accounts with obvious discrepancies
- New businesses filing for the first time
- Accounts with greater than 10% change
- Incomplete or inconsistent declarations
- Accounts with omitted property
- Same business type or use

- 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

Weld 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

Weld 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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STATISTICAL APPENDIX

STATISTICAL COMPLIANCE REPORT
FOR WELD COUNTY
2019

I. OVERVIEW

Weld County is an urban county located along Colorado's Front Range. The county has a total of 137,118 real property parcels, according to data submitted by the county assessor's office in 2019. The following provides a breakdown of property classes for this county:
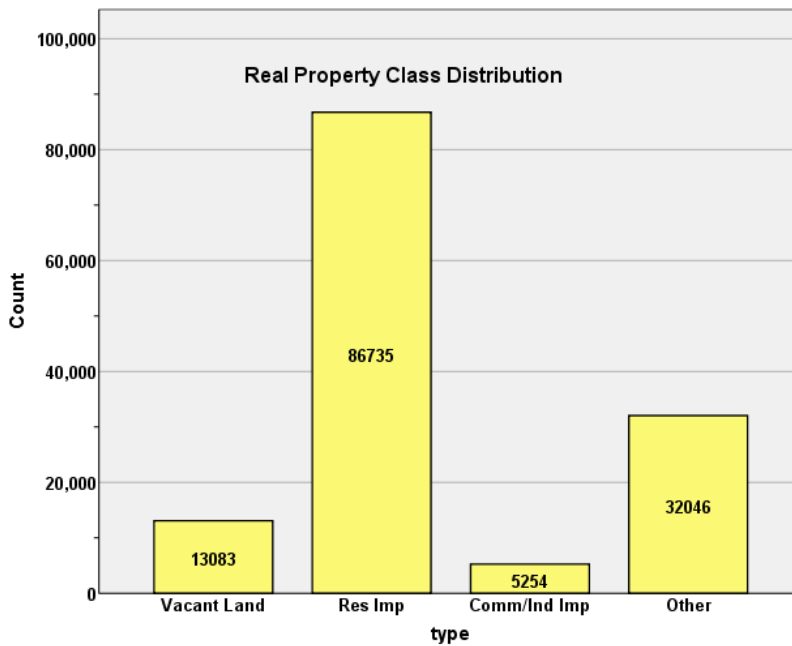
The vacant land class of properties was dominated by residential land. Residential lots (coded 100 and 1112) accounted for 82.1% of all vacant land parcels.

For residential improved properties, single family properties accounted for 92.7% 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.

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:

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

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

II. DATA FILES

The following sales analyses were based on the requirements of the 2019 Colorado Property Assessment Study. Information was provided by the Weld Assessor's Office in May 2019. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 10,943 qualified residential sales that occurred in the 18-month sale period ending June 30, 2018. The sales ratio analysis results were as follows:

Median	0.972
Price Related Differential	1.006
Coefficient of Dispersion	5.7

We next stratified the sale ratio analysis by economic area 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	.00	1032	9.5%
	2.00	3455	31.7%
	3.00	2708	24.8%
	4.00	779	7.1%
	5.00	136	1.2%
	6.00	1778	16.3%
	7.00	47	0.4%
	8.00	55	0.5%
	9.00	372	3.4%
	99.00	544	5.0%
Overall		10906	100.0%
Excluded		0	
Total		10906	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
.00	.974	1.001	.048
2.00	.973	1.005	.050
3.00	.969	1.004	.051
4.00	.979	1.005	.053
5.00	.964	1.013	.107
6.00	.971	1.011	.083
7.00	.970	1.001	.123
8.00	.952	1.012	.085
9.00	.975	1.007	.060
99.00	.968	.999	.042
Overall	.972	1.006	.057

NOTE: Econ Area 99 = Condominiums

Neighborhoods with at least 20 sales
Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
71	.976	1.001	.040
72	.968	1.001	.031
75	.989	.998	.113
77	.972	1.004	.056
78	.979	1.000	.029
79	.986	1.004	.040
81	.970	1.000	.034
83	.974	1.000	.037
99	.968	.999	.042
171	.966	1.002	.049
173	.991	1.004	.062
174	.980	1.001	.039
177	.967	1.004	.072
261	.970	.989	.112
2001	.984	1.003	.073
2002	.973	1.002	.037
2003	.968	1.008	.080
2005	.974	1.001	.050
2006	.969	1.003	.037
2007	.963	1.002	.074
2011	.978	1.016	.072
2013	.973	1.005	.047
2016	.979	1.002	.037
2018	.970	1.010	.061
2019	.973	1.008	.049
2020	.982	1.003	.029
2060	.975	1.006	.064
2061	.970	1.001	.042
2100	.965	1.003	.048
2101	.984	1.003	.048
2102	.961	1.003	.051
2103	.965	1.000	.041
2104	.965	1.014	.086
2105	.964	1.005	.068

2106	.968	1.002	.039
2107	.992	1.003	.044
2108	.964	1.002	.041
2110	.973	1.005	.050
2111	.958	1.002	.053
2112	.967	1.004	.063
2115	.972	1.004	.036
2117	.966	1.001	.034
2118	.974	1.000	.032
2120	.978	1.007	.051
2121	.958	1.007	.069
2124	.980	1.001	.034
2125	.967	1.002	.042
2151	.969	1.003	.043
2152	.981	1.000	.018
2201	.973	1.005	.088
2252	.977	1.006	.076
2657	.976	1.002	.030
3000	.977	1.003	.046
3001	.981	1.008	.066
3003	.967	.999	.037
3004	.977	1.001	.029
3008	.965	1.009	.055
3009	.968	1.003	.101
3010	.968	1.000	.038
3012	.972	1.001	.040
3013	.971	1.008	.064
3014	.969	1.000	.046
3016	.959	1.000	.043
3017	.951	1.011	.062
3021	.958	.998	.065
3024	.961	1.001	.030
3025	.979	1.001	.049
3026	.966	1.001	.048
3027	.963	1.002	.042
3030	.973	1.001	.040
3031	.958	.995	.077
3032	.977	1.001	.045
3033	.976	1.002	.047
3034	.969	1.004	.050
3037	.974	1.000	.039
3038	.961	1.000	.045
3042	.974	1.002	.052
3052	.952	1.006	.046
3055	.965	.998	.054
3057	.976	1.000	.022
3058	.965	1.006	.047
3122	.965	1.000	.032
3664	.952	1.002	.034
4000	.978	1.000	.026
4002	.975	1.001	.030
4004	.984	1.000	.033
4102	.975	1.000	.042
4103	.972	1.003	.055
4104	.993	1.001	.057
4105	.981	1.025	.131
4107	.981	1.006	.079

4121	.971	.996	.110
4123	.973	1.009	.049
5001	.975	1.011	.095
5007	.993	1.029	.200
5009	.961	1.006	.089
6003	.969	1.011	.096
6021	.966	1.001	.059
6023	.976	1.015	.099
6025	.966	1.014	.100
6027	.971	1.015	.068
6029	.976	1.005	.069
6030	.970	1.003	.080
6031	.966	1.002	.050
6032	.963	1.027	.090
6033	1.008	1.030	.135
6034	.971	1.006	.083
6035	.968	1.005	.059
6037	.969	1.015	.122
6038	.974	1.002	.078
6045	.952	1.070	.130
6050	.968	1.018	.086
6051	.984	1.002	.028
6055	.953	1.035	.105
6062	.974	1.002	.050
6207	.971	.989	.137
7004	.995	.997	.161
9007	.976	1.008	.052
9008	.978	1.001	.047
9009	.968	1.027	.112
9010	.971	1.005	.049
9014	.983	1.004	.036
9046	.954	.998	.073
Overall	.972	1.006	.055

NOTE: NBHD 99 = Condominiums

The above ratio statistics were in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall residential sales. The following graphs describe further the sales ratio distribution for these properties:
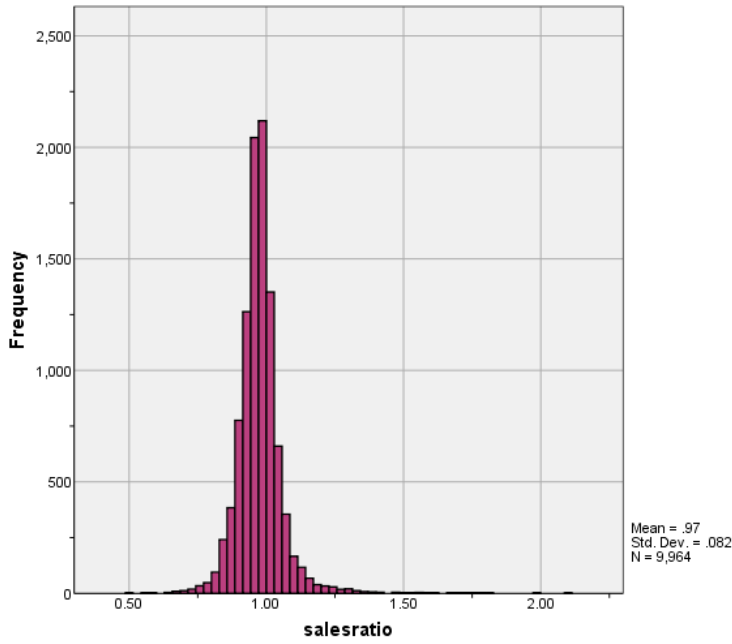
NOTE: Sales over $2,000,000 excluded for graphic clarity

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 18-month sale period for any residual market trending and broken down by economic area, as follows:

Coefficients[a]

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
.00	1	(Constant)	.982	.004		254.830	.000
		SalePeriod	-.001	.000	-.049	-1.505	.133
2.00	1	(Constant)	.969	.002		453.507	.000
		SalePeriod	.000	.000	.015	.829	.407
3.00	1	(Constant)	.968	.002		389.913	.000
		SalePeriod	.000	.000	.009	.469	.639
4.00	1	(Constant)	.985	.006		165.408	.000
		SalePeriod	-.001	.001	-.037	-.965	.335
5.00	1	(Constant)	.969	.031		31.566	.000
		SalePeriod	.004	.003	.105	1.075	.285
6.00	1	(Constant)	.995	.006		180.679	.000
		SalePeriod	-.001	.001	-.034	-1.409	.159
7.00	1	(Constant)	.918	.077		11.947	.000
		SalePeriod	.009	.007	.263	1.390	.176
9.00	1	(Constant)	.993	.009		107.406	.000
		SalePeriod	-.002	.001	-.105	-1.825	.069
99.00	1	(Constant)	.973	.005		184.800	.000
		SalePeriod	-.001	.001	-.041	-.951	.342

a. Dependent Variable: salesratio

There was no residual market trending present in the sale ratio data for any of the economic areas; 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 2019 between each group. The data was analyzed both as a whole and broken down by economic area, as follows:

Report
VALSF

sold	N	Median	Mean
UNSOLD	75125	$199	$197
SOLD	10906	$202	$204

Report
VALSF

ECONAREA	sold	N	Median	Mean
.00	UNSOLD	6034	$210	$208
	SOLD	1032	$210	$209
2.00	UNSOLD	21086	$204	$203
	SOLD	3455	$205	$205
3.00	UNSOLD	15991	$197	$201
	SOLD	2708	$198	$205

4.00	UNSOLD	6110	$185	$186
	SOLD	779	$188	$193
5.00	UNSOLD	1259	$163	$167
	SOLD	136	$200	$195
6.00	UNSOLD	16917	$207	$200
	SOLD	1778	$212	$208
7.00	UNSOLD	791	$94	$105
	SOLD	47	$131	$130
8.00	UNSOLD	705	$152	$151
	SOLD	55	$168	$166
9.00	UNSOLD	2494	$206	$197
	SOLD	372	$214	$205
99.00	UNSOLD	3466	$174	$165
	SOLD	544	$176	$180

We also stratified this analysis by residential neighborhoods with at least 20 sales, as follows:

Report
VALSF

NBHD	sold	N	Median	Mean
71	UNSOLD	585	$226	$223
	SOLD	114	$218	$217
72	UNSOLD	321	$208	$208
	SOLD	56	$206	$207
75	UNSOLD	400	$257	$250
	SOLD	34	$250	$256
77	UNSOLD	323	$234	$228
	SOLD	42	$234	$224
78	UNSOLD	240	$200	$203
	SOLD	40	$196	$197
79	UNSOLD	328	$168	$176
	SOLD	45	$173	$179
81	UNSOLD	331	$207	$204
	SOLD	51	$204	$202
83	UNSOLD	629	$164	$170
	SOLD	97	$170	$172
171	UNSOLD	822	$228	$224
	SOLD	110	$235	$228
173	UNSOLD	192	$231	$228
	SOLD	26	$232	$229
174	UNSOLD	574	$202	$199
	SOLD	279	$210	$205
177	UNSOLD	260	$233	$225
	SOLD	31	$251	$239
261	UNSOLD	166	$207	$204
	SOLD	24	$254	$250
2001	UNSOLD	273	$248	$241
	SOLD	23	$271	$265
2002	UNSOLD	615	$225	$223
	SOLD	38	$214	$216
2003	UNSOLD	412	$248	$244
	SOLD	35	$227	$246
2005	UNSOLD	823	$243	$236
	SOLD	85	$246	$239
2006	UNSOLD	362	$210	$213
	SOLD	50	$211	$214

2007	UNSOLD	648	$230	$229
	SOLD	56	$235	$238
2011	UNSOLD	483	$205	$214
	SOLD	143	$199	$209
2013	UNSOLD	616	$200	$205
	SOLD	190	$214	$211
2016	UNSOLD	360	$170	$170
	SOLD	163	$172	$172
2018	UNSOLD	29	$204	$204
	SOLD	134	$192	$192
2019	UNSOLD	131	$220	$214
	SOLD	199	$207	$213
2020	UNSOLD	189	$186	$186
	SOLD	221	$184	$186
2060	UNSOLD	502	$223	$215
	SOLD	66	$228	$223
2061	UNSOLD	293	$215	$206
	SOLD	96	$218	$212
2100	UNSOLD	699	$193	$192
	SOLD	67	$198	$201
2101	UNSOLD	383	$220	$217
	SOLD	46	$224	$219
2102	UNSOLD	527	$211	$209
	SOLD	85	$211	$206
2103	UNSOLD	504	$177	$182
	SOLD	61	$183	$185
2104	UNSOLD	217	$180	$179
	SOLD	23	$189	$190
2105	UNSOLD	500	$193	$196
	SOLD	51	$205	$210
2106	UNSOLD	203	$198	$201
	SOLD	74	$210	$207
2107	UNSOLD	667	$199	$200
	SOLD	134	$197	$200
2108	UNSOLD	308	$193	$199
	SOLD	38	$208	$201
2110	UNSOLD	1001	$210	$210
	SOLD	116	$213	$211
2111	UNSOLD	2331	$205	$205
	SOLD	212	$215	$210
2112	UNSOLD	908	$180	$182
	SOLD	78	$179	$184
2115	UNSOLD	211	$214	$214
	SOLD	31	$216	$213
2117	UNSOLD	138	$178	$181
	SOLD	48	$189	$190
2118	UNSOLD	457	$213	$212
	SOLD	69	$211	$207
2120	UNSOLD	488	$200	$198
	SOLD	93	$206	$204
2121	UNSOLD	288	$229	$230
	SOLD	52	$237	$237
2124	UNSOLD	100	$196	$198
	SOLD	43	$187	$195
2125	UNSOLD	204	$209	$206
	SOLD	31	$218	$211
2151	UNSOLD	587	$220	$216

	SOLD	89	$221	$219
2152	UNSOLD	146	$222	$204
	SOLD	112	$184	$198
2201	UNSOLD	205	$209	$205
	SOLD	21	$252	$240
2252	UNSOLD	311	$246	$244
	SOLD	26	$259	$253
2657	UNSOLD	160	$210	$212
	SOLD	54	$212	$214
3000	UNSOLD	246	$179	$183
	SOLD	98	$201	$191
3001	UNSOLD	245	$265	$249
	SOLD	29	$249	$248
3003	UNSOLD	284	$194	$193
	SOLD	96	$195	$196
3004	UNSOLD	65	$189	$190
	SOLD	35	$186	$186
3008	UNSOLD	398	$184	$190
	SOLD	256	$184	$190
3009	UNSOLD	409	$277	$281
	SOLD	30	$288	$292
3010	UNSOLD	220	$188	$191
	SOLD	27	$198	$197
3012	UNSOLD	583	$195	$202
	SOLD	56	$198	$201
3013	UNSOLD	1273	$195	$203
	SOLD	175	$203	$210
3014	UNSOLD	330	$163	$175
	SOLD	26	$169	$177
3016	UNSOLD	100	$273	$260
	SOLD	24	$287	$258
3017	UNSOLD	227	$196	$193
	SOLD	132	$197	$196
3021	UNSOLD	262	$239	$240
	SOLD	21	$223	$238
3024	UNSOLD	257	$189	$195
	SOLD	47	$184	$192
3025	UNSOLD	551	$233	$230
	SOLD	189	$207	$221
3026	UNSOLD	1342	$200	$204
	SOLD	163	$200	$203
3027	UNSOLD	325	$209	$209
	SOLD	60	$215	$213
3030	UNSOLD	432	$180	$187
	SOLD	160	$182	$190
3031	UNSOLD	583	$250	$244
	SOLD	54	$255	$248
3032	UNSOLD	312	$204	$212
	SOLD	43	$204	$214
3033	UNSOLD	993	$182	$188
	SOLD	194	$189	$194
3034	UNSOLD	92	$197	$204
	SOLD	84	$198	$213
3037	UNSOLD	635	$188	$193
	SOLD	128	$200	$203
3038	UNSOLD	956	$193	$195
	SOLD	117	$189	$194

3042	UNSOLD	336	$201	$216
	SOLD	28	$206	$225
3052	UNSOLD	167	$229	$221
	SOLD	20	$228	$227
3055	UNSOLD	337	$196	$203
	SOLD	62	$190	$198
3057	UNSOLD	204	$197	$206
	SOLD	33	$197	$206
3058	UNSOLD	186	$182	$189
	SOLD	30	$189	$196
3122	UNSOLD	284	$205	$211
	SOLD	68	$211	$215
3664	UNSOLD	141	$222	$222
	SOLD	31	$218	$222
4000	UNSOLD	370	$181	$187
	SOLD	166	$172	$169
4002	UNSOLD	413	$189	$191
	SOLD	88	$189	$191
4004	UNSOLD	484	$170	$180
	SOLD	177	$181	$183
4102	UNSOLD	177	$187	$189
	SOLD	48	$176	$179
4103	UNSOLD	603	$234	$235
	SOLD	48	$241	$241
4104	UNSOLD	84	$226	$221
	SOLD	42	$227	$225
4105	UNSOLD	781	$223	$216
	SOLD	55	$232	$225
4107	UNSOLD	310	$199	$196
	SOLD	22	$208	$207
4121	UNSOLD	347	$213	$209
	SOLD	22	$221	$211
4123	UNSOLD	286	$211	$208
	SOLD	27	$207	$206
5001	UNSOLD	387	$169	$176
	SOLD	55	$206	$198
5007	UNSOLD	254	$185	$186
	SOLD	21	$190	$218
5009	UNSOLD	90	$212	$216
	SOLD	29	$219	$219
6003	UNSOLD	367	$221	$214
	SOLD	41	$219	$216
6021	UNSOLD	727	$225	$220
	SOLD	71	$225	$219
6023	UNSOLD	303	$185	$187
	SOLD	29	$189	$192
6025	UNSOLD	814	$201	$202
	SOLD	77	$198	$206
6027	UNSOLD	334	$225	$221
	SOLD	46	$226	$223
6029	UNSOLD	943	$230	$224
	SOLD	119	$240	$234
6030	UNSOLD	768	$195	$197
	SOLD	78	$209	$208
6031	UNSOLD	1720	$208	$203
	SOLD	150	$204	$203
6032	UNSOLD	320	$210	$207

	SOLD	25	$221	$217
6033	UNSOLD	735	$189	$186
	SOLD	72	$198	$191
6034	UNSOLD	1431	$223	$217
	SOLD	158	$228	$224
6035	UNSOLD	1285	$213	$206
	SOLD	142	$197	$201
6037	UNSOLD	1307	$192	$190
	SOLD	137	$194	$195
6038	UNSOLD	1250	$215	$203
	SOLD	125	$229	$223
6045	UNSOLD	767	$217	$212
	SOLD	81	$226	$218
6050	UNSOLD	587	$219	$209
	SOLD	41	$219	$216
6051	UNSOLD	142	$202	$204
	SOLD	52	$199	$198
6055	UNSOLD	329	$207	$203
	SOLD	24	$218	$211
6062	UNSOLD	836	$224	$220
	SOLD	172	$223	$222
6207	UNSOLD	615	$139	$149
	SOLD	36	$132	$143
7004	UNSOLD	452	$117	$124
	SOLD	28	$140	$137
9007	UNSOLD	297	$223	$222
	SOLD	27	$228	$229
9008	UNSOLD	177	$233	$226
	SOLD	36	$215	$211
9009	UNSOLD	396	$202	$200
	SOLD	37	$204	$200
9010	UNSOLD	539	$209	$206
	SOLD	87	$214	$209
9014	UNSOLD	47	$210	$195
	SOLD	81	$211	$199
9046	UNSOLD	284	$197	$196
	SOLD	30	$220	$202
9999	UNSOLD	3466	$174	$165
	SOLD	544	$177	$181

We also examined the overall median and mean change in actual value for taxable years 2018 and 2019 for residential sold and unsold properties, as follows:

Report
DIFF

sold	N	Median	Mean
UNSOLD	67,126	1.26	1.29
SOLD	9,896	1.27	1.28

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DIFF is the same across categories of sold.	Independent-Samples Mann-Whitney U Test	.527	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

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

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 291 qualified residential sales that occurred in the 18 month sale period ending June 30, 2018. The sales ratio analysis results were as follows:

Median	1.000
Price Related Differential	1.024
Coefficient of Dispersion	6.6

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

Mean = 1.02
Std. Dev. = .118
N = 291
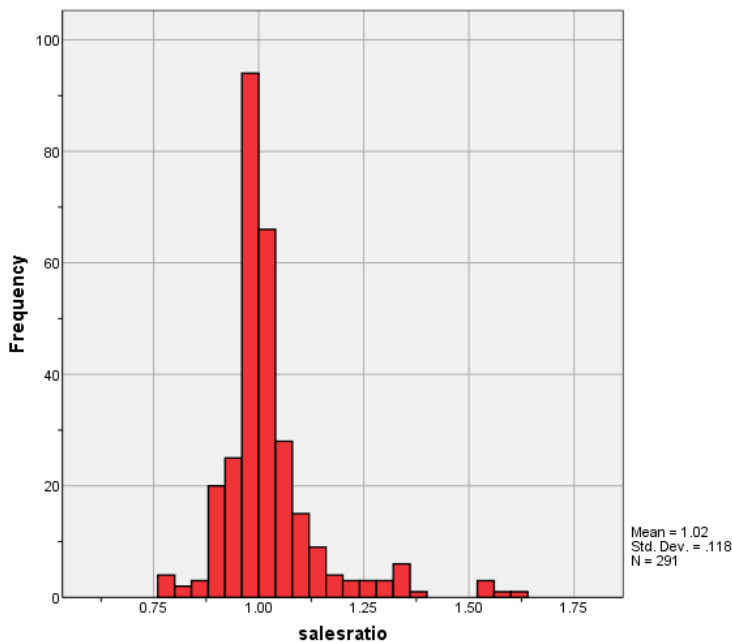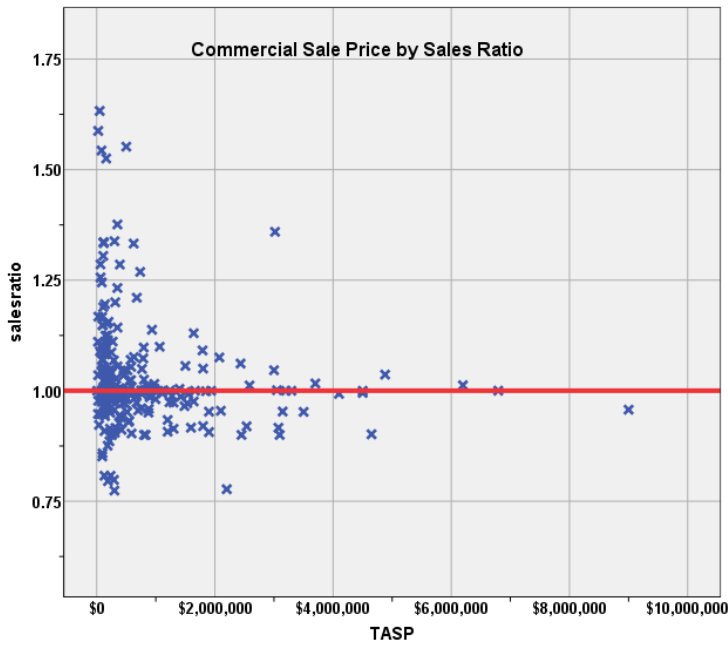
Commercial/Industrial Market Trend Analysis

The commercial/industrial sales were next analyzed, examining the sale ratios across the 18-month sale period with the following results:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.004	.013		76.929	.000
	SalePeriod	.003	.001	.108	1.848	.066

a. Dependent Variable: salesratio
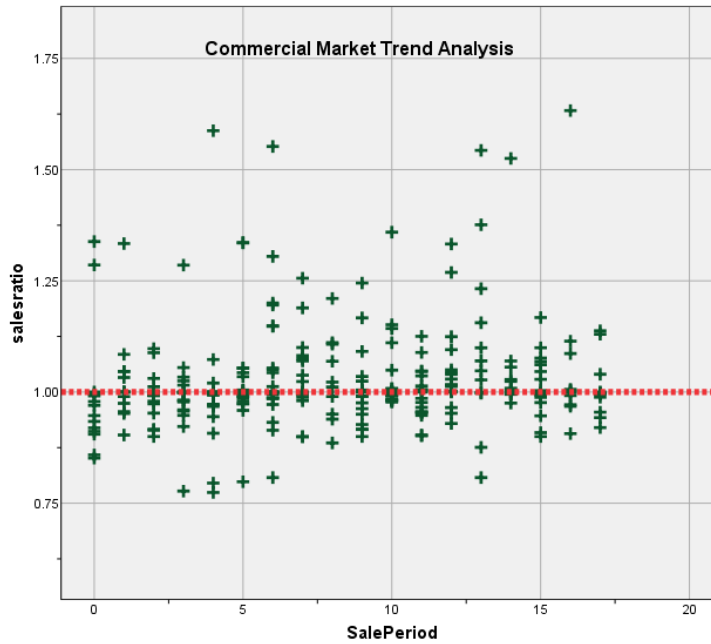
There was no residual market trending present in the commercial sale ratios. We concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

Sold/Unsold Analysis

We compared the median actual value per square foot for 2019 between sold and unsold groups to determine if sold and unsold properties were valued consistently. Based on the amount of subclasses for commercial and industrial properties, we chose only major subclasses with at least 10 sales for this analysis: i.e. those with improved abstract codes of 2212, 2220, 2230, 2235, 2245, and 3215. The following analysis was then performed:

Report
VALSF

ABSTRIMP	sold	N	Median	Mean
2212	UNSOLD	638	$70	$97
	SOLD	34	$105	$120
2220	UNSOLD	386	$98	$114
	SOLD	16	$120	$124
2230	UNSOLD	791	$78	$115
	SOLD	35	$126	$147
2235	UNSOLD	892	$43	$51
	SOLD	23	$69	$67
2245	UNSOLD	823	$87	$91
	SOLD	61	$89	$97
3215	UNSOLD	237	$55	$57
	SOLD	8	$80	$79

Given that there was a statistically significant difference using the non-parametric Mann Whitney U test, we next compared the percent change in actual value between taxable years 2018 and 2019 for sold and unsold commercial properties in Weld County, as follows:

Report

DIFF

ABSTRIMP	sold	N	Median	Mean
2212.00	UNSOLD	660	1.32	1.48
	SOLD	36	1.50	1.64
2215.00	UNSOLD	32	1.10	1.22
	SOLD	4	1.30	1.50
2220.00	UNSOLD	354	1.18	1.25
	SOLD	32	1.40	1.45
2221.00	UNSOLD	25	1.41	1.50
	SOLD	1	1.49	1.49
2225.00	UNSOLD	49	1.14	2.10
	SOLD	2	1.79	1.79
2227.50	UNSOLD	40	1.18	1.30
	SOLD	1	1.55	1.55
2230.00	UNSOLD	740	1.19	1.25
	SOLD	40	1.57	1.63
2232.50	UNSOLD	40	1.39	1.90
	SOLD	2	1.07	1.07
3215.00	UNSOLD	218	1.26	1.63
	SOLD	8	1.41	1.51

Given that both of these comparisons indicated a statistical difference between sold and unsold commercial/industrial properties, we next developed an econometric model that used the assessor's actual value as the predicted variable. A total of 3,621 commercial/industrial properties were analyzed. Commercial/industrial property subclasses included the following:

ABSTRIMP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2212	642	17.7	17.7	17.7
	2220	361	10.0	10.0	27.7
	2230	769	21.2	21.2	48.9
	2235	764	21.1	21.1	70.0
	2245	856	23.6	23.6	93.7
	3215	229	6.3	6.3	100.0
	Total	3621	100.0	100.0	

We developed a stepwise regression model to test whether sold and unsold properties were valued differently by the assessor.

To do this, we included a binary variable for sold/unsold status. For the model, sold properties were coded "1" and unsold properties were coded "0." Other variables tested included improved area, age, economic area, and commercial/industrial subclass. The dependent variable is the 2019 current value. The stepwise regression analysis adds variables to the model based on their contributory strength, as measured by their t or p values (depending on the test). Due to the number of sales, we used a p value

of 0.02 as the tolerance threshold. At each step, a variable is added, and variables already in the model are re-evaluated to determine if they should remain in the model. After it is determined that adding additional variables will not improve the model's predicative or explanatory power, the process stops. Variables not included at this point are determined to not be significant. In this analysis, our primary focus was the sold/unsold variable previously described.

After 5 iterations, the following results were generated by the model:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685[a]	.469	.469	2257010.897
2	.691[b]	.478	.478	2238687.542
3	.698[c]	.487	.486	2220314.914
4	.699[d]	.488	.488	2217592.730
5	.699[e]	.489	.488	2216235.603
6	.699[f]	.489	.489	2215321.114
7	.700[g]	.490	.489	2214466.202
8	.700[h]	.490	.489	2214215.863

a. Predictors: (Constant), LIVEAREA
b. Predictors: (Constant), LIVEAREA, EA2
c. Predictors: (Constant), LIVEAREA, EA2, EA3
d. Predictors: (Constant), LIVEAREA, EA2, EA3, v2235
e. Predictors: (Constant), LIVEAREA, EA2, EA3, v2235, v2215
f. Predictors: (Constant), LIVEAREA, EA2, EA3, v2235, v2215, age
g. Predictors: (Constant), LIVEAREA, EA2, EA3, v2235, v2215, age, v2212
h. Predictors: (Constant), LIVEAREA, EA2, EA3, v2235, v2215, age, v2212, EA6

The following coefficients were included in the model at Step 8:

8						
	(Constant)	157813.872	52257.774		3.020	.003
	LIVEAREA	51.120	.792	.668	64.543	.000
	EA2	999854.431	102732.607	.106	9.733	.000
	EA3	927356.789	103951.966	.097	8.921	.000
	v2235	-266505.797	83349.905	-.034	-3.197	.001
	v2215	975520.257	372146.798	.027	2.621	.009
	age	-944.006	391.846	-.025	-2.409	.016
	v2212	177442.659	94331.478	.020	1.881	.060
	EA6	112157.791	77447.999	.016	1.448	.148

The model at Step 8 did not include the Sold/Unsold variable, indicating that it did not make a significant difference in the model whether the properties were sold or unsold. Based on this finding, we concluded that the assessor valued sold and unsold commercial properties consistently in 2019.

V. VACANT LAND SALE RESULTS

There were 356 qualified residential sales that occurred in the 18-month sale period ending June 30, 2018. The sales ratio analysis results were as follows:

Median	0.988
Price Related Differential	1.016
Coefficient of Dispersion	12.7

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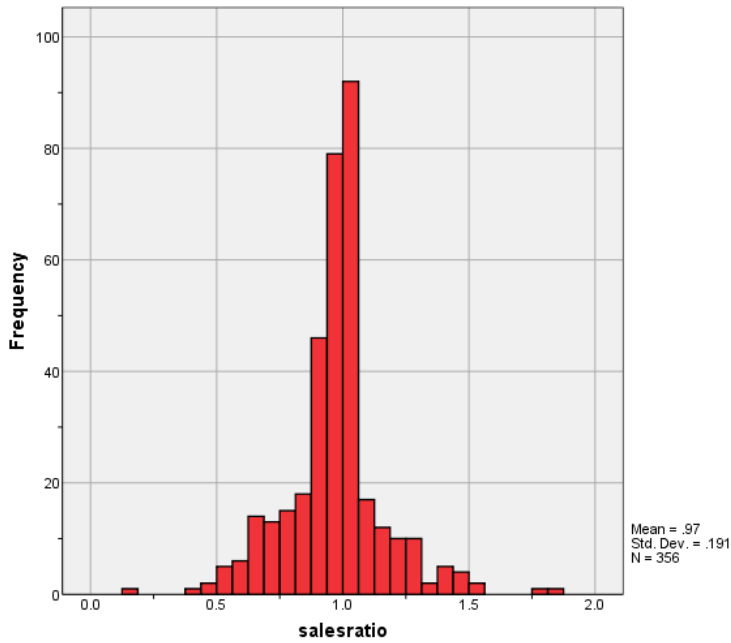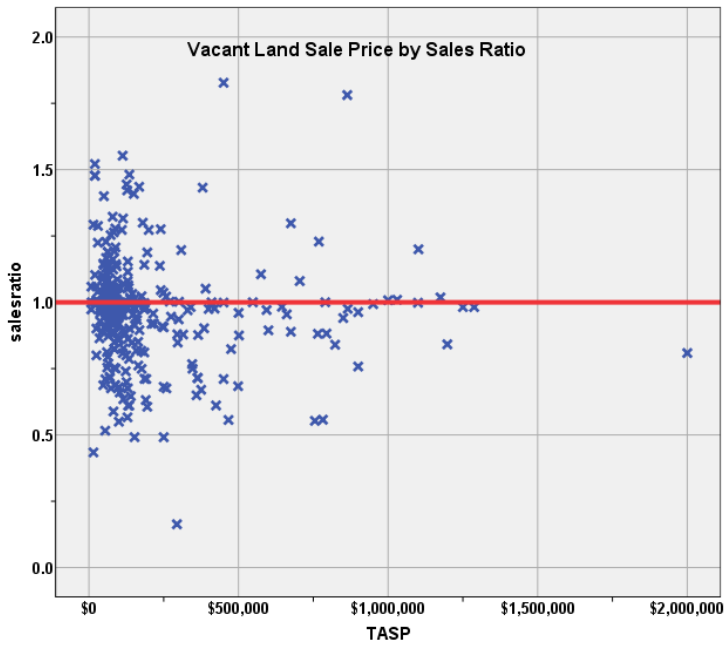
The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits. No sales were trimmed.

Vacant Land Market Trend Analysis

We next analyzed the vacant land dataset using the 18-month sale period, with the following results:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.976	.017		56.753	.000
	SalePeriod	-.001	.002	-.028	-.520	.604

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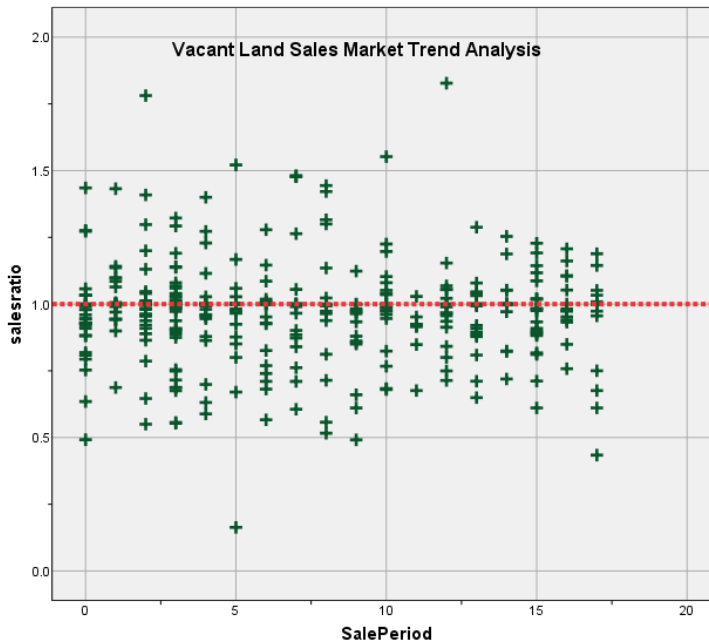
The above analysis indicated that no significant market trending was present in the vacant land sale data. We concluded that the assessor has adequately dealt with market trending for vacant land properties.

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 2019 between each group. We stratified the vacant land properties by subdivision and found overall consistency. The following results present the overall comparison results:

Report

DIFF

sold	N	Median	Mean
UNSOLD	5462	1.11	1.10
SOLD	291	1.18	1.20

We also compared sold and unsold changes in value by subdivision with at least 6 sales, as follows:

Report

DIFF

SUBNO	sold	N	Median	Mean
2528	UNSOLD	29	.92	.91
	SOLD	15	.95	.93
2925	UNSOLD	37	1.11	1.08
	SOLD	8	1.11	1.11
3062	UNSOLD	4	1.25	1.18
	SOLD	9	1.25	1.25
3372	UNSOLD	9	1.30	1.30
	SOLD	9	1.30	1.30
4396	UNSOLD	10	1.00	1.11

	SOLD	11	1.08	1.15
4584	UNSOLD	7	1.29	1.26
	SOLD	7	1.29	1.29
5192	UNSOLD	24	1.40	1.28
	SOLD	9	1.40	1.40
6460	UNSOLD	8	1.11	1.11
	SOLD	6	1.11	1.11
6659	UNSOLD	5	1.36	1.29
	SOLD	6	1.36	1.36
6663	UNSOLD	80	1.30	1.28
	SOLD	8	1.30	1.47
Total	UNSOLD	213	1.25	1.18
	SOLD	103	1.25	1.21
	Total	316	1.25	1.19

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

V. CONCLUSIONS

Based on this 2019 audit statistical analysis, residential, commercial/industrial and vacant land properties were found to be in compliance with state guidelines.

STATISTICAL ABSTRACT
Residential

Ratio Statistics for CURRTOT / TASP

EA	Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median		Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
		Lower Bound	Upper Bound		Lower Bound	Upper Bound			Lower Bound	Upper Bound			
.00	.977	.973	.981	.974	.970	.979	95.6%	.976	.971	.981	1.001	.046	6.6%
2.00	.971	.968	.973	.973	.971	.975	95.4%	.966	.963	.969	1.005	.048	6.9%
3.00	.969	.966	.971	.969	.966	.971	95.2%	.965	.962	.967	1.004	.049	6.7%
4.00	.980	.974	.986	.979	.974	.982	95.2%	.977	.972	.982	1.003	.047	8.3%
5.00	.996	.962	1.031	.973	.927	.993	96.9%	.980	.952	1.009	1.016	.115	17.7%
6.00	.988	.982	.994	.971	.966	.975	95.2%	.976	.968	.984	1.012	.081	12.2%
7.00	1.013	.938	1.088	.995	.884	1.128	96.4%	1.016	.924	1.108	.997	.161	19.0%
9.00	.979	.969	.989	.976	.968	.983	95.8%	.971	.963	.979	1.008	.056	9.3%
99.00	.968	.963	.974	.968	.965	.972	95.6%	.969	.965	.974	.999	.042	6.6%

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		Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound			Lower Bound	Upper Bound			
1.025	1.011	1.038	1.000	.997	1.000	95.4%	1.001	.985	1.017	1.024	.066	11.5%

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.

Vacant Land

Ratio Statistics for CURRLND / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median		Actual Coverage	Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound			Lower Bound	Upper Bound			
.969	.949	.989	.988	.973	.998	95.0%	.954	.917	.990	1.016	.127	19.7%

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.

Residential Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	7	0.1%
	$25K to $50K	2	0.0%
	$50K to $100K	10	0.1%
	$100K to $150K	67	0.7%
	$150K to $200K	300	3.0%
	$200K to $300K	2441	24.5%
	$300K to $500K	6185	62.1%
	$500K to $750K	850	8.5%
	$750K to $1,000K	80	0.8%
	Over $1,000K	22	0.2%
Overall		9964	100.0%
Excluded		0	
Total		9964	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	.836	1.023	.180	24.5%
$25K to $50K	1.382	.959	.216	30.6%
$50K to $100K	1.064	1.003	.165	24.7%
$100K to $150K	1.155	1.004	.200	26.1%
$150K to $200K	1.019	1.002	.104	14.3%
$200K to $300K	.971	1.001	.061	8.9%
$300K to $500K	.974	1.000	.043	5.9%
$500K to $750K	.942	1.001	.070	9.5%
$750K to $1,000K	.942	1.001	.085	10.8%
Over $1,000K	.967	1.002	.115	14.8%
Overall	.972	1.006	.055	8.4%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1212.00	9256	92.9%
	1213.50	2	0.0%
	1214.00	2	0.0%
	1215.00	110	1.1%
	1216.00	1	0.0%
	1217.50	2	0.0%
	1220.00	36	0.4%
	1223.75	1	0.0%
	1224.44	1	0.0%
	1225.00	7	0.1%
	1230.00	544	5.5%
	9250.00	1	0.0%

	9270.00	1	0.0%
Overall		9964	100.0%
Excluded		0	
Total		9964	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	.972	1.006	.055	8.4%
1213.50	1.105	1.025	.213	30.1%
1214.00	1.021	.997	.029	4.0%
1215.00	.958	1.017	.109	16.3%
1216.00	.798	1.000	.000	.
1217.50	.981	1.000	.023	3.3%
1220.00	.992	.994	.099	14.1%
1223.75	1.037	1.000	.000	.
1224.44	.904	1.000	.000	.
1225.00	1.002	1.016	.052	7.5%
1230.00	.968	.999	.042	6.6%
9250.00	.947	1.000	.000	.
9270.00	.595	1.000	.000	.
Overall	.972	1.006	.055	8.4%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	223	2.2%
	75 to 100	227	2.3%
	50 to 75	603	6.1%
	25 to 50	986	9.9%
	5 to 25	3900	39.1%
	5 or Newer	4025	40.4%
Overall		9964	100.0%
Excluded		0	
Total		9964	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.977	1.029	.128	18.4%
75 to 100	.959	1.023	.119	17.6%
50 to 75	.965	1.008	.090	13.0%
25 to 50	.966	1.003	.070	10.8%
5 to 25	.968	1.002	.049	7.4%
5 or Newer	.979	1.007	.043	6.0%
Overall	.972	1.006	.055	8.4%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	12	0.1%
	500 to 1,000 sf	697	7.0%
	1,000 to 1,500 sf	3122	31.3%
	1,500 to 2,000 sf	3209	32.2%
	2,000 to 3,000 sf	2433	24.4%
	3,000 sf or Higher	491	4.9%
Overall		9964	100.0%
Excluded		0	
Total		9964	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.854	.935	.185	23.3%
500 to 1,000 sf	.952	1.016	.089	14.9%
1,000 to 1,500 sf	.971	1.005	.054	8.5%
1,500 to 2,000 sf	.973	1.005	.048	7.1%
2,000 to 3,000 sf	.979	1.005	.049	7.0%
3,000 sf or Higher	.967	1.010	.075	10.8%
Overall	.972	1.006	.055	8.4%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	1	92	0.9%
	2	2022	20.3%
	3	7302	73.3%
	4	493	4.9%
	5	52	0.5%
	6	3	0.0%
Overall		9964	100.0%
Excluded		0	
Total		9964	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1	.959	1.036	.147	21.6%
2	.967	1.008	.080	12.5%
3	.973	1.004	.046	6.5%
4	.978	1.008	.068	9.1%
5	.984	1.013	.087	13.7%
6	.984	.997	.058	8.8%
Overall	.972	1.006	.055	8.4%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION	1	6	0.1%
	2	23	0.2%
	3	9917	99.5%
	4	18	0.2%
Overall		9964	100.0%
Excluded		0	
Total		9964	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1	1.079	1.141	.277	38.2%
2	.843	1.032	.192	22.5%
3	.972	1.006	.054	8.3%
4	1.009	1.022	.075	10.7%
Overall	.972	1.006	.055	8.4%

Commercial Median Ratio Stratification

Sale Price
Case Processing Summary

		Count	Percent
SPRec	LT $25K	6	2.1%
	$25K to $50K	4	1.4%
	$50K to $100K	23	7.9%
	$100K to $150K	58	19.9%
	$150K to $200K	31	10.7%
	$200K to $300K	33	11.3%
	$300K to $500K	33	11.3%
	$500K to $750K	25	8.6%
	$750K to $1,000K	24	8.2%
	Over $1,000K	54	18.6%
Overall		291	100.0%
Excluded		0	
Total		291	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.018	.984	.132	25.7%
$25K to $50K	1.057	.988	.220	33.4%
$50K to $100K	1.001	1.007	.105	16.8%
$100K to $150K	1.000	1.001	.063	10.9%
$150K to $200K	1.002	1.001	.058	11.8%
$200K to $300K	.994	.998	.061	10.0%
$300K to $500K	.997	.998	.079	14.8%
$500K to $750K	1.000	.997	.062	10.6%
$750K to $1,000K	1.000	1.000	.032	5.2%
Over $1,000K	.994	1.000	.049	7.9%
Overall	1.000	1.024	.066	12.0%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	.00	1	0.3%
	1225.00	1	0.3%
	2212.00	36	12.4%
	2215.00	4	1.4%
	2220.00	32	11.0%
	2221.00	1	0.3%
	2223.50	2	0.7%
	2225.00	2	0.7%
	2227.50	1	0.3%
	2230.00	43	14.8%
	2232.50	2	0.7%
	2235.00	37	12.7%
	2245.00	112	38.5%
	2932.86	1	0.3%
	3212.00	2	0.7%
	3215.00	8	2.7%
	9249.00	2	0.7%
	9259.00	3	1.0%
	9279.00	1	0.3%
Overall		291	100.0%
Excluded		0	
Total		291	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.972	1.000	.000	.
1225.00	1.130	1.000	.000	.
2212.00	1.000	.999	.037	6.8%
2215.00	.999	1.017	.046	6.5%
2220.00	1.000	1.006	.053	12.4%
2221.00	.987	1.000	.000	.
2223.50	1.215	1.078	.102	14.4%
2225.00	.987	.994	.013	1.9%
2227.50	1.000	1.000	.000	.
2230.00	.995	1.019	.065	10.3%
2232.50	1.033	.982	.041	5.8%
2235.00	1.000	1.060	.089	16.4%
2245.00	1.000	1.014	.072	12.3%
2932.86	.993	1.000	.000	.
3212.00	1.256	1.151	.215	30.4%
3215.00	.996	.999	.026	4.0%
9249.00	.955	.999	.008	1.1%
9259.00	1.108	1.047	.045	7.2%
9279.00	.999	1.000	.000	.
Overall	1.000	1.024	.066	12.0%

Age

Case Processing Summary

		Count	Percent
AgeRec	0	1	0.3%
	Over 100	15	5.2%
	75 to 100	20	6.9%
	50 to 75	22	7.6%
	25 to 50	52	17.9%
	5 to 25	102	35.1%
	5 or Newer	79	27.1%
Overall		291	100.0%
Excluded		0	
Total		291	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.972	1.000	.000	.
Over 100	1.000	1.015	.064	10.6%
75 to 100	.995	1.002	.048	6.4%
50 to 75	1.000	1.009	.035	5.3%
25 to 50	1.000	1.032	.070	13.1%
5 to 25	1.000	1.031	.073	14.1%
5 or Newer	1.000	1.020	.069	11.4%
Overall	1.000	1.024	.066	12.0%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	0	1	0.3%
	LE 500 sf	12	4.1%
	500 to 1,000 sf	42	14.4%
	1,000 to 1,500 sf	44	15.1%
	1,500 to 2,000 sf	31	10.7%
	2,000 to 3,000 sf	31	10.7%
	3,000 sf or Higher	130	44.7%
Overall		291	100.0%
Excluded		0	
Total		291	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.972	1.000	.000	.
LE 500 sf	1.073	.936	.127	17.5%
500 to 1,000 sf	.997	1.000	.056	9.8%
1,000 to 1,500 sf	.999	1.033	.077	16.3%
1,500 to 2,000 sf	.994	1.018	.078	10.9%
2,000 to 3,000 sf	1.005	1.009	.071	13.1%
3,000 sf or Higher	.999	1.016	.055	9.8%
Overall	1.000	1.024	.066	12.0%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY		2	0.7%
	1	20	6.9%
	2	17	5.8%
	3	196	67.4%
	4	56	19.2%
Overall		291	100.0%
Excluded		0	
Total		291	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	1.109	1.076	.123	17.4%
1	.997	1.080	.082	14.8%
2	1.012	1.023	.049	7.3%
3	.997	1.020	.068	12.8%
4	1.000	1.021	.055	9.2%
Overall	1.000	1.024	.066	12.0%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION		1	0.3%
	1	1	0.3%
	2	6	2.1%
	3	283	97.3%
Overall		291	100.0%
Excluded		0	
Total		291	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.972	1.000	.000	.
1	1.168	1.000	.000	.
2	.989	.985	.099	16.4%
3	1.000	1.025	.065	12.0%
Overall	1.000	1.024	.066	12.0%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	16	4.5%
	$25K to $50K	23	6.5%
	$50K to $100K	162	45.5%
	$100K to $150K	49	13.8%
	$150K to $200K	29	8.1%
	$200K to $300K	19	5.3%
	$300K to $500K	25	7.0%
	$500K to $750K	11	3.1%
	$750K to $1,000K	14	3.9%
	Over $1,000K	8	2.2%
Overall		356	100.0%
Excluded		0	
Total		356	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.004	.997	.180	28.1%
$25K to $50K	1.020	1.000	.097	14.4%
$50K to $100K	1.000	1.002	.082	12.9%
$100K to $150K	.981	1.000	.174	24.0%
$150K to $200K	.945	.998	.167	22.4%
$200K to $300K	.920	1.010	.165	26.9%
$300K to $500K	.878	1.002	.218	31.6%
$500K to $750K	.971	.995	.084	13.0%
$750K to $1,000K	.952	.994	.190	31.2%
Over $1,000K	.990	1.017	.077	12.1%
Overall	.988	1.016	.127	19.4%

Subclass

Case Processing Summary

		Count	Percent
ABSTRLND	100.00	99	27.8%
	200.00	25	7.0%
	300.00	4	1.1%
	520.00	2	0.6%
	540.00	1	0.3%
	550.00	2	0.6%
	1112.00	186	52.2%
	1115.00	3	0.8%
	1120.00	1	0.3%
	1125.00	1	0.3%
	2112.00	6	1.7%
	2120.00	5	1.4%
	2130.00	9	2.5%
	2135.00	11	3.1%
	3115.00	1	0.3%
Overall		356	100.0%
Excluded		0	
Total		356	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100.00	.979	1.030	.151	22.0%
200.00	.982	1.010	.209	30.5%
300.00	.961	.987	.103	17.8%
520.00	.978	1.092	.171	24.1%
540.00	.824	1.000	.000	.
550.00	.819	1.006	.075	10.7%
1112.00	.993	1.035	.101	16.7%
1115.00	.719	.951	.182	34.6%
1120.00	.611	1.000	.000	.
1125.00	.882	1.000	.000	.
2112.00	.982	.988	.083	12.5%
2120.00	.982	1.111	.136	26.5%
2130.00	.902	1.037	.087	13.6%
2135.00	1.000	.981	.105	16.4%
3115.00	1.229	1.000	.000	.
Overall	.988	1.016	.127	19.4%