Boulder County Colorado

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WILDROSE
APPRAISAL, INCORPORATED
Audit Division

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APPRAISAL, INCORPORATED
Audit Division

September 15, 2022

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

      RE: Final Report for the 2022 Colorado Property Assessment Study

Dear Ms. Mullis:

Wildrose Appraisal Inc.-Audit Division is pleased to submit the Final Reports for the 2022 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

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 2022 and is pleased to report its findings for Boulder County in the following report.

# REGIONAL/HISTORICAL SKETCH OF BOULDER COUNTY

Regional Information

Boulder 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.
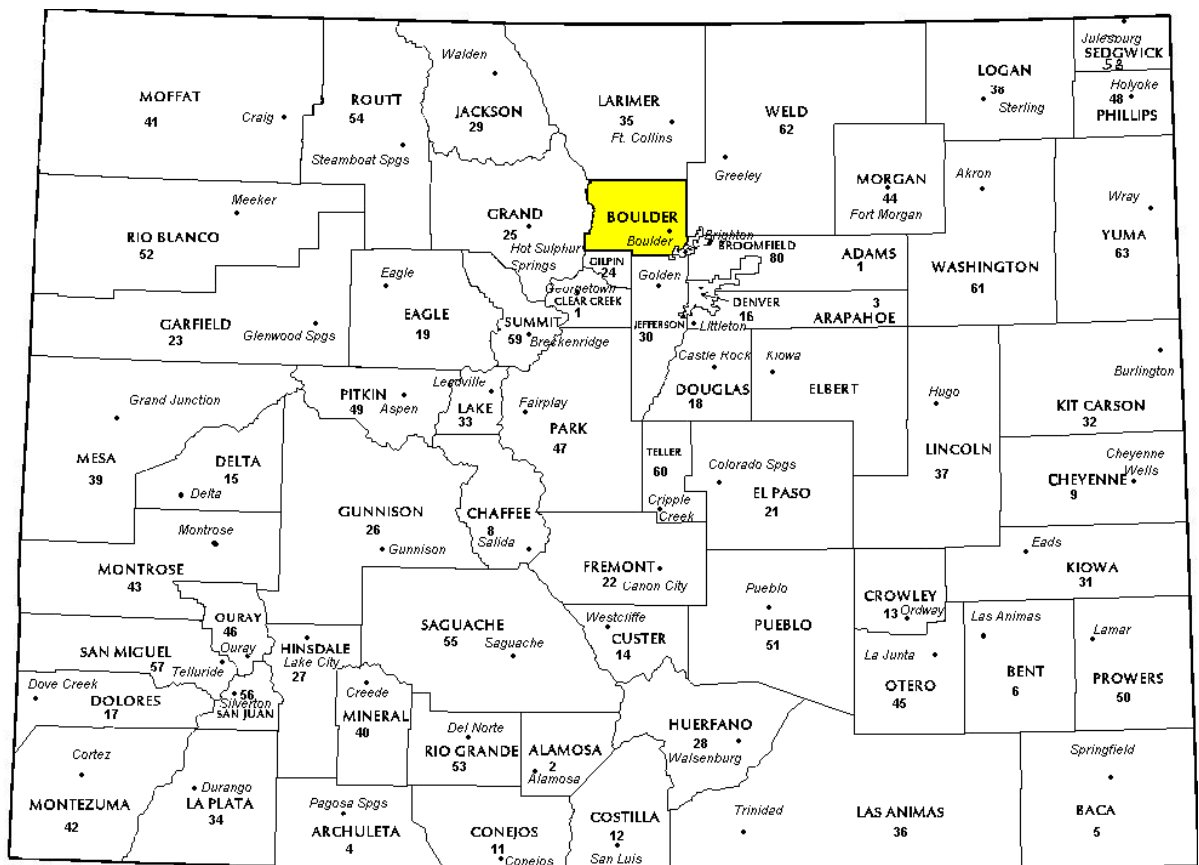
Historical Information

Boulder County has approximately 726.29 square miles and an estimated population of approximately 326,196 people, according to the U.S. Census Bureau's 2020 estimated census data. This represents a 10.7 percent change from April 1, 2010 to July 1, 2019.

Boulder County was one of the original 17 counties created by the Territory of Colorado on January 11,1861. The county was named for Boulder City and Boulder Creek, so named because of the abundance of boulders in the area. Boulder County retains essentially the same borders as in 1861, although a small portion of its southeastern corner became part of the City and County of Broomfield in 2001.

In the early to mid 1800s, the nomadic Southern Arapaho Native American tribe frequently wintered at the base of the foothills in the Boulder area. Chief Niwot and his band called the site their home. Other nomadic tribes included the Utes, Cheyennes, Comanches, and Sioux.

The first recorded European settlers in the area were gold prospectors who arrived in 1858, when Boulder was part of the Nebraska Territory (The former boundary between Nebraska and Kansas territories is the present Baseline Road in Boulder). The "Boulder City Town Company" was founded on February 10, 1859. Boulder's first school house was built in 1860, followed by the creation of the Colorado Territory in 1861. In 1871 'Boulder City' was incorporated. In 1873 the railroad was extended to Boulder and, in 1890, the Boulder Railroad Depot was constructed to serve as a station for the Union Pacific Railroad. In 1876 Colorado was granted statehood, and in that same year the University of Colorado at Boulder opened.

Mining gold, silver, and coal continued to be a prominent part of the local economy until the mid 1900s. A coal miners strike lasted from 1910 to 1915, causing a military presence in nearby Louisville. Mining's relevance in the local economy declined in the 1940s, when the city began actively recruiting clean industry, such as the National Bureau of Standards, which today is the National Institute of Standards and Technology, home of the atomic clock.
(Wikipedia.org)

R A T I O   A N A L Y S I S

Methodology

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

Although it was required that we examine the median and coefficient of dispersion for all counties, we also calculated the weighted mean and price-related differential for each class of property. Counties were not passed or failed by these latter measures, but were counseled if there were anomalies noted during our analysis. Qualified sales were based on the qualification code used by each county, which were typically coded as either "Q" or "C." The ratio analysis included all sales. The data was trimmed for counties with obvious outliers using IAAO standards for data analysis. In every case, we examined the loss in data from

trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were "lost" because of trimming.

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

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

Conclusions

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

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

The results for Boulder County are:

Boulder County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
Commercial/Industrial	105	0.950	1.040	9.2	Compliant
Single Family	10,193	0.994	1.011	7.6	Compliant
Vacant Land	136	1.000	0.992	20.4	Compliant

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

Recommendations

None

Methodology

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

Conclusions

After verification and analysis, it has been determined that Boulder County has complied with the statutory requirements to analyze the effects of time on value in their county. Boulder 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

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

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

or if there are other explanations for the observed difference.

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

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

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

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

Conclusions

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

Recommendations

None

AGRICULTURAL LAND STUDY
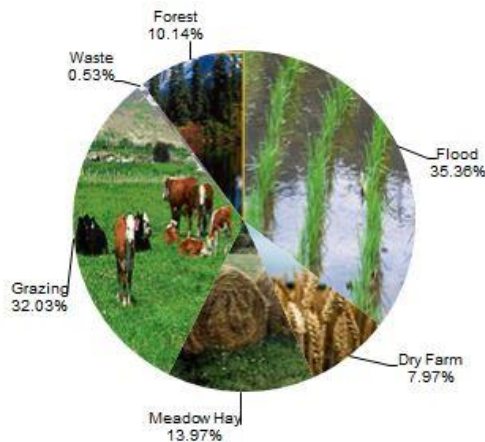
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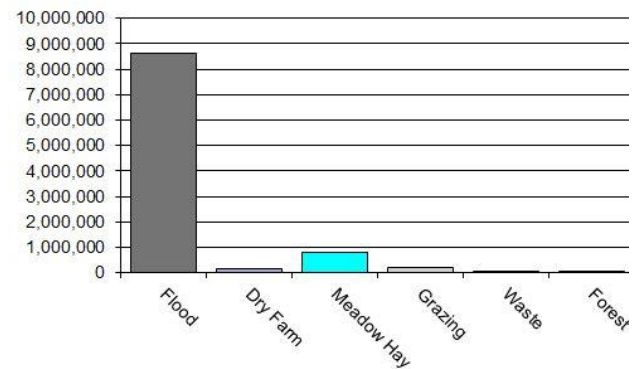
Agricultural Land

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:

Boulder 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	20,549	347.57	7,142,253	7,180,357	0.99
4127	Dry Farm	4,658	34.20	159,300	159,200	1.00
4137	Meadow Hay	8,385	87.49	733,613	739,689	0.99
4147	Grazing	19,482	10.55	205,446	204,715	1.00
4177	Forest	6,354	4.05	25,758	25,833	1.00
4167	Waste	306	1.91	584	674	0.87
Total/Avg		59,734	138.40	8,266,954	8,310,468	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

Boulder 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

Boulder 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
- Aerial Photography/Pictometry

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

- Property Record Card Analysis
- Questionnaires
- Field Inspections
- In-Person Interviews with Owners/Tenants
- Written Correspondence other than Questionnaire
- Aerial Photography/Pictometry

Boulder 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 2022 for Boulder County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 49 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

Boulder County appears to be doing an adequate job of verifying their sales.

Recommendations

None

ECONOMIC AREA REVIEW AND EVALUATION

Methodology

Boulder County has submitted a written narrative describing the economic areas that make up the county's market areas. Boulder 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 Boulder 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 2022 in Boulder 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

Boulder 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.

Boulder County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural, commercial and ski area 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

Boulder 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

Boulder 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.

Boulder 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
- Secretary of State business search
- Leasing Company Information

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.

Boulder County submitted their personal property written audit plan and was current for the 2022 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 $50,000 actual value exemption status
- Lowest or highest quartile of value per square foot
- Accounts protested with substantial disagreement

Boulder 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

Boulder 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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A PPENDICES

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STATISTICAL COMPLIANCE REPORT
FOR BOULDER COUNTY
2022

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I. OVERVIEW

Boulder County is an urban county located along Colorado's Front Range. The county has a total of 128,905 real property parcels, according to data submitted by the county assessor's office in 2022. The following provides a breakdown of property classes for this county:
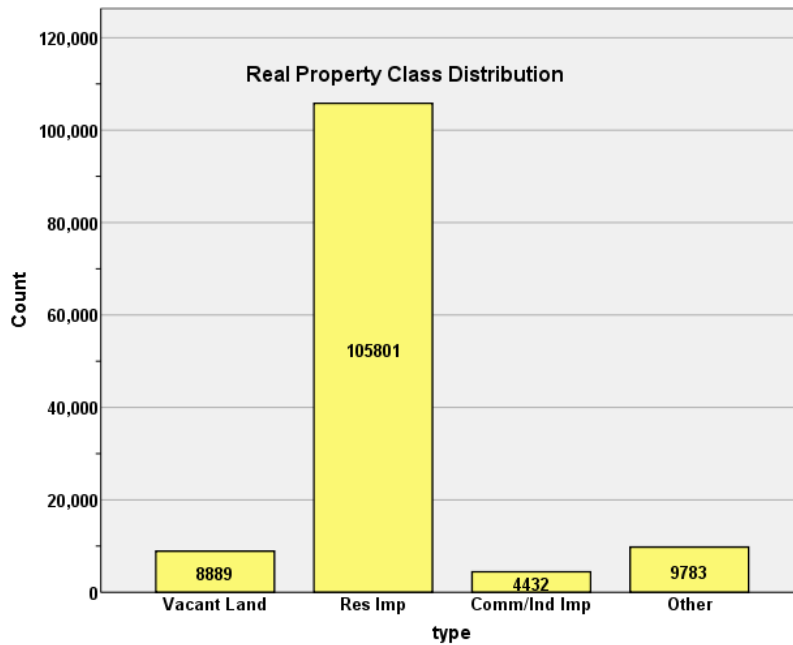
The vacant land class of properties was dominated by residential land. Residential lots (coded 100, 1110 and 1112) accounted for 60.8% of all vacant land parcels.

For residential improved properties, single family properties accounted for 82.7% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for 3.4% of all such properties in this county.

II. DATA FILES

The following sales analyses were based on the requirements of the 2022 Colorado Property Assessment Study. Information was provided by the Boulder Assessor's Office in May 2022. The data included all 5 property record files as specified by the Auditor.

III. RESIDENTIAL SALES RESULTS

There were 10,193 qualified residential sales in the 24-month sale period ending June 30, 2020. The sales ratio analysis was analyzed as follows:

Median	0.994
Price Related Differential	1.011
Coefficient of Dispersion	7.6

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

Economic Area
Case Processing Summary

		Count	Percent
ECONAREA	1	1317	12.9%
	2	570	5.6%
	3	282	2.8%
	4	2767	27.1%
	5	3321	32.6%
	6	1936	19.0%
Overall		10193	100.0%
Excluded		0	
Total		10193	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1	1.000	1.021	.081
2	.996	1.022	.100
3	1.000	1.043	.108
4	.991	1.002	.065
5	1.000	.999	.062
6	.980	1.014	.098
Overall	.994	1.011	.076

Neighborhoods with at least 35 sales
Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
101	.986	1.038	.158
102	1.004	1.017	.086
105	1.024	1.044	.134
107	.994	1.051	.111
109	1.000	1.024	.091
115	.980	1.032	.089
120	1.001	1.050	.098
122	1.000	1.039	.081
124	1.001	.996	.110
126	.960	1.010	.084
128	.968	.992	.068

130	.977	1.002	.054
132	1.019	1.008	.073
133	.987	1.004	.059
135	.986	1.010	.071
140	.990	.995	.084
142	.997	1.006	.062
145	1.000	1.018	.112
146	.971	1.007	.078
148	1.000	1.012	.085
150	.991	1.007	.045
155	.974	1.003	.064
158	.989	1.013	.071
160	1.003	1.023	.073
164	.999	1.002	.044
170	.992	1.010	.104
172	1.000	1.021	.101
174	1.000	1.004	.080
178	1.000	1.031	.098
201	.984	1.004	.088
202	.991	1.001	.056
203	.982	1.000	.071
204	.938	1.006	.087
205	1.013	.995	.056
223	1.027	1.001	.059
240	.993	1.007	.063
241	.988	1.003	.052
242	1.006	1.011	.064
243	.970	1.003	.045
255	.985	.996	.054
256	.974	.988	.065
257	1.000	.997	.071
410	.948	1.001	.058
420	1.012	1.007	.065
425	.951	1.000	.057
430	.932	.997	.046
440	1.000	1.003	.058
445	.995	1.006	.055
450	1.013	1.000	.061
451	1.014	1.010	.055
455	1.054	1.001	.057
460	.966	1.016	.098
465	.964	1.004	.066
470	.942	1.001	.058
480	.966	.994	.074
501	.994	.984	.081
820	.980	1.039	.114
825	1.035	1.021	.097
830	1.000	1.101	.110
901	.991	1.004	.108
903	.947	.989	.117
910	1.006	1.070	.120
911	.979	1.043	.118
960	1.010	1.010	.090
962	1.000	1.004	.070
Overall	.995	1.009	.074

The above ratio statistics were in overall 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:
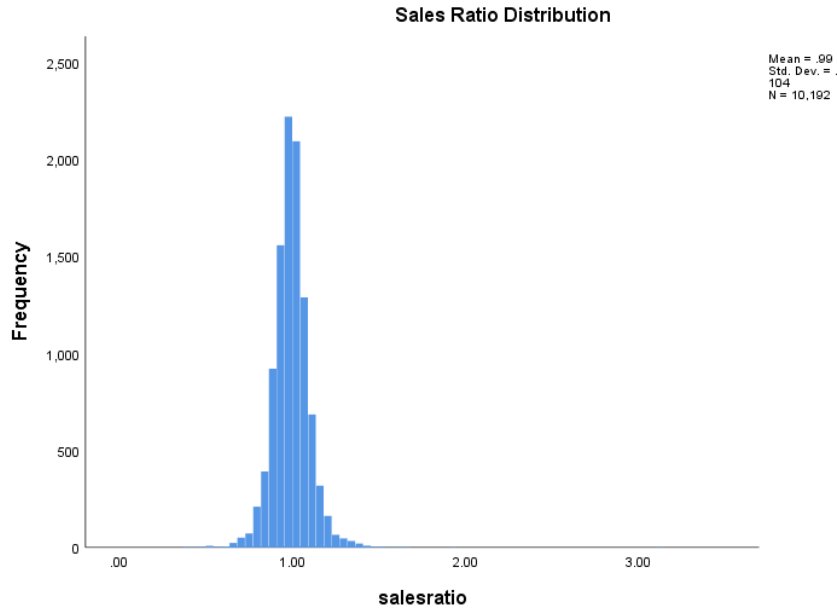
NOTE – ONE SALE WITH GT 5.0 SALES RATIO EXCLUDED
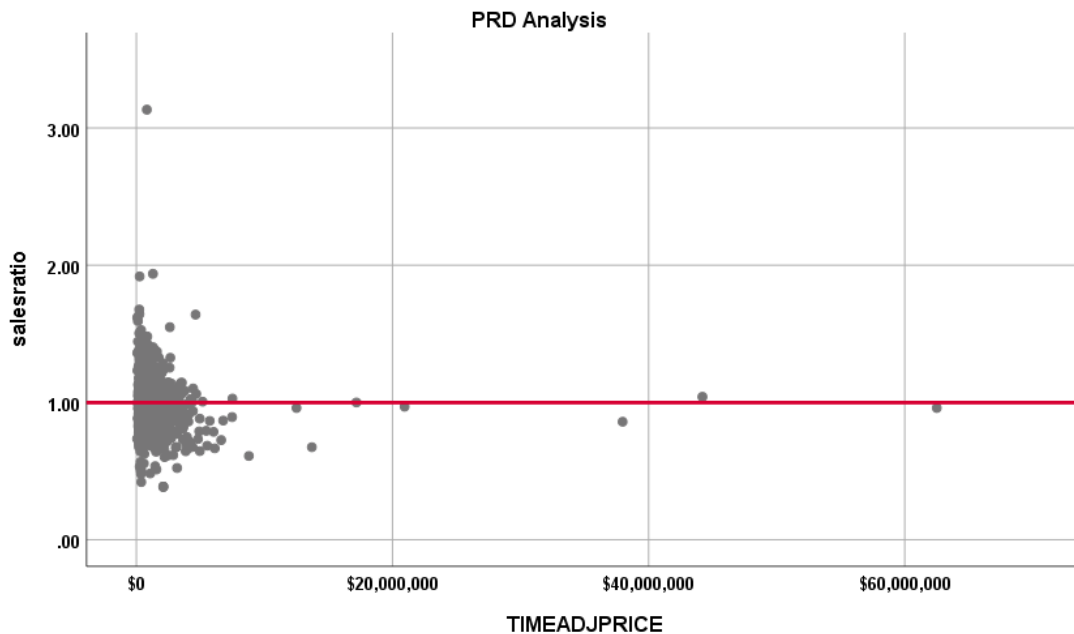
NOTE – ONE SALE WITH GT 5.0 SALES RATIO EXCLUDED

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

Subclass 1212 PRD Analysis

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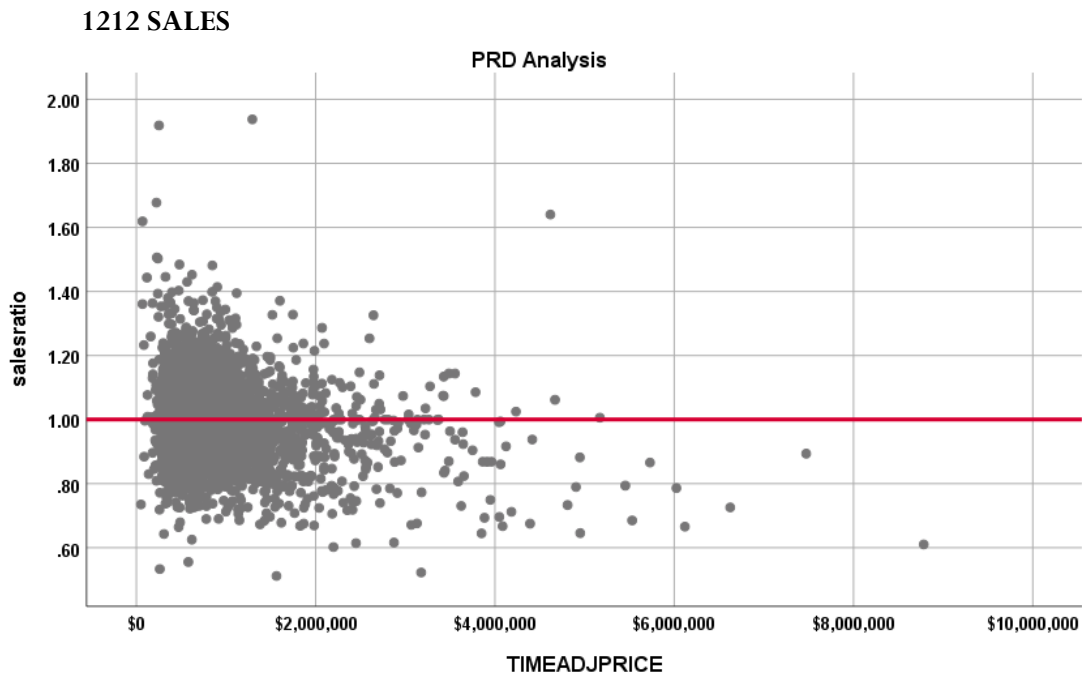
1212 SALES

The Price-Related Differential (PRD) for 1212 sales is 1.010, which is within IAAO standards for the PRD. We also performed a regression analysis between the sales ratio and the assessor's current value to further test for regressivity or progressivity in the residential sales valuation, as follows:

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.992	.002		514.854	.000
	CURRTOT	.00000000644	.000	.031	2.771	.006

a. Dependent Variable: salesratio

The slope of the line at 0.00000000644 indicates that there is virtually no slope in the regression line, which indicates that sales ratios are similar across the entire sale price array. This indicates no regressivity or progressivity in the residential values assigned by the assessor.

Case Processing Summary

		Count	Percent
SPRec	LT $300K	134	1.6%
	$300K to $400K	1234	15.1%
	$400K to $500K	1489	18.2%
	$500K to $600K	1435	17.5%
	$600K to $750K	1623	19.8%
	$750K to $1000K	1223	14.9%
	$1000K to $2000K	854	10.4%
	Over $2000K	195	2.4%
Overall		8187	100.0%
Excluded		0	
Total		8187	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $300K	.999	1.010	.119	18.6%
$300K to $400K	.981	1.000	.061	8.4%
$400K to $500K	1.000	1.000	.063	8.3%
$500K to $600K	1.005	1.000	.065	8.5%
$600K to $750K	1.000	1.000	.061	8.2%
$750K to $1000K	1.000	1.000	.070	9.5%
$1000K to $2000K	.975	1.003	.091	12.2%
Over $2000K	.937	1.013	.119	15.9%
Overall	.998	1.010	.069	9.5%

The above table indicates no regressivity in the sales ratios across sale price categories.

Residential Market Trend Analysis

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

Coefficients[a]

ECONAREA	Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	1	(Constant)	1.016	.007		152.773	.000
		SalePeriod	-.002	.001	-.096	-3.496	.000
2	1	(Constant)	1.008	.012		86.784	.000
		SalePeriod	-.001	.001	-.042	-1.012	.312
3	1	(Constant)	.989	.018		55.739	.000
		SalePeriod	.001	.001	.042	.703	.482
4	1	(Constant)	.998	.003		322.786	.000
		SalePeriod	-.001	.000	-.046	-2.396	.017
5	1	(Constant)	1.009	.003		362.604	.000
		SalePeriod	-.001	.000	-.067	-3.883	.000
6	1	(Constant)	.997	.015		67.677	.000
		SalePeriod	.000	.001	-.009	-.376	.707

a. Dependent Variable: salesratio

There was no significant residual market trending present in the sale ratio data for most economic areas; the three economic areas with statistically significant residual trends were not significant in terms of the magnitude of the trend. 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 2022 between each group. The data was analyzed both as a whole and broken down by economic area and by neighborhoods with at least 35 sales, as follows:

Class
Report
VALSF

sold	N	Median	Mean
UNSOLD	95417	$350	$674
SOLD	10192	$331	$500

Economic Area
Report
VALSF

ECONAREA	sold	N	Median	Mean
1	UNSOLD	19301	$592	$624
	SOLD	1315	$614	$646
2	UNSOLD	7715	$363	$384
	SOLD	569	$379	$419
3	UNSOLD	4972	$413	$435
	SOLD	282	$406	$444
4	UNSOLD	23137	$328	$340
	SOLD	2767	$310	$328
5	UNSOLD	25518	$270	$280
	SOLD	3321	$273	$286
6	UNSOLD	14413	$373	$396
	SOLD	1936	$380	$412

Neighborhoods with at least 35 sales
Report
VALSF

NBHD	sold	N	Median	Mean
101	UNSOLD	1170	$586	$600
	SOLD	158	$655	$681
102	UNSOLD	1182	$646	$663
	SOLD	87	$666	$696
105	UNSOLD	767	$704	$727
	SOLD	62	$798	$776
107	UNSOLD	582	$888	$933
	SOLD	40	$825	$886
109	UNSOLD	945	$701	$725
	SOLD	61	$725	$747
115	UNSOLD	1386	$605	$616
	SOLD	116	$660	$650
120	UNSOLD	817	$612	$636

	SOLD	44	$624	$652
122	UNSOLD	1418	$528	$510
	SOLD	102	$548	$561
124	UNSOLD	1259	$458	$439
	SOLD	93	$467	$473
126	UNSOLD	2058	$367	$386
	SOLD	211	$371	$398
128	UNSOLD	853	$393	$393
	SOLD	109	$395	$400
130	UNSOLD	601	$339	$352
	SOLD	65	$360	$377
132	UNSOLD	1258	$347	$361
	SOLD	124	$348	$370
133	UNSOLD	607	$341	$359
	SOLD	48	$388	$406
135	UNSOLD	1048	$464	$448
	SOLD	206	$528	$519
140	UNSOLD	1835	$422	$438
	SOLD	130	$426	$452
142	UNSOLD	995	$415	$437
	SOLD	75	$428	$459
145	UNSOLD	965	$438	$451
	SOLD	64	$462	$490
146	UNSOLD	643	$511	$525
	SOLD	57	$477	$495
148	UNSOLD	1830	$435	$449
	SOLD	188	$415	$448
150	UNSOLD	796	$554	$557
	SOLD	56	$564	$564
155	UNSOLD	3208	$285	$290
	SOLD	355	$295	$319
158	UNSOLD	1166	$604	$658
	SOLD	88	$644	$697
160	UNSOLD	1867	$662	$661
	SOLD	143	$693	$679
164	UNSOLD	888	$533	$529
	SOLD	48	$603	$592
170	UNSOLD	1660	$741	$769
	SOLD	113	$788	$799
172	UNSOLD	700	$532	$554
	SOLD	55	$580	$608
174	UNSOLD	1413	$591	$593
	SOLD	132	$549	$581
178	UNSOLD	823	$435	$454
	SOLD	69	$497	$521
201	UNSOLD	1717	$338	$344
	SOLD	158	$358	$371
202	UNSOLD	2620	$292	$296
	SOLD	272	$305	$313
203	UNSOLD	2101	$271	$276
	SOLD	189	$285	$298
204	UNSOLD	1625	$260	$267
	SOLD	158	$291	$303
205	UNSOLD	3118	$235	$237
	SOLD	513	$240	$239
223	UNSOLD	3140	$272	$276
	SOLD	287	$289	$295

240	UNSOLD	146	$255	$282
	SOLD	71	$278	$279
241	UNSOLD	1308	$281	$278
	SOLD	223	$233	$263
242	UNSOLD	3231	$279	$289
	SOLD	633	$286	$298
243	UNSOLD	1034	$285	$292
	SOLD	180	$258	$272
255	UNSOLD	3195	$240	$244
	SOLD	389	$248	$256
256	UNSOLD	2128	$248	$252
	SOLD	249	$241	$252
257	UNSOLD	794	$241	$246
	SOLD	304	$260	$265
410	UNSOLD	1433	$376	$404
	SOLD	75	$364	$403
420	UNSOLD	1363	$386	$405
	SOLD	194	$407	$413
425	UNSOLD	777	$379	$394
	SOLD	52	$418	$428
430	UNSOLD	1202	$398	$408
	SOLD	75	$445	$459
440	UNSOLD	3452	$244	$245
	SOLD	831	$236	$241
445	UNSOLD	495	$271	$264
	SOLD	42	$284	$288
450	UNSOLD	2378	$349	$356
	SOLD	285	$362	$370
451	UNSOLD	422	$324	$332
	SOLD	35	$347	$348
455	UNSOLD	445	$283	$285
	SOLD	55	$297	$297
460	UNSOLD	741	$341	$345
	SOLD	79	$352	$360
465	UNSOLD	1375	$325	$330
	SOLD	157	$346	$357
470	UNSOLD	834	$368	$373
	SOLD	87	$375	$384
480	UNSOLD	2234	$301	$322
	SOLD	374	$302	$321
501	UNSOLD	1583	$368	$375
	SOLD	150	$368	$378
820	UNSOLD	1000	$387	$411
	SOLD	61	$371	$404
825	UNSOLD	810	$323	$349
	SOLD	50	$338	$367
830	UNSOLD	1222	$401	$433
	SOLD	64	$381	$429
901	UNSOLD	1058	$344	$361
	SOLD	107	$342	$370
903	UNSOLD	678	$400	$419
	SOLD	49	$427	$435
910	UNSOLD	479	$389	$412
	SOLD	37	$363	$428
911	UNSOLD	509	$299	$311
	SOLD	58	$294	$304
960	UNSOLD	1072	$321	$332

	SOLD	53	$358	$385
962	UNSOLD	1102	$369	$380
	SOLD	83	$395	$412

Although there was some differences seen between sold and unsold residential properties at the neighborhood level, when the second percent change in value test is employed, the difference is reduced greatly. The above overall and economic area results indicate that sold and unsold residential properties were valued in a consistent manner.

IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

There were 110 qualified commercial and industrial sales in the 24 month sale period ending June 30, 2020. Five sales were trimmed using IAAO standards, resulting in a final total of 105 sales. The sales ratio analysis was analyzed as follows:

Median	**0.95**
Price Related Differential	**1.04**
Coefficient of Dispersion	**9.2**

The above table indicates that the Boulder 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 Sale Price by Sales Ratio
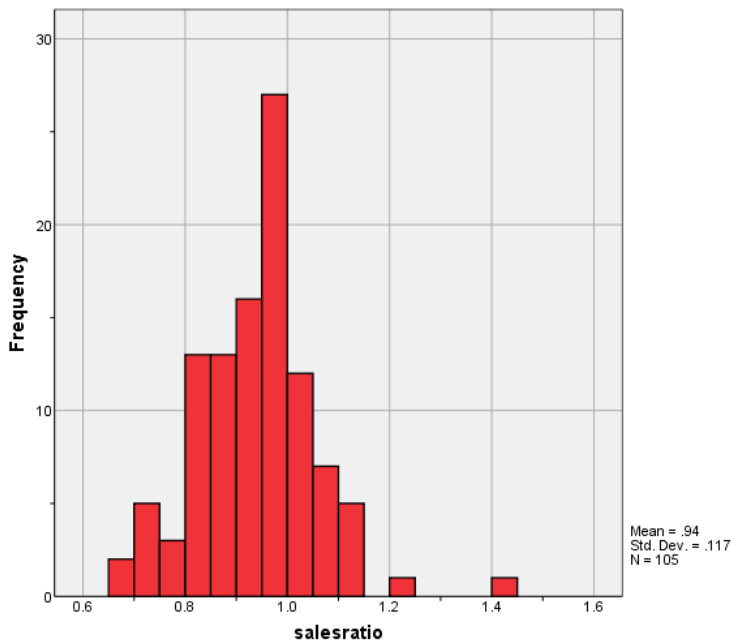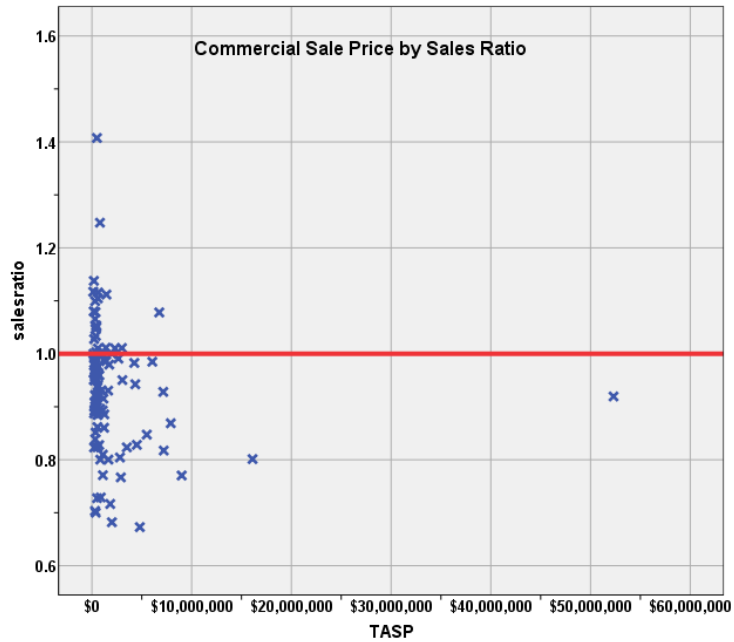
Commercial/Industrial Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.911	.024		38.382	.000
	SalePeriod	.002	.002	.118	1.202	.232

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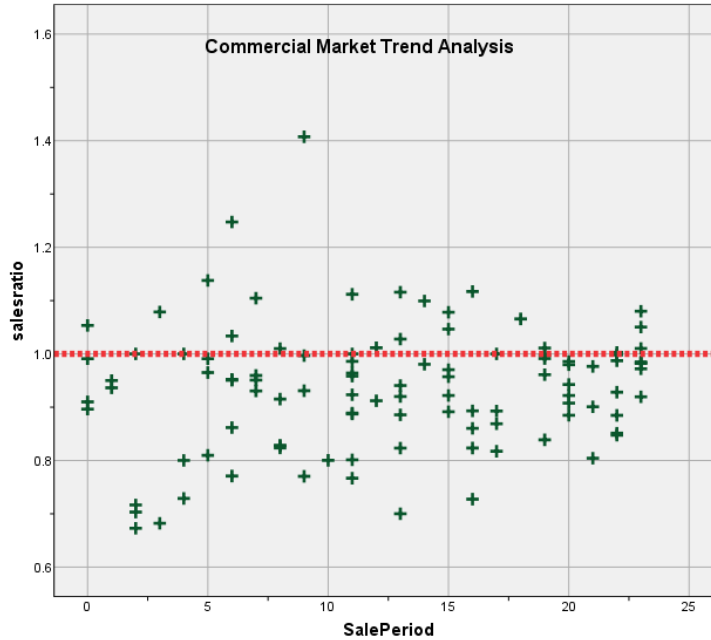
There was no residual market trending present in the commercial sale ratios. We concluded that the assessor has adequately considered market trending adjustments as part of the commercial/industrial valuation.

Sold/Unsold Analysis

We compared the median and mean change in actual value for valuation year 2018 and valuation year 2020 for sold and unsold commercial properties, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	4171	1.03	1.03
SOLD	105	1.04	1.03

Report

DIFF

ABSTRIMP	sold	N	Median	Mean
2212.00	UNSOLD	572	1.02	1.03
	SOLD	11	1.01	.98
2220.00	UNSOLD	504	1.02	1.04
	SOLD	8	1.02	1.00
2234.00	UNSOLD	201	1.02	1.03
	SOLD	5	1.00	1.00
2245.00	UNSOLD	806	1.05	1.04
	SOLD	31	1.05	1.04
3210.00	UNSOLD	168	1.05	1.05
	SOLD	6	1.05	1.05
3230.00	UNSOLD	141	1.05	1.05
	SOLD	7	1.05	1.07

Based on similarities between the sold and unsold median change in value, we concluded that there was no evidence of the assessor adjusting the values of sold commercial properties by a greater amount than with unsold commercial properties between valuation years.

V. VACANT LAND SALE RESULTS

There were 144 qualified vacant land sales for the 24 month sale period ending June 30, 2020. Using IAAO standards, 8 sales were removed, resulting in 136 qualified vacant land sales.

The sales ratios were analyzed with the following results:

Median	1.000
Price Related Differential	0.992
Coefficient of Dispersion	20.4

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:

Mean = 1.01
Std. Dev. = .28
N = 136
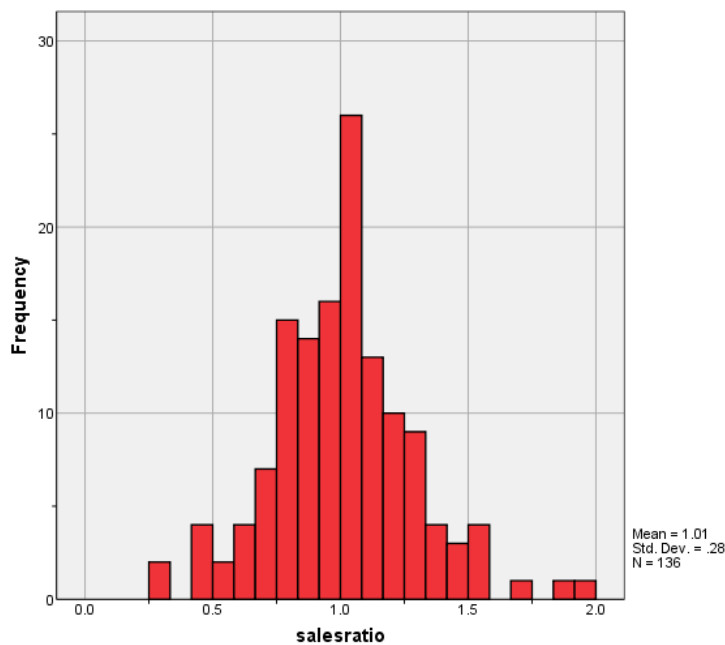
The above histogram indicates that the distribution of the vacant land sale ratios was within state mandated limits.

Vacant Land Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.991	.049		20.241	.000
	SalePeriod	.002	.004	.040	.461	.645

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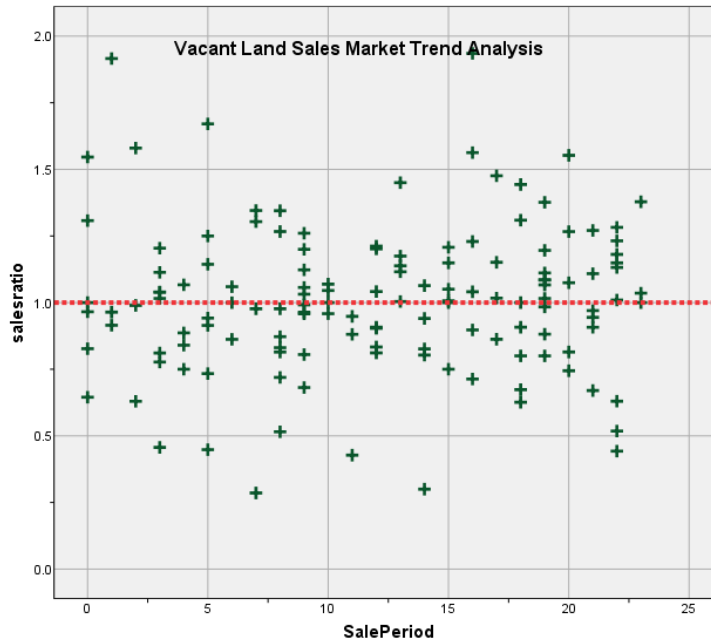
The above analysis indicated that no significant market trending was present in the vacant land sale data. We concluded that the assessor has adequately dealt with market trending for vacant land properties.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold vacant land properties, we compared the median change in value for valuation year 2018 and valuation year 2020 between each group, as follows:

Report
DIFF

sold	N	Median	Mean
UNSOLD	4620	1.00	.96
SOLD	128	1.10	1.17

We also stratified the analysis by subdivision with more than 3 sales, as follows:

Report
DIFF

SUBDIVNO	sold	N	Median	Mean
448	UNSOLD	8	1.00	1.00
	SOLD	3	1.00	1.07
452	UNSOLD	29	1.00	1.00
	SOLD	3	1.00	1.00
4261	UNSOLD	12	1.24	1.29
	SOLD	3	1.26	1.34
9914	UNSOLD	57	1.00	1.09
	SOLD	4	1.00	1.12
9915	UNSOLD	80	1.00	1.01
	SOLD	4	1.00	.91
9916	UNSOLD	109	1.00	1.07
	SOLD	8	1.32	1.28

9918	UNSOLD	97	1.00	.96
	SOLD	5	1.07	1.04
9919	UNSOLD	55	1.00	.88
	SOLD	5	1.00	1.00
9940	UNSOLD	97	1.00	1.17
	SOLD	3	1.00	1.25
9942	UNSOLD	139	1.00	1.06
	SOLD	6	1.06	1.07
9943	UNSOLD	65	1.00	1.09
	SOLD	4	1.00	1.10

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

V. CONCLUSIONS

Based on this statistical analysis, there were no significant compliance issues concluded for Boulder County as of the date of this report.

STATISTICAL ABSTRACT
Residential

		95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Ratio Statistics for CURRTOT / TASP													
ECONAREA	Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
1	.996	.989	1.003	1.000	.994	1.000	95.3%	.976	.967	.986	1.021	.081	12.5%
2	.998	.986	1.009	.996	.983	1.000	95.1%	.976	.959	.994	1.022	.100	14.1%
3	1.000	.983	1.017	1.000	.990	1.011	95.1%	.959	.929	.989	1.043	.108	14.5%
4	.991	.988	.995	.991	.987	.994	95.2%	.989	.986	.993	1.002	.065	8.5%
5	1.000	.997	1.002	1.000	.998	1.000	95.2%	1.000	.997	1.004	.999	.062	8.3%
6	.992	.978	1.007	.980	.975	.985	95.2%	.978	.957	.999	1.014	.098	32.7%

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.

Commercial Land

File   Edit   View   Insert   Pivot   Format   Help

	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
Ratio Statistics for CURRTOT / TASP												
Mean	Lower Bound	Upper Bound	Median	Lower Bound	Upper Bound	Actual Coverage	Weighted Mean	Lower Bound	Upper Bound	Price Related Differential	Coefficient of Dispersion	Mean Centered
.936	.914	.959	.950	.919	.972	96.9%	.900	.870	.929	1.041	.092	12.5%

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

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1212.00	8186	80.3%
	1213.50	1	0.0%
	1215.00	71	0.7%
	1217.50	2	0.0%
	1220.00	38	0.4%
	1223.64	1	0.0%
	1224.17	1	0.0%
	1225.00	10	0.1%
	1230.00	1881	18.5%
	1717.00	1	0.0%
	3597.44	1	0.0%
Overall		10193	100.0%
Excluded		0	
Total		10193	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212.00	.998	1.010	.070	9.8%
1213.50	.719	1.000	.000	.
1215.00	.971	.980	.133	16.9%
1217.50	.930	1.029	.076	10.7%
1220.00	.949	1.036	.139	21.4%
1223.64	.960	1.000	.000	.
1224.17	.960	1.000	.000	.
1225.00	.999	2.130	1.407	439.2%
1230.00	.981	1.006	.090	12.5%
1717.00	1.062	1.000	.000	.
3597.44	.950	1.000	.000	.
Overall	.994	1.011	.076	16.8%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	223	2.2%
	75 to 100	191	1.9%
	50 to 75	1319	12.9%
	25 to 50	3573	35.1%
	5 to 25	2828	27.7%
	5 or Newer	2059	20.2%
Overall		10193	100.0%
Excluded		0	
Total		10193	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.946	1.012	.111	15.1%
75 to 100	.972	1.013	.102	13.6%
50 to 75	.994	1.012	.081	11.1%
25 to 50	.980	1.008	.081	24.9%
5 to 25	1.001	1.009	.065	8.9%
5 or Newer	1.000	1.015	.069	10.8%
Overall	.994	1.011	.076	16.8%

Improved Area

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	61	0.6%
	500 to 1,000 sf	1407	13.8%
	1,000 to 1,500 sf	2963	29.1%
	1,500 to 2,000 sf	2303	22.6%
	2,000 to 3,000 sf	2435	23.9%
	3,000 sf or Higher	1024	10.0%
Overall		10193	100.0%
Excluded		0	
Total		10193	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.922	1.030	.140	22.2%
500 to 1,000 sf	.962	1.005	.079	11.0%
1,000 to 1,500 sf	.982	1.004	.069	9.5%
1,500 to 2,000 sf	1.000	1.012	.071	9.6%
2,000 to 3,000 sf	1.005	1.018	.071	9.9%
3,000 sf or Higher	1.012	1.039	.095	42.7%
Overall	.994	1.011	.076	16.8%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	1	10	0.1%
	2	57	0.6%
	3	4693	46.0%
	4	4407	43.2%
	5	886	8.7%
	6	140	1.4%
Overall		10193	100.0%
Excluded		0	
Total		10193	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1	1.009	1.104	.162	24.6%
2	.986	1.016	.144	19.5%
3	.974	1.006	.074	22.1%
4	1.007	1.013	.069	9.5%
5	1.000	1.027	.088	11.8%
6	1.000	1.038	.131	25.4%
Overall	.994	1.011	.076	16.8%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	$100K to $150K	2	1.9%
	$150K to $200K	3	2.9%
	$200K to $300K	12	11.4%
	$300K to $500K	25	23.8%
	$500K to $750K	17	16.2%
	$750K to $1,000K	9	8.6%
	Over $1,000K	37	35.2%
Overall		105	100.0%
Excluded		0	
Total		105	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
$100K to $150K	1.059	1.002	.055	7.8%
$150K to $200K	1.080	1.001	.053	8.4%
$200K to $300K	.936	1.001	.048	6.0%
$300K to $500K	.972	.993	.091	14.0%
$500K to $750K	.936	.997	.078	10.5%
$750K to $1,000K	.931	1.001	.107	15.8%
Over $1,000K	.915	1.006	.100	12.1%
Overall	.950	1.041	.092	12.4%

Subclass

Case Processing Summary

		Count	Percent
ABSTRIMP	1545.33	1	1.0%
	1712.00	1	1.0%
	1716.00	1	1.0%
	1716.50	1	1.0%
	1727.00	1	1.0%
	1737.50	1	1.0%
	2212.00	11	10.5%
	2215.00	1	1.0%
	2220.00	8	7.6%
	2221.00	4	3.8%
	2221.50	1	1.0%
	2223.50	1	1.0%
	2225.00	2	1.9%
	2230.00	3	2.9%
	2231.00	3	2.9%
	2232.00	2	1.9%
	2234.00	5	4.8%
	2235.00	2	1.9%
	2236.50	1	1.0%
	2237.00	3	2.9%
	2239.00	1	1.0%
	2240.00	1	1.0%
	2245.00	31	29.5%
	3210.00	6	5.7%
	3215.00	2	1.9%
	3230.00	7	6.7%
	3235.00	4	3.8%
Overall		105	100.0%
Excluded		0	
Total		105	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1545.33	.891	1.000	.000	.
1712.00	1.099	1.000	.000	.
1716.00	.910	1.000	.000	.
1716.50	1.047	1.000	.000	.
1727.00	.991	1.000	.000	.
1737.50	1.053	1.000	.000	.
2212.00	.950	.995	.073	9.2%
2215.00	.801	1.000	.000	.
2220.00	.986	1.002	.018	2.8%
2221.00	.919	1.005	.027	4.5%
2221.50	.970	1.000	.000	.
2223.50	.980	1.000	.000	.
2225.00	.913	.987	.093	13.2%
2230.00	1.034	1.034	.064	9.6%
2231.00	1.116	1.026	.078	11.7%

2232.00	.907	1.011	.114	16.1%
2234.00	.889	.977	.082	13.7%
2235.00	.902	1.071	.112	15.9%
2236.50	1.407	1.000	.000	.
2237.00	.952	1.040	.057	11.3%
2239.00	.770	1.000	.000	.
2240.00	.823	1.000	.000	.
2245.00	.922	1.017	.080	10.9%
3210.00	.883	.970	.075	9.1%
3215.00	.948	.973	.066	9.3%
3230.00	.972	1.011	.072	11.4%
3235.00	.699	1.017	.032	3.8%
Overall	.950	1.041	.092	12.4%

Improvement Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	8	7.6%
	75 to 100	5	4.8%
	50 to 75	15	14.3%
	25 to 50	34	32.4%
	5 to 25	41	39.0%
	5 or Newer	2	1.9%
Overall		105	100.0%
Excluded		0	
Total		105	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.978	1.003	.057	7.5%
75 to 100	.977	.999	.050	7.8%
50 to 75	.980	1.100	.111	17.5%
25 to 50	.955	1.046	.093	12.2%
5 to 25	.920	1.020	.087	11.2%
5 or Newer	1.034	1.017	.080	11.4%
Overall	.950	1.041	.092	12.4%

Improvement Size

Case Processing Summary

		Count	Percent
ImpSFRec	LE 500 sf	99	94.3%
	500 to 1,000 sf	5	4.8%
	3,000 sf or Higher	1	1.0%
Overall		105	100.0%
Excluded		0	
Total		105	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LE 500 sf	.943	1.039	.093	12.6%
500 to 1,000 sf	1.047	.997	.067	10.2%
3,000 sf or Higher	.991	1.000	.000	.
Overall	.950	1.041	.092	12.4%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY	1	1	1.0%
	2	2	1.9%
	3	84	80.0%
	4	18	17.1%
Overall		105	100.0%
Excluded		0	
Total		105	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1	.682	1.000	.000	.
2	1.020	1.025	.078	11.0%
3	.955	1.038	.092	12.7%
4	.920	1.038	.075	9.9%
Overall	.950	1.041	.092	12.4%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION	2	2	2.0%
	3	69	70.4%
	4	27	27.6%
Overall		98	100.0%
Excluded		7	
Total		105	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
2	.938	.980	.056	7.9%
3	.959	1.041	.100	13.5%
4	.922	1.029	.071	10.2%
Overall	.946	1.035	.094	12.6%

Vacant Land Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	2	1.5%
	$25K to $50K	11	8.1%
	$50K to $100K	24	17.6%
	$100K to $150K	23	16.9%
	$150K to $200K	10	7.4%
	$200K to $300K	30	22.1%
	$300K to $500K	19	14.0%
	$500K to $750K	10	7.4%
	$750K to $1,000K	3	2.2%
	Over $1,000K	4	2.9%
Overall		136	100.0%
Excluded		0	
Total		136	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	.550	1.000	.455	64.3%
$25K to $50K	1.149	1.012	.129	17.3%
$50K to $100K	.998	1.031	.208	27.1%
$100K to $150K	.887	1.003	.250	33.0%
$150K to $200K	1.112	1.013	.174	23.3%
$200K to $300K	1.008	1.013	.198	31.8%
$300K to $500K	1.007	1.005	.140	20.6%
$500K to $750K	.984	1.007	.145	21.0%
$750K to $1,000K	.915	.998	.314	47.2%
Over $1,000K	1.189	.999	.225	28.7%
Overall	1.000	.992	.204	28.0%

Subclass

Case Processing Summary

		Count	Percent
ABSTRLND	100.00	60	44.1%
	200.00	3	2.2%
	300.00	9	6.6%
	400.00	2	1.5%
	510.00	6	4.4%
	520.00	23	16.9%
	530.00	7	5.1%
	540.00	8	5.9%
	550.00	6	4.4%
	1112.00	11	8.1%
	2100.00	1	0.7%
Overall		136	100.0%
Excluded		0	
Total		136	

Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
100.00	1.003	.928	.204	27.3%
200.00	.959	.959	.060	11.4%
300.00	1.036	1.012	.102	14.8%
400.00	1.039	1.000	.000	0.0%
510.00	.950	1.177	.271	41.5%
520.00	1.069	1.074	.262	32.0%
530.00	.862	1.103	.191	25.9%
540.00	1.030	1.078	.171	25.1%
550.00	1.103	1.072	.229	36.6%
1112.00	1.010	1.110	.127	20.1%
2100.00	.673	1.000	.000	.
Overall	1.000	.992	.204	28.0%