



2023  
SAGUACHE COUNTY  
PROPERTY ASSESSMENT  
STUDY

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September 15, 2023

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

**RE: Final Report for the 2023 Colorado Property Assessment Study**

Dear Ms. Castle:

East West Econometrics - Audit Division is pleased to submit the Final Reports for the 2023 Colorado Property Assessment Study.

These reports are the result of two analyses: A procedural audit and a statistical audit.

The procedural audit examines all classes of locally assessed property. It specifically looks at how the assessor develops economic areas, confirms and qualifies sales, develops time adjustments and performs periodic physical property inspections. The audit reviews the procedures for determining subdivision absorption and subdivision discounting. Valuation methodology is examined for residential properties and commercial properties. Procedures are reviewed for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests, and non-producing patented mining claims.

Statistical audits are performed on vacant land, residential properties, commercial/industrial properties and agricultural land. A statistical analysis is performed for personal property compliance on the eleven largest counties: Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld. The remaining counties receive a personal property procedural study.

East West Econometrics – Audit Division appreciates the opportunity to be of service to the State of Colorado. Please contact us with any questions or concerns.

A handwritten signature in black ink that reads "Harry J. Fuller".

Harry J. Fuller  
Project Manager  
East West Econometrics – Audit Division

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# INTRODUCTION

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## Colorado

The State Board of Equalization (SBOE) reviews assessments for conformance to the Constitution. The SBOE will order revaluations for counties whose valuations do not reflect the proper valuation period level of value.

The statutory basis for the audit is found in C.R.S. 39-1-104 (16)(a)(b) and (c).

The legislative council sets forth two criteria that are the focus of the audit group:

To determine whether each county assessor is applying correctly the constitutional and statutory provisions, compliance requirements of the State Board of Equalization, and the manuals published by the State Property Tax Administrator to arrive at the actual value of each class of property.

To determine if each assessor is applying correctly the provisions of law to the actual values when arriving at valuations for assessment of all locally valued properties subject to the property tax.

The property assessment audit conducts a two-part analysis: A procedural analysis and a statistical analysis.

The procedural analysis includes all classes of property and specifically looks at how the assessor develops economic areas, confirms and qualifies sales, and develops time adjustments. The audit also examines the procedures for adequately discovering, classifying and valuing agricultural outbuildings, discovering subdivision build-out and subdivision discounting procedures. Valuation methodology for vacant land, improved residential properties and commercial properties is examined. Procedures for producing mines, oil and gas leaseholds and lands producing, producing coal mines, producing earth and stone products, severed mineral interests and non-producing patented mining claims are also reviewed.

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

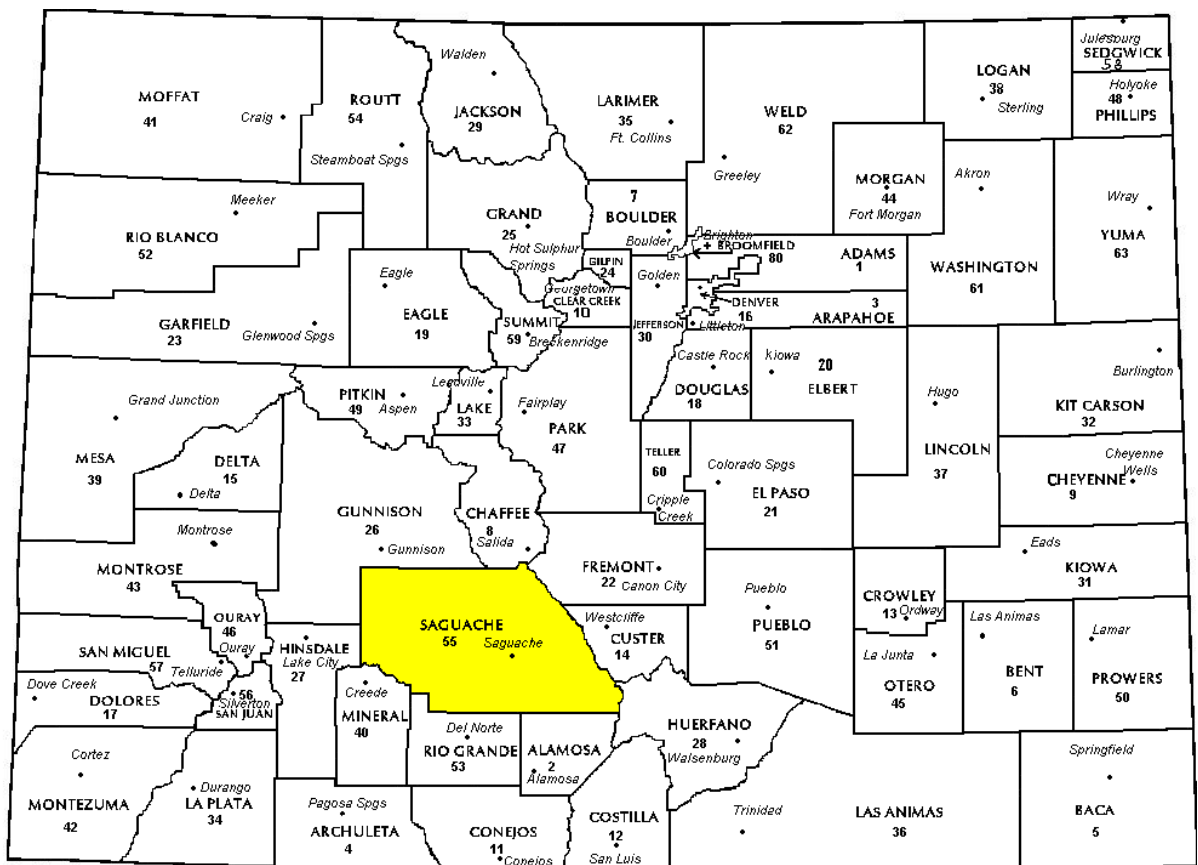
East West Econometrics Audit has completed the Property Assessment Study for 2023 and is pleased to report its findings for Saguache County in the following report.

# REGIONAL/HISTORICAL SKETCH OF SAGUACHE COUNTY

## Regional Information

Saguache County is located in the San Luis Valley region of Colorado. The San Luis Valley is a large, broad, alpine valley in the Rio Grande Basin of south-central Colorado. The valley is drained to the south by the Rio Grande

River which rises in the San Juan Mountains to the west of the valley. The San Luis Valley includes Alamosa, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.



## Historical Information

Saguache County has approximately 3,168.5 square miles and an estimated population of approximately 6,824 people with 1.9 people per square mile, according to the U.S. Census Bureau's 2020 estimated census data. This represents an 11.7 percent change from April 1, 2010 to July 1, 2019.

Saguache is the northern gateway to the San Luis Valley in South Central Colorado. It sits at an elevation of 7800 feet, surrounded by the Sangre de Cristo mountain range on the east and the San Juan range on the west. Many of the peaks are 14000 feet.

Saguache is a Ute Indian name pronounced Sawatch. It means Water at the Blue Earth. It was settled in 1867 by Otto Mears who started his fortune with the first toll road above Poncha Pass. Otto invested in railroads, mining, the

Mack Truck Co. and is credited with the famous Million Dollar Highway.

Ranching and farming are the main occupations in the Valley. Both cattle and sheep are raised, cattle being predominant. Farm crops include potatoes, lettuce and barley. Some logging is done on Forest Service land.

Artists and craft people are numerous in the area. Potters, authors, photographers, weavers, basket makers, and painters are but a few who live in the county. Festivals take place in the County in both summer and winter months, with the Crestone Music Festival in August, the Fall festival in September in Saguache and the Winterfest in Crestone through the Thanksgiving weekend.

*(<http://saguache.org>)*

# RATIO ANALYSIS

## Methodology

All significant classes of property were analyzed. Sales were collected for each property class over the eighteen month period from January 1, 2021 through June 30th, 2022. Property classes with less than thirty sales had the sales period extended in six month increments up to an additional forty-two months. If this extended sales period did not produce the minimum thirty qualified sales, the Audit performed supplemental appraisals to reach the minimum.

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

every case, we examined the loss in data from trimming to ensure that only true outliers were excluded. Any county with a significant portion of sales excluded by this trimming method was examined further. No county was allowed to pass the audit if more than 5% of the sales were “lost” because of trimming.

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

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

## Conclusions

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

<b>ALLOWABLE STANDARDS RATIO GRID</b>		
<b>Property Class</b>	<b>Unweighted Median Ratio</b>	<b>Coefficient of Dispersion</b>
Commercial/Industrial	Between .95-1.05	Less than 20.99
Residential Condominium	Between .95-1.05	Less than 15.99
Residential	Between .95-1.05	Less than 15.99
Vacant Land	Between .95-1.05	Less than 20.99

The results for Saguache County are:

Saguache County Ratio Grid						
Property Class	Number of Qualified Sales	Unweighted Median Ratio	Price Related Differential	Coefficient of Dispersion	Time Trend Analysis	
*Commercial/Industrial	25	0.994	1.003	16.1	Compliant	
Residential	216	0.970	1.014	15.1	Compliant	
Vacant Land	302	0.962	1.068	20	Compliant	

*\*County Sales File augmented by 5 supplemental appraisals*

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

Saguache 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.

<b>Sold/Unsold Results</b>	
<b>Property Class</b>	<b>Results</b>
Commercial/Industrial	Compliant
Residential	Compliant
Vacant Land	Compliant

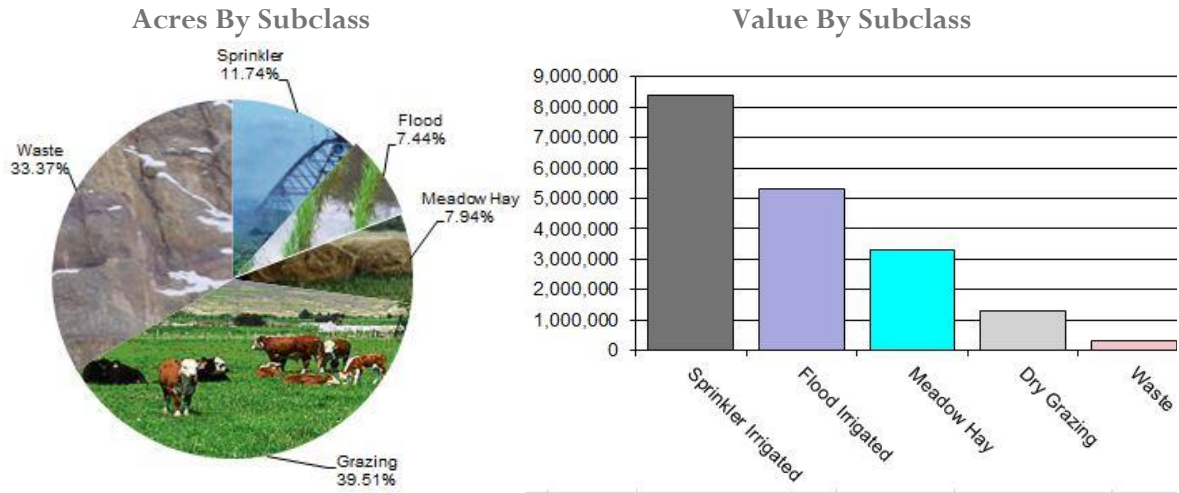
### **Conclusions**

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

### **Recommendations**

None

# AGRICULTURAL LAND STUDY



## 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:

<b>Saguache County Agricultural Land Ratio Grid</b>						
<b>Abstract Code</b>	<b>Land Class</b>	<b>Number Of Acres</b>	<b>County Value Per Acre</b>	<b>County Assessed Total Value</b>	<b>WRA Total Value</b>	<b>Ratio</b>
4107	Sprinkler	48,055	174.86	8,402,661	8,595,110	0.98
4117	Flood	30,469	174.52	5,317,500	5,640,307	0.94
4137	Meadow Hay	32,506	101.86	3,310,939	3,317,525	1.00
4147	Grazing	161,745	8.13	1,314,517	1,314,517	1.00
4167	Waste	136,605	2.19	298,913	298,913	1.00
<b>Total/ Avg</b>		<b>409,380</b>	<b>45.54</b>	<b>18,644,529</b>	<b>19,166,371</b>	<b>0.97</b>

### 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.

of Property Taxation for the valuation of agricultural outbuildings.

### Recommendations

None

### Conclusions

Saguache County has substantially complied with the procedures provided by the Division

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## Agricultural Land Under Improvements

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### 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

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

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

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

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

Saguache County has substantially complied with the procedures provided by the Division of Property Taxation for the valuation of land under residential improvements that may or may not be integral to an agricultural operation.

### Recommendations

None

## SALES VERIFICATION

According to Colorado Revised Statutes:

*A representative body of sales is required when considering the market approach to appraisal.*

*(8) In any case in which sales prices of comparable properties within any class or subclass are utilized when considering the market approach to appraisal in the determination of actual value of any taxable property, the following limitations and conditions shall apply:*

*(a)(I) Use of the market approach shall require a representative body of sales, including sales by a lender or government, sufficient to set a pattern, and appraisals shall reflect due consideration of the degree of comparability of sales, including the extent of similarities and dissimilarities among properties that are compared for assessment purposes. In order to obtain a reasonable sample and to reduce sudden price changes or fluctuations, all sales shall be included in the sample that reasonably reflect a true or typical sales price during the period specified in section 39-1-104 (10.2). Sales of personal property exempt pursuant to the provisions of sections 39-3-102, 39-3-103, and 39-3-119 to 39-3-122 shall not be included in any such sample.*

*(b) Each such sale included in the sample shall be coded to indicate a typical, negotiated sale, as screened and verified by the assessor. (39-1-103, C.R.S.)*

*The assessor is required to use sales of real property only in the valuation process.*

*(8)(f) Such true and typical sales shall include only those sales which have been determined on an individual basis to reflect the selling price of the real property only or which have been adjusted on an individual basis to reflect the selling price of the real property only. (39-1-103, C.R.S.)*

Part of the Property Assessment Study is the sales verification analysis. WRA has used the above-cited statutes as a guide in our study of the county's procedures and practices for verifying sales.

EWE reviewed the sales verification procedures in 2023 for Saguache County. This study was conducted by checking selected sales from the master sales list for the current valuation period. Specifically EWE selected 32 sales listed as unqualified.

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

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

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

When less than 50 percent of sales are qualified in any of the three property classes (residential, commercial, and vacant land), the contractor analyzed the reasons for disqualifying sales in any subclass that constitutes at least 20 percent of the class, either by number of properties or by value, from the prior year. The contractor has reviewed with the assessor any analysis indicating that sales data are

inadequate, fail to reflect typical properties, or have been disqualified for insufficient cause. In addition, the contractor has reviewed the disqualified sales by assigned code. If there appears to be any inconsistency in the coding, the contractor has conducted further analysis to determine if the sales included in that code have been assigned appropriately.

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

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

### **Conclusions**

Saguache County appears to be doing an adequate job of verifying their sales. EWE agreed with the county's reason for disqualifying each of the sales selected in the sample. There are no recommendations or suggestions.

### **Recommendations**

None



# ECONOMIC AREA REVIEW AND EVALUATION

## **Methodology**

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

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Saguache County is exempt from the Natural Resources Study.

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## VACANT LAND

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**Saguache County is exempt from the Vacant Land Subdivision  
Discount Study.**

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# 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.

Saguache 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

Saguache 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

Saguache 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.

Saguache County is compliant with the guidelines set forth in ARL Volume 5 regarding discovery procedures, using the following methods to discover personal property accounts in the county:

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

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

Saguache County submitted their personal property written audit plan and was current for the 2023 valuation period. The number and listing of businesses audited was also submitted and was in conformance with the written audit plan. The following audit triggers were used by the county to select accounts to be audited:

- 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 \$52,000 actual value exemption status
- Accounts protested with substantial disagreement

### **Conclusions**

Saguache County has employed adequate discovery, classification, documentation, valuation, and auditing procedures for their personal property assessment and is in statistical compliance with SBOE requirements.

### **Recommendations**

None

# EAST WEST ECONOMETRICS AUDITOR STAFF

**Harry J. Fuller**, *Audit Project Manager*

**Suzanne Howard**, *Audit Administrative Manager*

**Steve Kane**, *Audit Statistician*

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

**J. Andrew Rodriguez**, *Field Analyst*

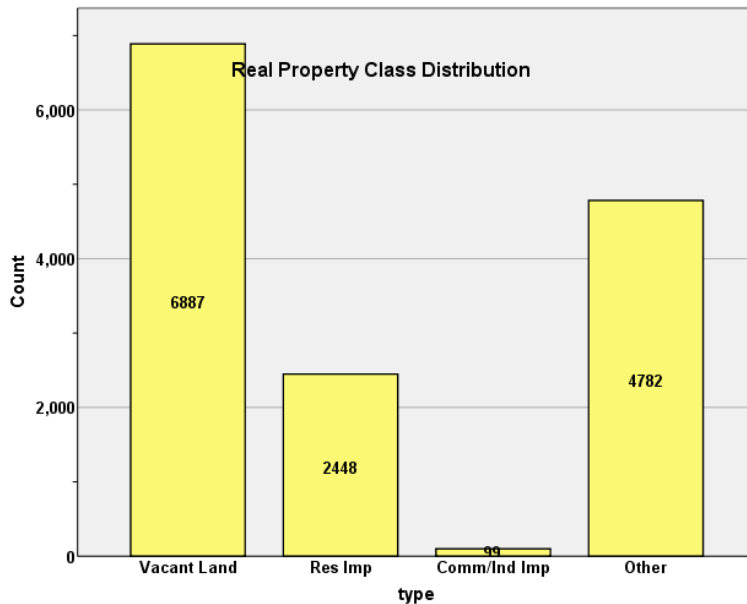
# STATISTICAL APPENDIX



**STATISTICAL COMPLIANCE REPORT  
FOR SAGUACHE COUNTY  
2023**

**I. OVERVIEW**

Saguache County is located in southern Colorado. The county has a total of 14,216 real property parcels, according to data submitted by the county assessor’s office in 2023. The following provides a breakdown of property classes for this county:



The vacant land class of properties was dominated by residential land. Residential lots (coded 100) accounted for 80.6% of all vacant land parcels.

For residential improved properties, single family properties accounted for 98.7% of all residential properties.

Commercial and industrial properties represented a much smaller proportion of property classes in comparison. Commercial/industrial properties accounted for less than 0.7% of all such properties in this county.

**II. DATA FILES**

The following sales analyses were based on the requirements of the 2023 Colorado Property Assessment Study. Information was provided by the Saguache Assessor’s Office in June 2023.

### III. RESIDENTIAL SALES RESULTS

There were 216 qualified residential sales in the 24-month sale period ending June 30, 2022. The sales ratio analysis results were as follows:

Median	<b>0.970</b>
Price Related Differential	<b>1.014</b>
Coefficient of Dispersion	<b>15.1</b>

We next stratified the sale ratio analysis by economic area and by neighborhoods with at least 10 sales, as follows:

#### Economic Area Case Processing Summary

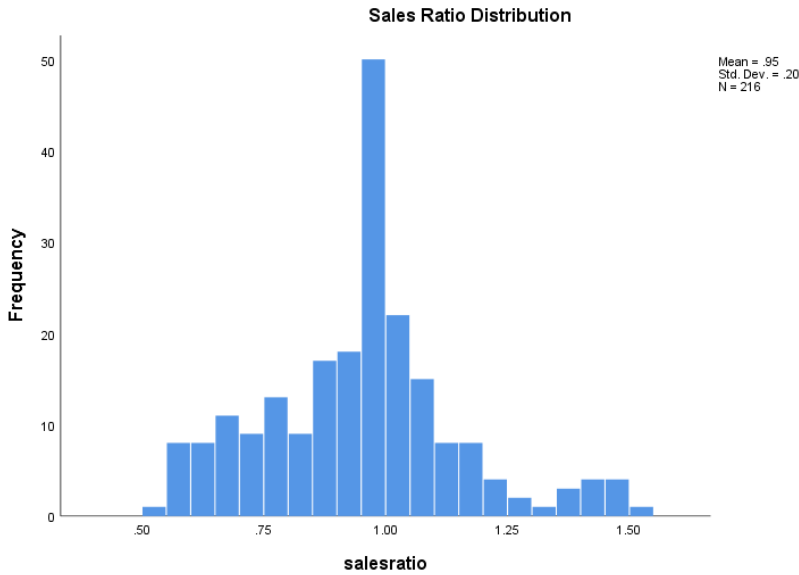
		Count	Percent
ECONAREA	1.00	26	12.6%
	2.00	22	10.7%
	3.00	95	46.1%
	4.00	10	4.9%
	5.00	53	25.7%
Overall		206	100.0%
Excluded		10	
Total		216	

#### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
1.00	.990	1.044	.179
2.00	.973	1.019	.135
3.00	.971	1.009	.164
4.00	.986	.993	.143
5.00	.960	1.019	.122
Overall	.970	1.016	.152

EA1 and EA3 had CODs over the SBOE maximum of 15.99, but trimming the EA1 and EA3 sales using IAAO guidelines resulted in the COD being in compliance. The other EAs were in compliance in terms of the median sales ratio and the COD.

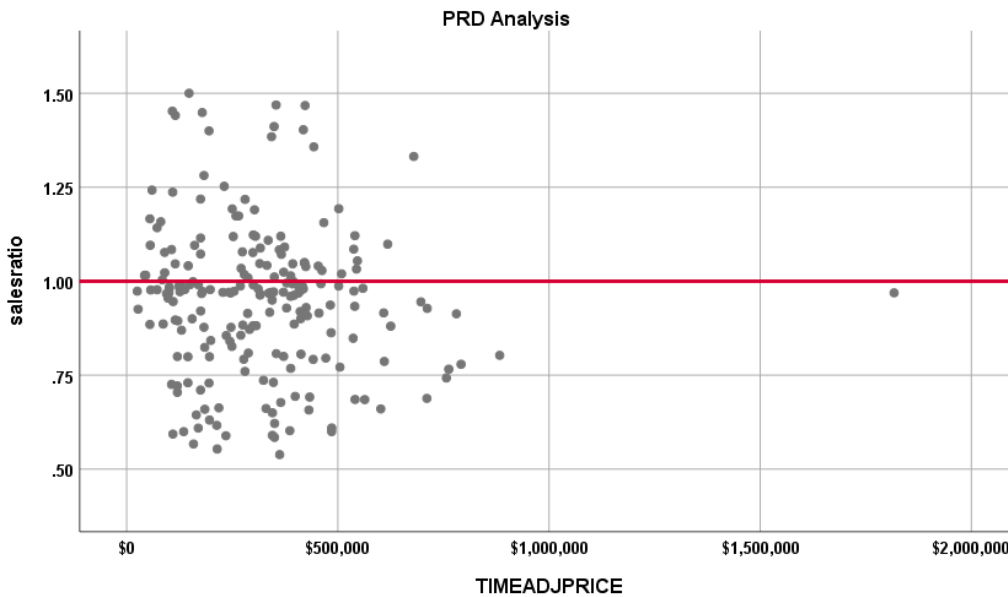
The above class-level ratio statistics were in compliance with the standards set forth by the Colorado State Board of Equalization (SBOE) for the overall residential sales. The following graph describes further the sales ratio distribution for these properties:



The above graph indicates 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:



The Price-Related Differential (PRD) for 1212 sales is 1.012, 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<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.884	.024		36.708	.000
	CURRTOT	.000000218	.000	.215	3.204	.002

a. Dependent Variable: salesratio

The slope of the line at 0.000000218 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 \$100K	19	8.9%
	\$100K to \$200K	54	25.2%
	\$200K to \$300K	34	15.9%
	\$300K to \$400K	48	22.4%
	\$400K to \$500K	30	14.0%
	Over \$500K	29	13.6%
Overall		214	100.0%
Excluded		0	
Total		214	

#### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion
LT \$100K	1.004	1.000	.074
\$100K to \$200K	.972	1.003	.177
\$200K to \$300K	.970	.993	.146
\$300K to \$400K	.969	1.002	.158
\$400K to \$500K	.971	1.004	.144
Over \$500K	.928	1.005	.141
Overall	.970	1.012	.150

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

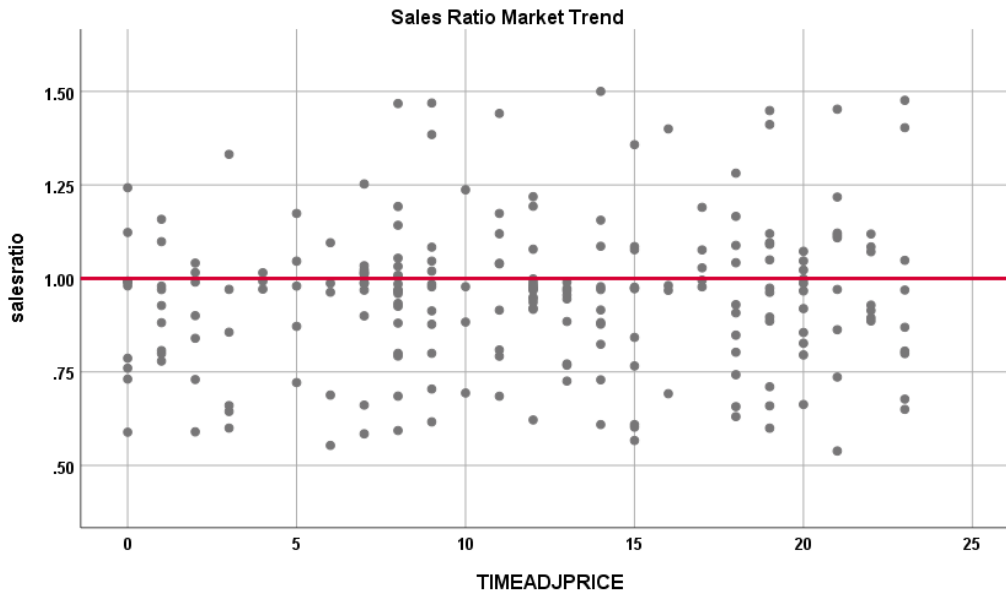
#### Residential Market Trend Analysis

We next analyzed the residential dataset using a 24-month sale period for any residual market trending, with the following results:

### Coefficients<sup>a</sup>

Model	Unstandardized Coefficients			Standardized	t	Sig.
	B	Std. Error	Beta			
1	(Constant)	.921	.028		33.169	.000
	SalePeriod	.003	.002	.086	1.261	.209

a. Dependent Variable: salesratio



The above analysis indicated 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 and mean change in actual value for valuation year 2020 and valuation year 2022 between sold and unsold residential properties. This analysis was stratified by class, economic area and neighborhood (with 5 or more sales), with the following results:

Class				
Report				
DIFF				
sold	N	Median	Mean	
UNSOLD	2235	1.70	2.04	
SOLD	216	1.72	2.07	

**Economic Area  
Report**

DIFF				
ECONAREA	sold	N	Median	Mean
1.00	UNSOLD	207	1.61	1.89
	SOLD	26	1.82	1.77
2.00	UNSOLD	467	2.04	2.13
	SOLD	22	2.22	2.34
3.00	UNSOLD	663	1.66	1.73
	SOLD	95	1.66	1.85
4.00	UNSOLD	171	1.77	2.09
	SOLD	10	1.70	2.56
5.00	UNSOLD	644	1.66	2.34
	SOLD	53	1.78	2.42

**Neighborhood (GE 5 Sales)**

DIFF				
NBHD	sold	N	Median	Mean
10200	UNSOLD	100	2.15	2.15
	SOLD	14	2.10	2.15
11200	UNSOLD	55	1.23	1.22
	SOLD	6	1.15	1.15
20322	UNSOLD	91	2.05	2.01
	SOLD	7	2.17	2.11
21321	UNSOLD	125	3.03	2.93
	SOLD	5	3.06	2.72
40230	UNSOLD	71	1.28	3.35
	SOLD	9	1.17	1.38
43000	UNSOLD	37	1.69	1.58
	SOLD	5	1.50	1.57
50311	UNSOLD	19	1.76	1.91
	SOLD	6	1.85	2.21
90510	UNSOLD	31	2.01	2.25
	SOLD	6	2.04	1.90
90511	UNSOLD	352	1.61	1.64
	SOLD	46	1.56	1.73
90512	UNSOLD	145	1.78	1.86
	SOLD	28	1.77	1.99
90514	UNSOLD	97	1.71	1.77
	SOLD	11	1.60	1.92

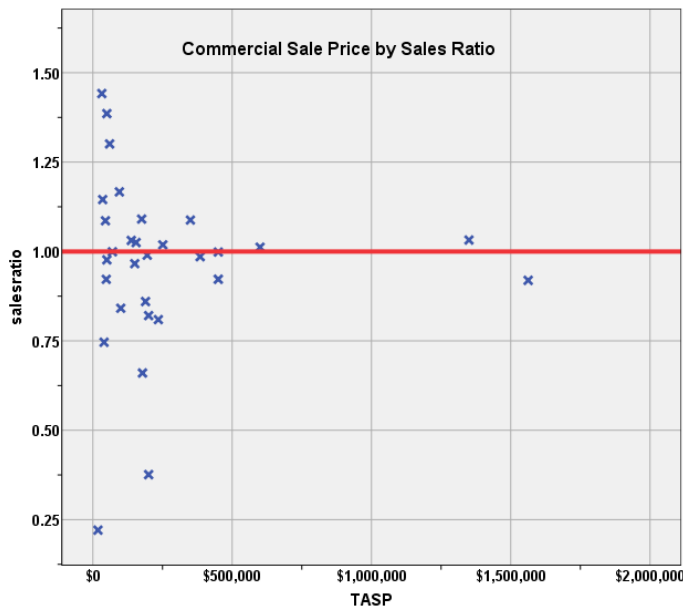
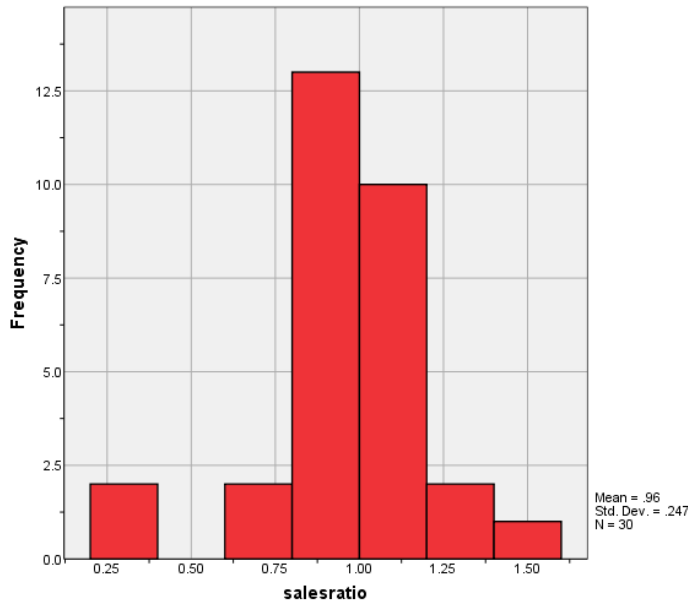
Based on the overall consistency in the above comparison analysis at the economic area and neighborhood levels, we concluded that the assessor has valued sold and unsold residential properties consistently.

**IV. COMMERCIAL/INDUSTRIAL SALE RESULTS**

There were 25 qualified residential sales for the 60-month sale period ending June 30, 2022. We augmented these sales with 5 supplemental appraisals, bringing the total commercial count to 30 properties for this analysis. Please note that the 25 sales were used exclusively for the market trend and sold/unsold analysis. The following are the results from the sales ratio analysis:

Median	<b>0.994</b>
Price Related Differential	<b>1.003</b>
Coefficient of Dispersion	<b>16.1</b>

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



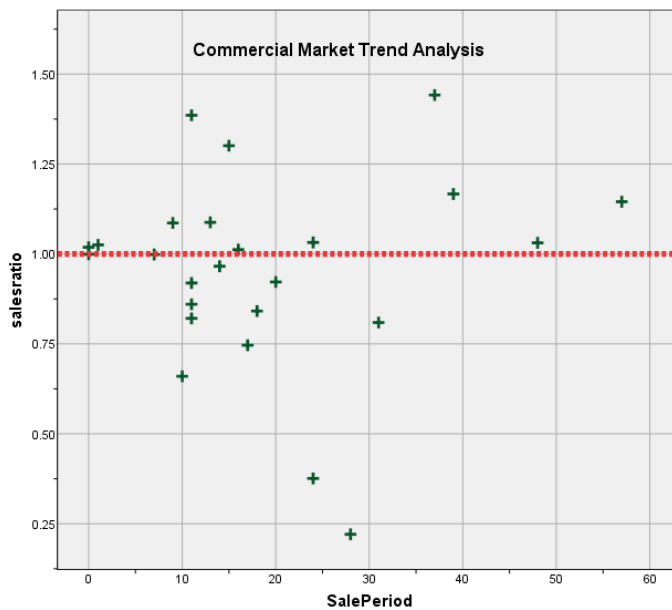
## Commercial Market Trend Analysis

The 25 commercial/industrial sales were analyzed for residual market trending, examining the sale ratios across the 60-month sale period with the following results:

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.933	.092		10.146	.000
	SalePeriod	.001	.004	.062	.299	.767

a. Dependent Variable: salesratio



The market trend results indicated no statistically significant trend. We concur that no market trend adjustments were warranted for properties in this class for Saguache County.

### Sold/Unsold Analysis

We compared the median and mean change in actual value between taxable year 2020 and taxable year 2022 for sold and unsold properties, as follows:

#### Report

DIFF	N	Median	Mean
UNSOLD	86	1.08	1.29
SOLD	21	1.25	1.71



### 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	.130	Retain the null hypothesis.

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

#### Report

DIFF	ABSTRIMPMajor	sold	N	Median	Mean
2212		UNSOLD	15	1.07	1.26
		SOLD	3	1.06	1.14
2230		UNSOLD	33	1.08	1.13
		SOLD	6	1.11	1.49

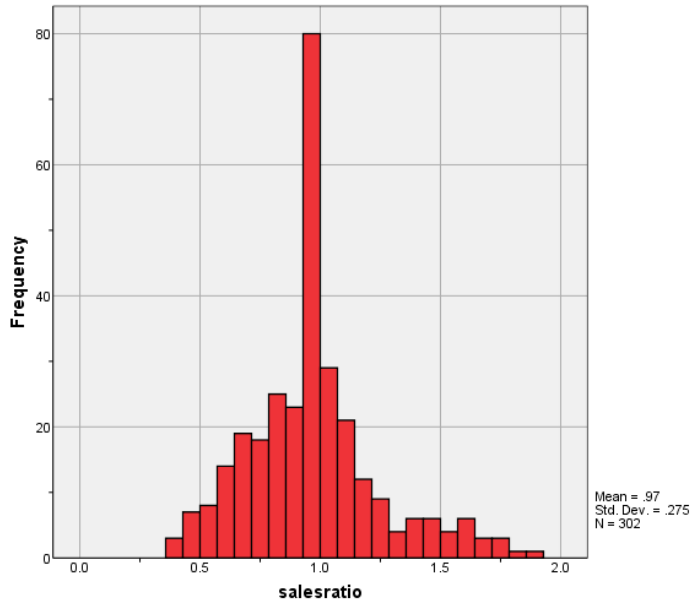
Based on the results from the Mann-Whitney test for significance and the stratified comparison, we concluded that sold and unsold commercial properties were valued consistently by the assessor.

#### V. VACANT LAND SALE RESULTS

There were 305 qualified vacant land sales in the 24-month sale period ending June 30, 2022. 3 sales were trimmed using IAAO standards, resulting in a total of 302 sales for this analysis. The sales ratio analysis results were as follows:

Median	<b>0.962</b>
Price Related Differential	<b>1.068</b>
Coefficient of Dispersion	<b>20.0</b>

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



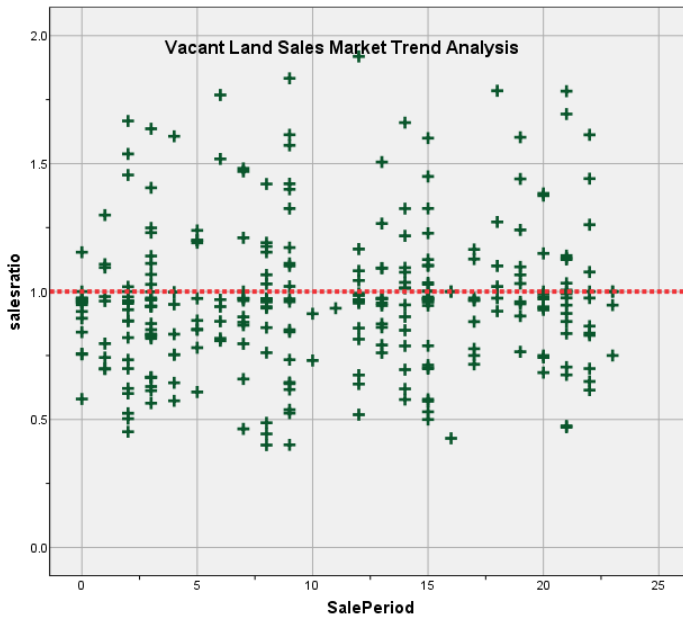
### Vacant Land Market Trend Analysis

We analyzed the sales ratios for vacant land sales, based on the time adjusted sale price (TASP) and the actual land value to determine if there was any residual time trending in the vacant land valuations. The vacant land sales were analyzed, examining the sales ratios across the 24 month sale period with the following results:

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.931	.029		32.554	.000
	SalePeriod	.004	.002	.090	1.565	.119

a. Dependent Variable: salesratio



The market trend analysis indicated no statistically significant trend. Based on these results, we concluded that the assessor has adequately considered market trending in their vacant land valuations.

### Sold/Unsold Analysis

We compared the median change in actual value for taxable year 2020 and taxable year 2022 vacant land properties to determine if sold and unsold properties were valued consistently, as follows:

#### Report

DIFF			
	N	Median	Mean
UNSOLD	5954	1.76	1.85
SOLD	260	2.40	2.25

We next stratified this analysis by subdivisions with at least 3 sales, as follows:

**Report**

DIFF

SUBDIVNO	sold	N	Median	Mean
150	UNSOLD	670	2.04	1.91
	SOLD	20	2.04	1.95
160	UNSOLD	105	1.82	1.40
	SOLD	6	1.82	1.45
485	UNSOLD	45	1.09	2.04
	SOLD	15	1.00	1.97
490	UNSOLD	183	1.67	1.41
	SOLD	6	1.67	1.44
510	UNSOLD	733	2.64	2.51
	SOLD	53	2.64	2.51
520	UNSOLD	566	2.40	2.41
	SOLD	46	2.40	2.42
540	UNSOLD	428	2.65	2.48
	SOLD	31	2.65	2.48
680	UNSOLD	21	2.08	2.01
	SOLD	6	2.08	2.36
705	UNSOLD	7	1.13	1.13
	SOLD	3	1.13	1.13
2042	UNSOLD	134	1.25	1.50
	SOLD	9	2.18	2.33

The above results indicated that sold vacant land properties were valued consistently with unsold vacant land properties for Saguache County.

## V. CONCLUSIONS

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

## STATISTICAL ABSTRACT

### Residential

#### Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
.951	.925	.978	.970	.950	.979	95.2%	.938	.910	.966	1.014	.151	21.0%

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

### Commercial

#### Ratio Statistics for CURRTOT / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
.961	.869	1.054	.994	.922	1.031	95.7%	.959	.906	1.011	1.003	.161	25.7%

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

### Vacant Land

#### Ratio Statistics for CURRLND / TASP

Mean	95% Confidence Interval for Mean		Median	95% Confidence Interval for Median			Weighted Mean	95% Confidence Interval for Weighted Mean		Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Mean Centered
	Lower Bound	Upper Bound		Lower Bound	Upper Bound	Actual Coverage		Lower Bound	Upper Bound			
.968	.937	.999	.962	.949	.971	95.6%	.906	.872	.940	1.069	.200	28.4%

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

## Residential Median Ratio Stratification

### Subclass

#### Case Processing Summary

		Count	Percent
ABSTRIMP	.00	5	2.3%
	1212.00	209	96.8%
	1215.00	1	0.5%
	1220.00	1	0.5%
Overall		216	100.0%
Excluded		0	
Total		216	

#### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.799	1.084	.166	21.7%
1212.00	.970	1.012	.149	20.4%
1215.00	1.476	1.000	.000	.
1220.00	1.086	1.000	.000	.
Overall	.970	1.014	.151	20.7%

### Age

#### Case Processing Summary

		Count	Percent
AgeRec	0	5	2.3%
	Over 100	22	10.2%
	75 to 100	16	7.4%
	50 to 75	12	5.6%
	25 to 50	47	21.8%
	5 to 25	102	47.2%
	5 or Newer	12	5.6%
Overall		216	100.0%
Excluded		0	
Total		216	

#### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.799	1.084	.166	21.7%
Over 100	.926	1.020	.198	25.9%
75 to 100	.964	1.026	.151	21.0%
50 to 75	.975	1.033	.119	20.3%
25 to 50	.966	1.016	.154	20.9%
5 to 25	.972	1.017	.135	18.9%
5 or Newer	1.080	.992	.186	22.8%
Overall	.970	1.014	.151	20.7%

## Improved Area

### Case Processing Summary

		Count	Percent
ImpSFRec	0	5	2.3%
	LE 500 sf	2	0.9%
	500 to 1,000 sf	27	12.5%
	1,000 to 1,500 sf	66	30.6%
	1,500 to 2,000 sf	56	25.9%
	2,000 to 3,000 sf	39	18.1%
	3,000 sf or Higher	21	9.7%
Overall		216	100.0%
Excluded		0	
Total		216	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
0	.799	1.084	.166	21.7%
LE 500 sf	.870	1.077	.166	23.5%
500 to 1,000 sf	.950	1.022	.158	20.8%
1,000 to 1,500 sf	.970	1.001	.156	21.0%
1,500 to 2,000 sf	.978	1.038	.146	20.6%
2,000 to 3,000 sf	.936	1.016	.131	18.4%
3,000 sf or Higher	.974	1.050	.176	25.5%
Overall	.970	1.014	.151	20.7%

## Improvement Quality

### Case Processing Summary

		Count	Percent
QUALITY		5	2.3%
	AVERAGE	59	27.3%
	EXCELLENT	17	7.9%
	FAIR	74	34.3%
	GOOD	52	24.1%
	POOR	9	4.2%
Overall		216	100.0%
Excluded		0	
Total		216	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
	.799	1.084	.166	21.7%
AVERAGE	.960	1.034	.165	21.8%
EXCELLENT	1.032	1.012	.084	12.5%
FAIR	.969	1.041	.153	21.3%
GOOD	.987	1.012	.155	21.4%
POOR	.925	1.029	.074	10.0%
Overall	.970	1.014	.151	20.7%

### Commercial Median Ratio Stratification

#### Sale Price

#### Case Processing Summary

		Count	Percent
SPRec	LT \$25K	1	3.3%
	\$25K to \$50K	7	23.3%
	\$50K to \$100K	4	13.3%
	\$100K to \$150K	2	6.7%
	\$150K to \$200K	7	23.3%
	\$200K to \$300K	2	6.7%
	\$300K to \$500K	4	13.3%
	\$500K to \$750K	1	3.3%
	Over \$1,000K	2	6.7%
Overall		30	100.0%
Excluded		0	
Total		30	

### Ratio Statistics for CURRTOT / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	.221	1.000	.000	.
\$25K to \$50K	1.086	1.009	.175	23.0%
\$50K to \$100K	1.083	1.021	.145	18.5%
\$100K to \$150K	.998	1.001	.033	4.6%
\$150K to \$200K	.860	1.012	.207	29.0%
\$200K to \$300K	.914	.996	.114	16.2%
\$300K to \$500K	.992	1.005	.045	6.9%
\$500K to \$750K	1.012	1.000	.000	.
Over \$1,000K	.976	1.004	.058	8.2%
Overall	.994	1.003	.161	25.1%



**Subclass**

**Case Processing Summary**

		Count	Percent
ABSTRIMP	.00	12	40.0%
	2026.40	1	3.3%
	2212.00	3	10.0%
	2215.00	1	3.3%
	2225.00	1	3.3%
	2230.00	10	33.3%
	2235.00	1	3.3%
	9269.00	1	3.3%
Overall		30	100.0%
Excluded		0	
Total		30	

**Ratio Statistics for CURRTOT / TASP**

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.880	.893	.216	31.7%
2026.40	.990	1.000	.000	.
2212.00	1.145	1.134	.103	16.4%
2215.00	.809	1.000	.000	.
2225.00	1.031	1.000	.000	.
2230.00	.999	1.073	.130	19.8%
2235.00	1.086	1.000	.000	.
9269.00	1.025	1.000	.000	.
Overall	.994	1.003	.161	25.1%

**Vacant Land Median Ratio Stratification**

**Sale Price**

**Case Processing Summary**

		Count	Percent
SPRec	LT \$25K	188	62.3%
	\$25K to \$50K	51	16.9%
	\$50K to \$100K	35	11.6%
	\$100K to \$150K	16	5.3%
	\$150K to \$200K	11	3.6%
	\$200K to \$300K	1	0.3%
Overall		302	100.0%
Excluded		0	
Total		302	

### Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
LT \$25K	.971	1.050	.225	31.2%
\$25K to \$50K	.923	1.007	.153	21.6%
\$50K to \$100K	.960	.982	.182	27.6%
\$100K to \$150K	1.000	1.000	.089	18.0%
\$150K to \$200K	.820	1.001	.116	17.0%
\$200K to \$300K	.964	1.000	.000	.
Overall	.962	1.069	.200	28.6%

### Subclass

#### Case Processing Summary

	Count	Percent
ABSTRLND	.00	32
	100.00	217
	200.00	1
	520.00	1
	530.00	2
	540.00	4
	550.00	21
	560.00	6
	1135.00	2
	2112.00	3
	2130.00	13
Overall	302	100.0%
Excluded	0	
Total	302	

### Ratio Statistics for CURRLND / TASP

Group	Median	Price Related Differential	Coefficient of Dispersion	Coefficient of Variation Median Centered
.00	.957	1.029	.176	23.8%
100.00	.960	1.082	.226	31.1%
200.00	.960	1.000	.000	.
520.00	.975	1.000	.000	.
530.00	.962	1.000	.007	1.0%
540.00	.975	1.003	.153	23.0%
550.00	.971	1.004	.063	14.6%
560.00	.971	1.089	.204	38.7%
1135.00	.724	1.118	.327	46.2%
2112.00	.853	1.018	.048	10.0%
2130.00	1.000	1.031	.124	18.8%
Overall	.962	1.069	.200	28.6%