2022
BACA COUNTY
PROPERTY ASSESSMENT
STUDY

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
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.

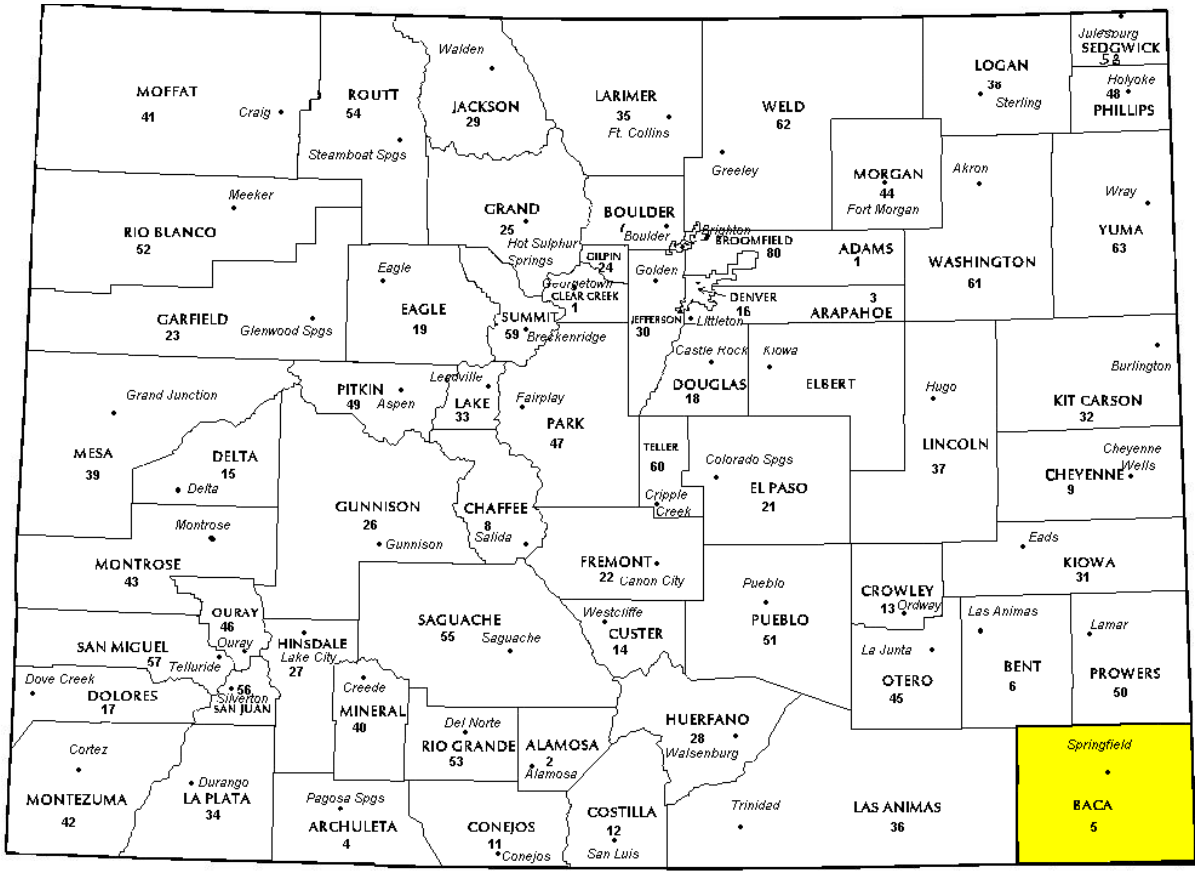
Statistical analysis is performed on vacant land, residential properties, commercial/industrial properties, agricultural land, and personal property. The statistical study results are compared with State Board of Equalization compliance requirements and the manuals published by the State Property Tax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

Wildrose Audit has completed the Property Assessment Study for 2022 and is pleased to report its findings for Baca County in the following report.

REGIONAL / HISTORICAL SKETCH OF BACA COUNTY

Regional Information

Baca County is located in the Eastern Plains region of Colorado. The Eastern Plains of Colorado refer to the region on the east side of the Rocky Mountain. It is east of the population centers of the Front Range, including Baca, Bent, Cheyenne, Crowley, Elbert, Kiowa, Kit Carson, Lincoln, Logan, Morgan, Otero, Phillips, Prowers, Sedgwick, Washington, and Yuma counties.



Historical Information

Baca County has approximately 2,555 square miles and an estimated population of approximately 3,581 people, according to the U.S. Census Bureau's 2020 estimated census data. This represents a -5.4 percent change from April 1, 2010 to July 1, 2019.

Baca County was created by the Colorado legislature on April 16, 1889, out of the eastern portions of Las Animas County. The County was named in honor of pioneer and Colorado territorial legislator Felipe Baca.

Baca County is located in the southeastern corner of Colorado. New Mexico and Oklahoma border it on the south, with Kansas on the east. It is located within the physiographic province of the Great Plains, and ranges from 3,500 feet to 5,280 elevation above sea level. The climate is semi-arid, with an average annual precipitation of about 12 inches in northwest corner to about 17 inches in the southeastern corner.

Compared with the Front Range communities, land, labor and cost of living are low, with labor having a strong work ethic. Baca County is the fifth most populous county in the southeast Colorado Enterprise Development region and is the second least densely populated.

Higher education is available at Lamar Community Collage, Otero Junior Collage at La Junta or Panhandle University near Guymon, Oklahoma.

Baca County offers many recreational opportunities for hunting, fishing, bird watching and exploring the canyon lands with their rock art, archeological and paleontological history.
(wikipedia.org &springfieldcolorado.com)

RATIO ANALYSIS

Methodology

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

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

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

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

Conclusions

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

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

The results for Baca County are:

Baca County Ratio Grid					
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis
*Commercial/Industrial	18	0.974	0.938	12.1	Compliant
Single Family	61	0.984	1.024	12.3	Compliant
Vacant Land	N/A	N/A	N/A	N/A	N/A

**County Sales File augmented by 2 supplemental appraisals*

After applying the above described methodologies, it is concluded from the sales ratios that Baca 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 Baca County has complied with the statutory requirements to analyze the effects of time on value in their county. Baca 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

Baca 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	N/A

Conclusions

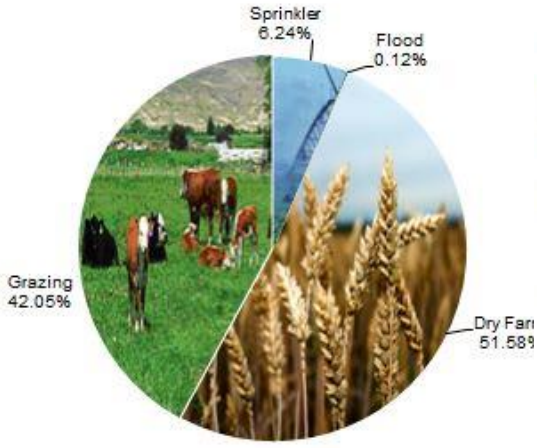
After applying the above described methodologies, it is concluded that Baca County is reasonably treating its sold and unsold properties in the same manner.

Recommendations

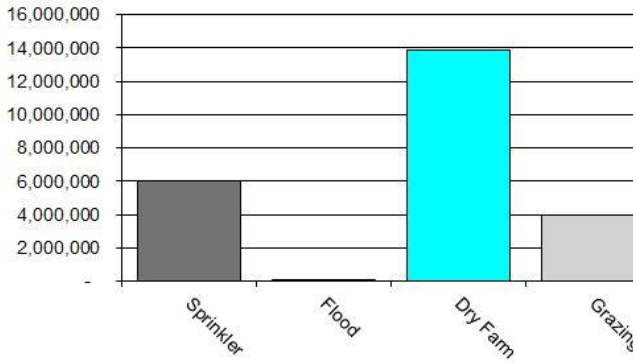
None

AGRICULTURAL LAND STUDY

Acres By Subclass



Value By Subclass



Agricultural Land

County records were reviewed to determine major land categories such as irrigated farm, dry farm, meadow hay, grazing and other lands. In addition, county records were reviewed in order to determine if: Aerial photographs are available and are being used; soil conservation guidelines have been used to classify lands based on productivity; crop rotations have been documented; typical commodities and yields have been determined; orchard lands have been properly classified and valued; expenses reflect a ten year average and are typical landlord expenses; grazing lands have been properly classified and valued; the number of acres in each class and subclass have been determined; the capitalization rate was properly applied. Also, documentation was required for the valuation methods used and any locally developed yields, carrying capacities, and expenses. Records were also checked to ensure that the commodity prices and expenses, furnished by the Property Tax Administrator (PTA), were applied properly. (See Assessor Reference Library Volume 3 Chapter 5.)

Conclusions

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

Baca 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	86,332	63.99	5,524,321	5,594,081	0.99
4117	Flood	1,724	68.63	118,319	120,144	0.98
4127	Dry Farm	713,730	17.73	12,654,078	12,838,970	0.99
4147	Grazing	581,863	6.87	3,994,795	3,994,795	1.00
Total/Avg		**1,383,649**	**16.11**	**22,291,514**	**22,547,991**	**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

Baca 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

Baca 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.:

- Field Inspections
- In-Person Interviews with Owners/Tenants
- Personal Knowledge of Occupants at Assessment Date

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

- Field Inspections
- Phone Interviews
- In-Person Interviews with Owners/Tenants
- Written Correspondence other than Questionnaire
- Personal Knowledge of Occupants at Assessment Date

Baca 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 Baca County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically WRA selected 34 sales listed as unqualified.

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

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

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

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

conducted further analysis to determine if the sales included in that code have been assigned appropriately.

Conclusions

Baca County appears to be doing an adequate 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

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

Baca County is exempt from the Vacant Land Subdivision Discount Study.

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.

Baca County has been reviewed for their procedures and adherence to guidelines when assessing and valuing agricultural 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

Baca 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

Baca 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.

Baca 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
- School publications
- Social media
- Word of mouth

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

Baca 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
- Accounts protested with substantial disagreement

Conclusions

Baca 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

Harry J. Fuller, *Audit Project Manager*

Suzanne Howard, *Audit Administrative Manager*

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

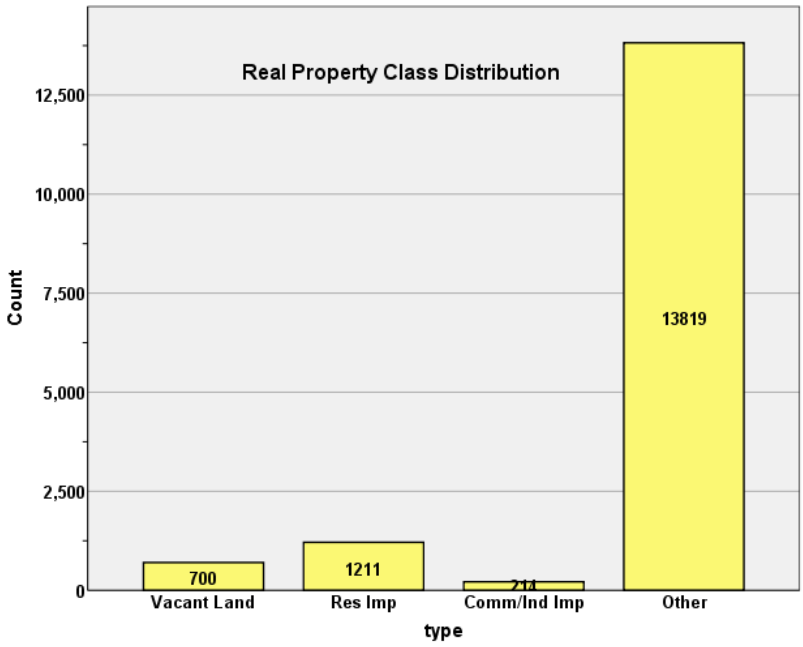
J. Andrew Rodriguez, *Field Analyst*

APPENDICES

STATISTICAL COMPLIANCE REPORT
FOR BACA COUNTY
2022

I. OVERVIEW

Baca County is an agricultural county located in southeastern Colorado. The county has a total of 15,944 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:



Based on the number of vacant land parcels in Baca County, we were not required to analyze this class of property for audit compliance.

For residential improved properties, single family properties accounted for 97.6% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial sales accounted for 1.3% of all such properties in this county.

Based on the Audit questionnaire provided by the assessor, there were insufficient sales to analyze the sales ratio by economic area or neighborhood.

II. DATA FILES

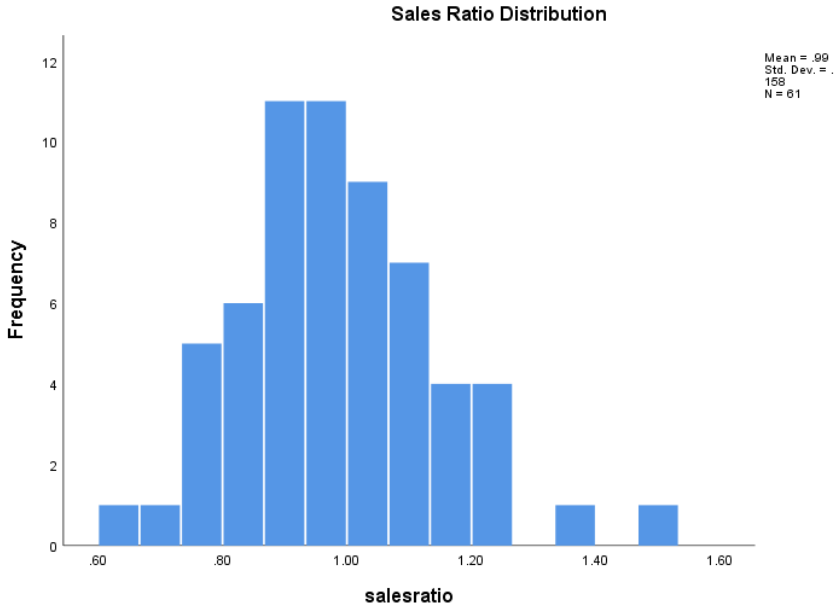
The following sales analyses were based on the requirements of the 2022 Colorado Property Assessment Study. Information was provided by the Baca Assessor's Office in April 2022. The data included all 5 property record files as specified by the Auditor.

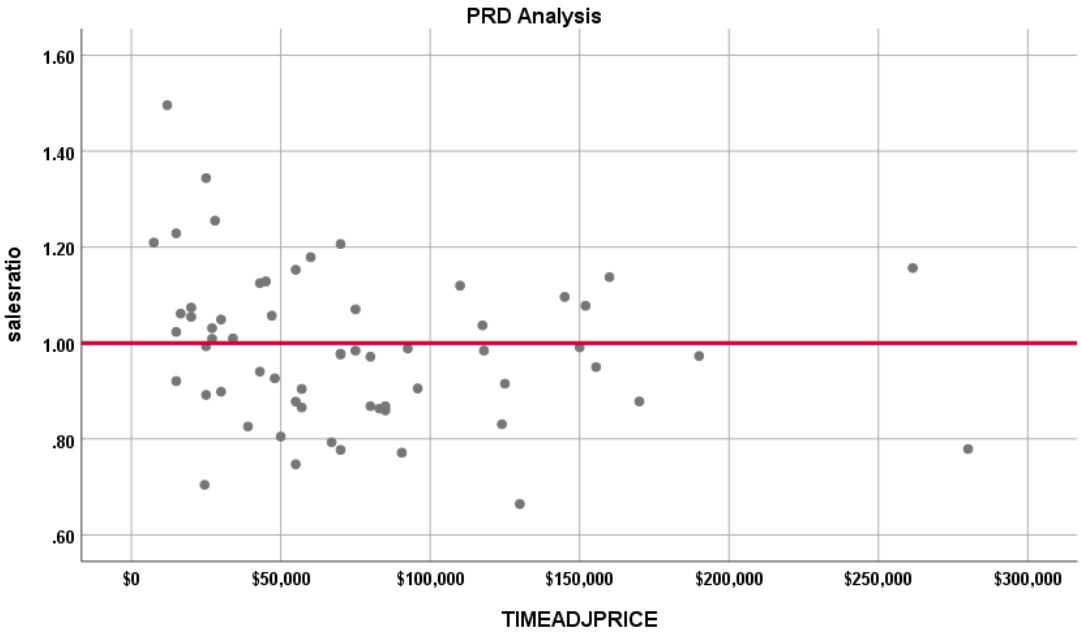
III. RESIDENTIAL SALES RESULTS

A total of 63 qualified sales for the 24-month period ending June 30, 2020 were analyzed for compliance. We trimmed two sales using IAAO standards, resulting in 61 total qualified sales, with the following results:

Median	**0.984**
Price Related Differential	**1.024**
Coefficient of Dispersion	**12.3**

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 all of these properties:

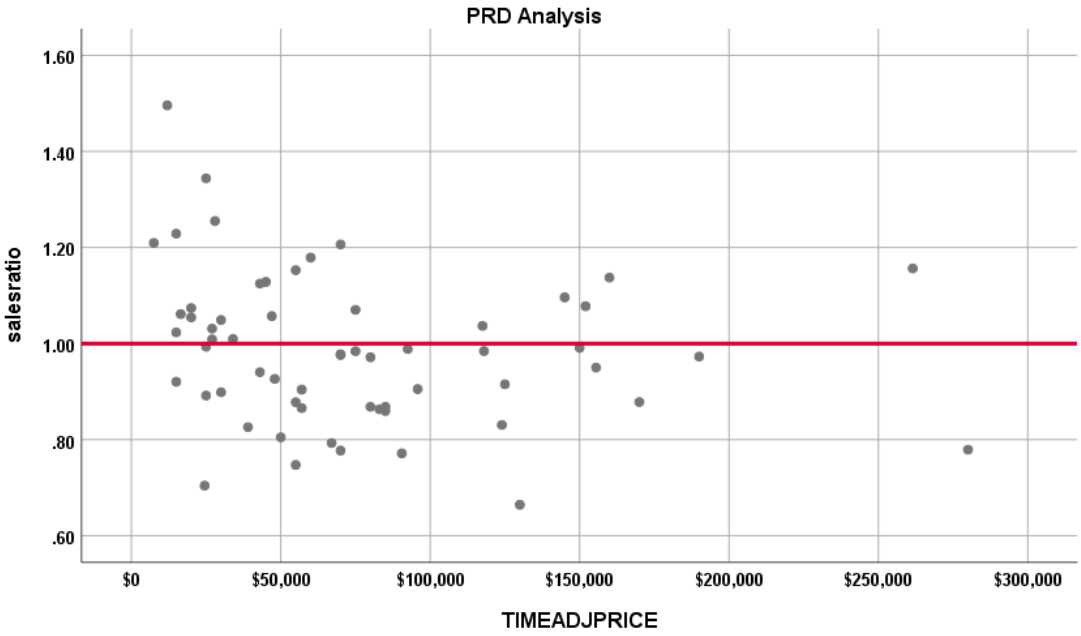




Subclass 1212 PRD Analysis

We next analyzed residential properties identified as 1212 using the state abstract code system (Baca County technically uses the land code 11120 for 1212 properties in the sale file). 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 1.026, 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	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.993	.033		29.872	.000
	CURRTOT	-.000000102	.000	-.037	-.282	.779

a. Dependent Variable: salesratio

The slope of the line at 0.00000012 indicates that there is virtually no slope in the regression line, which indicates that sales ratios are similar across the entire sale price array.

We also stratified the sales ratio analysis by the sale price range, as follows:

Case Processing Summary

		Count	Percent
SPRec	LT $25K	12	20.0%
	$25K to $50K	13	21.7%
	$50K to $100K	21	35.0%
	$100K to $150K	7	11.7%
	$150K to $200K	5	8.3%
	$200K to $300K	2	3.3%
Overall		60	100.0%
Excluded		0	
Total		60	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	1.058	1.027	.144	20.2%
$25K to $50K	1.010	1.008	.095	12.5%
$50K to $100K	.904	1.004	.112	14.9%
$100K to $150K	.984	.997	.104	15.9%
$150K to $200K	.973	1.003	.080	11.2%
$200K to $300K	.968	1.007	.195	27.6%
Overall	.981	1.026	.124	16.1%

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

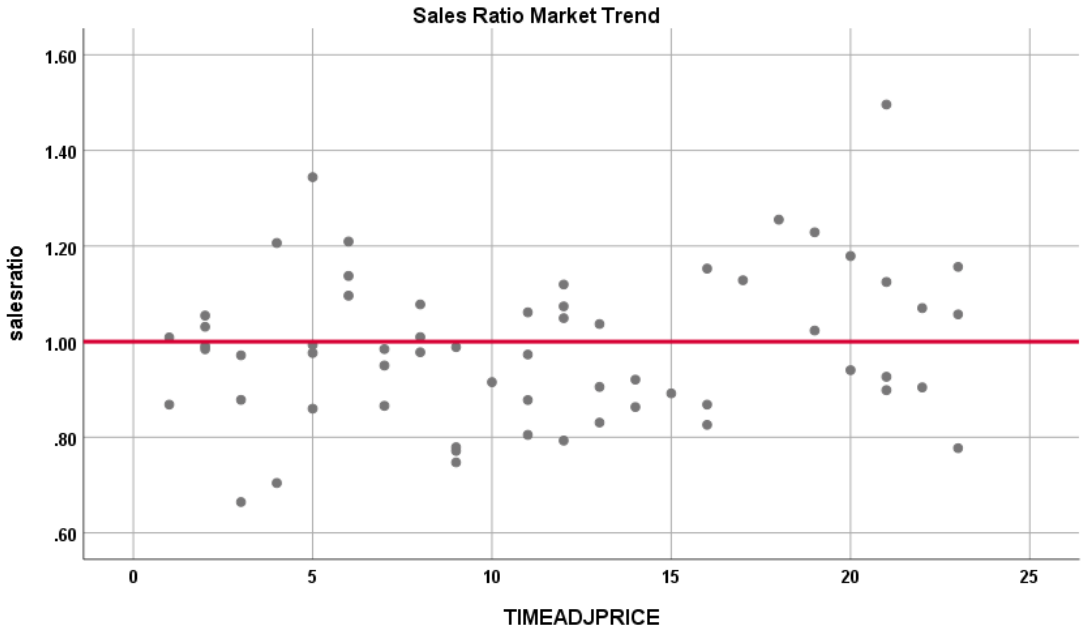
Residential Market Trend Analysis

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

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.939	.039		23.841	.000
	SalePeriod	.004	.003	.185	1.445	.154

a. Dependent Variable: salesratio



The above analysis indicated that no market trend was present in the sale ratio data. We concur with the assessor that no market trend adjustments were warranted.

Sold/Unsold Analysis

In terms of the valuation consistency between sold and unsold residential properties, we compared the median change in value between taxable years 2018 and 2020 between each group, as follows:

Report

DIFF

sold	N	Median	Mean
UNSOLD	1150	1.00	1.12
SOLD	61	1.01	1.12

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	.144	Retain the null hypothesis.

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

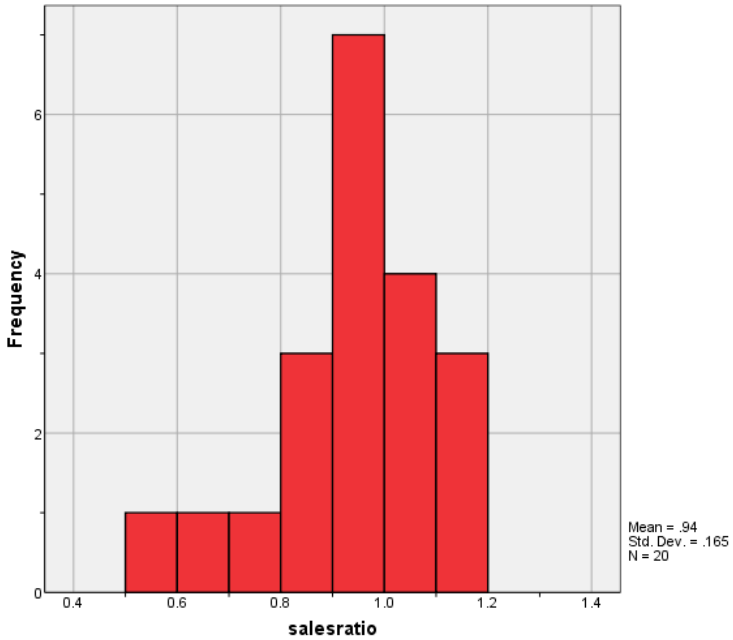
IV. COMMERCIAL/INDUSTRIAL SALE RESULTS

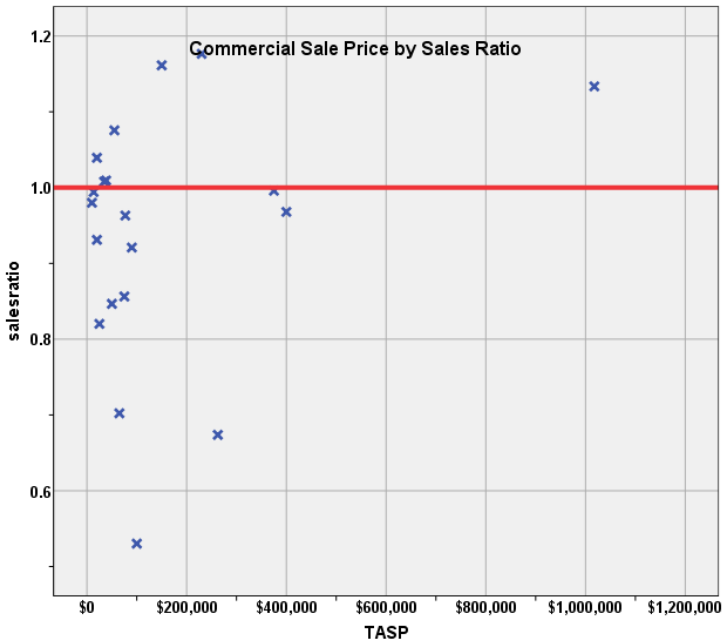
A total of 18 **valid and qualified sales** were identified in the five year period prior to June 30, 2020. Because there were fewer than 20 sales, 2 supplemental appraisals were completed, bringing the commercial property total to 20 properties for the sales ratio analysis. The 18 sales will be used to analyze market trending and sold/unsold properties.

The following ratio analysis was completed as follows:

Median	**.974**
Price Related Differential	**0.938**
Coefficient of Dispersion	**12.1**

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





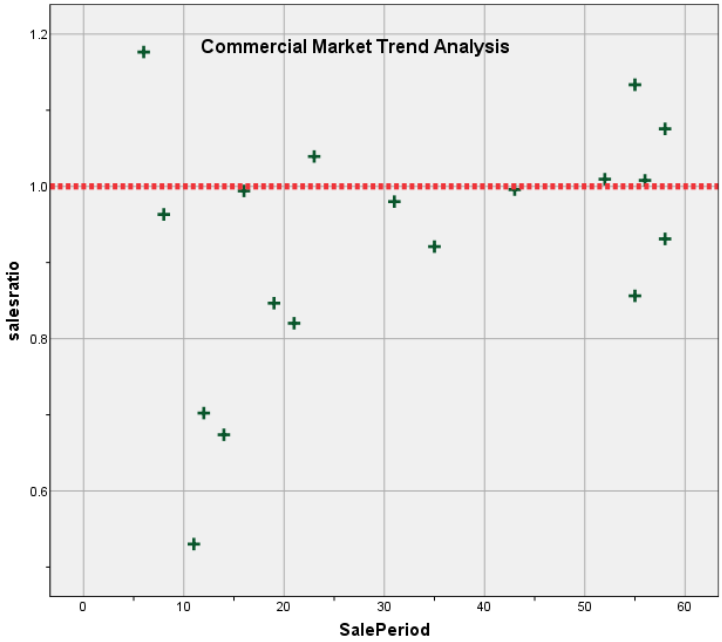
Commercial Market Trend Analysis

The 18 sales were analyzed next to verify that the assessor properly applied market trend adjustments to the commercial sales:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.821	.072		11.466	.000
	SalePeriod	.003	.002	.391	1.701	.108

a. Dependent Variable: salesratio



The above analysis indicated that no market trend was present in the commercial/industrial sale ratio data; therefore, we concluded that the Baca County assessor has adequately considered market trending in their commercial/industrial valuation.

Sold/Unsold Analysis

We compared the median and mean change in value for taxable years 2018 and 2020 between sold and unsold commercial properties to determine if the assessor was valuing each group consistently. While this is a challenge to prove in this county, given the small number of sales and the overall small number and diversity of commercial/industrial properties in general, the following results indicate that both groups were valued in a consistent manner:

Report

DIFF

sold	N	Median	Mean
UNSOLD	197	1.03	1.39
SOLD	18	1.05	1.19

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	.965	Retain the null hypothesis.

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

V. CONCLUSIONS

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

STATISTICAL ABSTRACT

Residential

Ratio Statistics for CURRTOT / TASP												
	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
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
.988	.947	1.028	.984	.921	1.031	96.0%	.964	.918	1.011	1.024	.123	15.9%

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

Commercial/Industrial

Ratio Statistics for CURRTOT / TASP												
	95% Confidence Interval for Mean			95% Confidence Interval for Median				95% Confidence Interval for Weighted Mean				Coefficient of Variation
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
.939	.862	1.016	.974	.856	1.009	95.9%	1.002	.881	1.123	.938	.121	17.5%

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

Not applicable

Residential Median Ratio Stratification

Sub Class

Case Processing Summary

		Count	Percent
ABSTRIMP	1212	58	95.1%
	1215	1	1.6%
	1235	2	3.3%
Overall		61	100.0%
Excluded		0	
Total		61	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1212	.984	1.026	.123	16.1%
1215	1.120	1.000	.000	.
1235	.856	1.036	.099	14.0%
Overall	.984	1.024	.123	16.0%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	57	93.4%
	50 to 75	1	1.6%
	5 or Newer	3	4.9%
Overall		61	100.0%
Excluded		0	
Total		61	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.984	1.020	.120	15.7%
50 to 75	.868	1.000	.000	.
5 or Newer	.878	1.014	.173	26.0%
Overall	.984	1.024	.123	16.0%

Quality

Case Processing Summary

		Count	Percent
QUALITY	02	1	1.6%
	03	7	11.5%
	04	8	13.1%
	05	25	41.0%
	06	19	31.1%
	14	1	1.6%
Overall		61	100.0%
Excluded		0	
Total		61	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
02	.898	1.000	.000	.
03	1.023	1.063	.162	24.5%
04	1.020	1.001	.066	9.3%
05	.989	1.014	.157	18.3%
06	.973	1.012	.077	10.7%
14	1.153	1.000	.000	.
Overall	.984	1.024	.123	16.0%

Condition

Case Processing Summary

		Count	Percent
CONDITION	1943	1	1.6%
	1945	3	4.9%
	1947	2	3.3%
	1950	1	1.6%
	1951	1	1.6%
	1952	1	1.6%
	1955	4	6.6%
	1958	2	3.3%
	1960	2	3.3%
	1961	1	1.6%
	1962	2	3.3%
	1963	1	1.6%
	1964	1	1.6%
	1965	3	4.9%
	1968	1	1.6%
	1969	1	1.6%
	1970	1	1.6%
	1972	1	1.6%
	1973	2	3.3%
	1974	1	1.6%
	1975	4	6.6%
	1977	1	1.6%
	1978	4	6.6%

	1980	5	8.2%
	1981	1	1.6%
	1982	2	3.3%
	1983	1	1.6%
	1984	2	3.3%
	1985	1	1.6%
	1986	1	1.6%
	1988	1	1.6%
	1990	2	3.3%
	1992	1	1.6%
	1995	1	1.6%
	1998	1	1.6%
	2009	1	1.6%
Overall		61	100.0%
Excluded		0	
Total		61	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
1943	1.054	1.000	.000	.
1945	1.255	1.009	.076	13.8%
1947	1.027	.999	.004	0.5%
1950	.704	1.000	.000	.
1951	.993	1.000	.000	.
1952	1.049	1.000	.000	.
1955	1.035	.997	.050	7.1%
1958	.895	1.000	.004	0.5%
1960	1.027	1.095	.196	27.7%
1961	1.344	1.000	.000	.
1962	.902	1.014	.172	24.3%
1963	1.128	1.000	.000	.
1964	.793	1.000	.000	.
1965	.805	1.051	.088	13.9%
1968	.868	1.000	.000	.
1969	.860	1.000	.000	.
1970	1.125	1.000	.000	.
1972	.863	1.000	.000	.
1973	.980	1.000	.004	0.6%
1974	1.070	1.000	.000	.
1975	.952	.987	.103	16.4%
1977	.868	1.000	.000	.
1978	.986	1.007	.064	10.9%
1980	.991	1.015	.068	10.7%
1981	1.120	1.000	.000	.
1982	.926	.997	.051	7.2%
1983	.831	1.000	.000	.
1984	.928	1.007	.014	1.9%
1985	1.096	1.000	.000	.
1986	1.010	1.000	.000	.
1988	1.037	1.000	.000	.
1990	.841	.988	.076	10.8%
1992	1.137	1.000	.000	.
1995	.771	1.000	.000	.
1998	.779	1.000	.000	.

2009	1.156	1.000	.000	.
Overall	.984	1.024	.123	16.0%

Commercial Median Ratio Stratification

Sale Price

Case Processing Summary

		Count	Percent
SPRec	LT $25K	5	25.0%
	$25K to $50K	3	15.0%
	$50K to $100K	6	30.0%
	$100K to $150K	1	5.0%
	$200K to $300K	2	10.0%
	$300K to $500K	2	10.0%
	Over $1,000K	1	5.0%
Overall		20	100.0%
Excluded		0	
Total		20	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT $25K	.980	1.014	.058	9.1%
$25K to $50K	1.008	1.013	.054	11.3%
$50K to $100K	.889	1.025	.163	22.8%
$100K to $150K	1.161	1.000	.000	.
$200K to $300K	.925	1.018	.272	38.4%
$300K to $500K	.982	1.000	.014	2.0%
Over $1,000K	1.134	1.000	.000	.
Overall	.974	.938	.121	17.3%

Sub Class

Case Processing Summary

		Count	Percent
ABSTRIMP	0	1	5.0%
	1714	1	5.0%
	2212	8	40.0%
	2220	4	20.0%
	2221	1	5.0%
	2230	3	15.0%
	2235	2	10.0%
Overall		20	100.0%
Excluded		0	
Total		20	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.530	1.000	.000	.
1714	.963	1.000	.000	.
2212	1.009	.940	.055	8.3%
2220	.956	.977	.032	3.8%
2221	1.176	1.000	.000	.
2230	.702	1.018	.231	46.3%
2235	.838	.989	.022	3.0%
Overall	.974	.938	.121	17.3%

Age

Case Processing Summary

		Count	Percent
AgeRec	Over 100	11	55.0%
	25 to 50	1	5.0%
	5 or Newer	8	40.0%
Overall		20	100.0%
Excluded		0	
Total		20	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
Over 100	.980	1.079	.107	18.1%
25 to 50	.968	1.000	.000	.
5 or Newer	.958	.929	.156	19.0%
Overall	.974	.938	.121	17.3%

Improvement Quality

Case Processing Summary

		Count	Percent
QUALITY		2	10.0%
	01	2	10.0%
	02	6	30.0%
	03	1	5.0%
	04	8	40.0%
	05	1	5.0%
Overall		20	100.0%
Excluded		0	
Total		20	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.749	.851	.292	41.3%
01	1.024	1.004	.015	2.2%
02	.987	.933	.119	17.7%
03	1.176	1.000	.000	.
04	.889	1.000	.105	13.3%
05	.996	1.000	.000	.
Overall	.974	.938	.121	17.3%

Improvement Condition

Case Processing Summary

		Count	Percent
CONDITION	0	1	5.3%
	1941	1	5.3%
	1950	2	10.5%
	1958	1	5.3%
	1960	1	5.3%
	1964	1	5.3%
	1965	1	5.3%
	1972	1	5.3%
	1975	1	5.3%
	1976	2	10.5%
	1980	2	10.5%
	1985	1	5.3%
	1986	1	5.3%
	2008	1	5.3%
	2012	1	5.3%
	2013	1	5.3%
Overall		19	100.0%
Excluded		1	
Total		20	

Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.530	1.000	.000	.
1941	1.039	1.000	.000	.
1950	.900	1.040	.089	12.6%
1958	.931	1.000	.000	.
1960	.963	1.000	.000	.
1964	.994	1.000	.000	.
1965	.847	1.000	.000	.
1972	1.076	1.000	.000	.
1975	.856	1.000	.000	.
1976	.965	1.019	.046	6.5%
1980	.688	1.013	.021	2.9%
1985	1.176	1.000	.000	.
1986	1.008	1.000	.000	.
2008	1.134	1.000	.000	.
2012	1.161	1.000	.000	.
2013	.996	1.000	.000	.
Overall	.980	.932	.126	17.8%

Vacant Land Median Ratio Stratification

Not applicable